



# CFP2000 Result

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## IBM

AMD Opteron LS20 for IBM eServer Blade Center (AMD Opteron (TM) 252)

SPECfp\_rate2000 = 46.5

SPECfp\_rate\_base2000 = 42.8

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

90 80 70 60 50 40 30 20 10										Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
										168.wupwise	2	65.5	56.6	2	56.9	65.3
										171.swim	2	126	57.1	2	121	59.6
										172.mgrid	2	108	38.6	2	96.6	43.2
										173.applu	2	122	40.0	2	105	46.5
										177.mesa	2	69.6	46.7	2	64.4	50.4
										178.galgel	2	98.1	68.6	2	98.4	68.4
										179.art	2	114	53.0	2	75.1	80.3
										183.quake	2	81.7	36.9	2	76.2	39.6
										187.facerec	2	88.9	49.6	2	85.9	51.3
										188.amp	2	151	33.9	2	140	36.4
										189.lucas	2	98.0	47.4	2	97.8	47.5
										191.fma3d	2	131	37.2	2	131	37.3
										200.sixtrack	2	131	19.4	2	129	19.7
										301.apsi	2	158	38.2	2	152	39.6

### Hardware

CPU: AMD Opteron 252  
 CPU MHz: 2600  
 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: 4x2048MB, DDR400  
 Disk Subsystem: SCSI, 36GB 10K RPM  
 Other Hardware: None

### Software

Operating System: SuSE Linux 9.0 SLES 64 bit Kernel 2.6.5-7.139-smp (SP1)  
 Compiler: PathScale EKO Compiler Suite, Release 2.0  
 File System: Linux/reiserfs  
 System State: Multi-user, run level 3

## Notes/Tuning Information

Tested by IBM Corporation

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

### Baseline optimization

C: pathcc -Ofast -WOPT:mem\_opnds=on +FDO  
 Fortran: pathf90 -Ofast -LNO:fusion=2  
 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 -TENV:X=4  
 -IPA:space=1000:linear=on:plimit=50000:callee\_limit=5000  
 -INLINE:aggressive=on  
 171.swim: -Ofast -LNO:fusion=2 -m3dnw  
 172.mgrid: -O3 -LNO:fusion=2:blocking=off



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### Notes/Tuning Information (Continued)

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- OPT:Ofast:unroll_times_max=8:unroll_size=256:ro=3
- CG:gcm=off:cflow=off -m3dnow
173.applu: -Ofast -CG:local_fwd_sched=on
- LNO:fusion=2:fission=2:full_unroll_size=10000:prefetch=3
- OPT:ro=3 -TENV:X=3 -WOPT:val=2
177.mesa: -O2 -ipa -OPT:Ofast -fno-math-errno
- CG:local_fwd_sched=on +FDO
178.galgel: -Ofast -OPT:fast_complex
- CG:use_movlpd=on +FDO
179.art: -O3 -OPT:ro=2:div_split=on:alias=typed
- fno-math-errno -m32
183.quake: -Ofast -WOPT:mem_opnds=on -m32
187.facerec: -Ofast -OPT:treeheight=on:IEEE_NaN_Inf=off:ro=3
- CG:load_exe=0 -LNO:fusion=2 -IPA:plimit=1500 +FDO
188.ammp: -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
- fno-math-errno -TENV:X=4 +FDO
189.lucas: -Ofast -CG:local_fwd_sched=on -LNO:fusion=2 +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=6000 -fno-math-errno
- CG:load_exe=1 +FDO
301.apsi: -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0

```