



# CFP2000 Result

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## IBM

IBM eServer 326m, 2.6 GHz AMD Opteron(tm) Processor 252

SPECfp\_rate2000 = 48.9

SPECfp\_rate\_base2000 = 43.6

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	2	61.5	60.4	2	56.2	66.0
171.swim	2	128	56.4	2	120	60.1
172.mgrid	2	105	39.7	2	97.7	42.8
173.applu	2	103	47.3	2	93.3	52.2
177.mesa	2	82.2	39.5	2	63.2	51.4
178.galgel	2	92.4	72.8	2	84.5	79.6
179.art	2	103	58.4	2	73.0	82.6
183.quake	2	81.9	36.8	2	74.0	40.7
187.facerec	2	77.4	57.0	2	73.9	59.7
188.amp	2	144	35.4	2	137	37.4
189.lucas	2	103	45.2	2	92.0	50.4
191.fma3d	2	136	35.7	2	131	37.3
200.sixtrack	2	146	17.5	2	121	21.0
301.apsi	2	152	39.7	2	147	41.1

### Hardware

CPU: AMD Opteron(tm) Processor 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: 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.quake:   -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)