



# CFP2000 Result

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**IBM**  
IBM eServer e326 (AMD Opteron (TM) 252)

SPECfp2000 = **2008**  
SPECfp\_base2000 = **1833**

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	1000	2000	3000	4000
168.wupwise	1600	62.9	2543	58.2	2749				
171.swim	3100	130	2388	129	2400				
172.mgrid	1800	106	1691	99.6	1808				
173.applu	2100	110	1913	96.5	2176				
177.mesa	1400	69.7	2009	65.5	2138				
178.galgel	2900	95.0	3052	84.2	3443				
179.art	2600	116	2239	76.8	3387				
183.earthquake	1300	89.4	1454	81.3	1599				
187.facerec	1900	81.4	2335	78.8	2410				
188.amp	2200	153	1435	143	1544				
189.lucas	2000	99.8	2005	100	1995				
191.fma3d	2100	142	1484	134	1563				
200.sixtrack	1100	147	750	127	866				
301.apsi	2600	158	1645	156	1669				

### Hardware

CPU: AMD Opteron 252  
CPU MHz: 2600  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 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 1GB, DDR400  
Disk Subsystem: SCSI, 36GB 10K RPM  
Other Hardware: None

### Software

Operating System: SuSE Linux 9.0 SP1 SLES 64 bit Kernel 2.6.5-7.139-smp  
Compiler: PathScale EKOPath(TM) Compiler Suite, Release 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 -TENV:X=4

-IPA:space=1000:linear=on:plimit=50000:callee\_limit=5000

-INLINE:aggressive=on +FDO

171.swim: -Ofast -LNO:fusion=2

172.mgrid: -O3 -LNO:fusion=2:blocking=off

-OPT:Ofast:unroll\_times\_max=8:unroll\_size=256:ro=3 -CG:gcm=off:cflow=off

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

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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 +FDO
178.galgel:   -Ofast -OPT:fast_complex -CG:use_movlpd=on RM_SOURCES=lapak.f90 +ACML
179.art:      -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32 +FDO
183.quake:   -Ofast -WOPT:mem_opnds=on -CG:local_fwd_sched=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 -LNO:prefetch=0 +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: -Ofast -CG:load_exe=1 +FDO
301.apsi:    -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0

```

BIOS Configuration Notes  
Node Interleaving is Disabled

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