



# CFP2000 Result

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Advanced Micro Devices  
TYAN Tomcat K8E (S2865), AMD Opteron (TM) 154

SPECfp2000 = 2184  
SPECfp\_base2000 = 2026

SPEC license #: 49 Tested by: AMD, Austin, TX Test date: Aug-2005 Hardware Avail: Sep-2005 Software Avail: Aug-2005

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	Bar Chart (Scale 0-4000)			
168.wupwise	1600	53.1	3013	49.6	3224	[Bar chart showing ratio 3224]			
171.swim	3100	136	2278	134	2315	[Bar chart showing ratio 2315]			
172.mgrid	1800	101	1780	94.0	1915	[Bar chart showing ratio 1915]			
173.applu	2100	94.1	2232	86.9	2418	[Bar chart showing ratio 2418]			
177.mesa	1400	64.4	2174	60.2	2325	[Bar chart showing ratio 2325]			
178.galgel	2900	89.6	3235	81.3	3569	[Bar chart showing ratio 3569]			
179.art	2600	93.9	2770	68.2	3812	[Bar chart showing ratio 3812]			
183.quake	1300	74.3	1750	67.5	1926	[Bar chart showing ratio 1926]			
187.facerec	1900	77.5	2451	73.0	2604	[Bar chart showing ratio 2604]			
188.amp	2200	136	1623	126	1745	[Bar chart showing ratio 1745]			
189.lucas	2000	101	1984	101	1984	[Bar chart showing ratio 1984]			
191.fma3d	2100	121	1732	120	1745	[Bar chart showing ratio 1745]			
200.sixtrack	1100	122	904	115	957	[Bar chart showing ratio 957]			
301.apsi	2600	152	1711	147	1771	[Bar chart showing ratio 1771]			

### Hardware

CPU: AMD Opteron (TM) 154 (939-pin)  
CPU MHz: 2800  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
CPU(s) orderable: 1  
Parallel: No  
Primary Cache: 64KBI + 64KBD on chip  
Secondary Cache: 1024KB (I+D) on chip  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 4x512 MB, DDR400 CL2.0  
Disk Subsystem: IDE, Hitachi HDS722516VLAT20, 164 GB 7200 rpm  
Other Hardware: None

### Software

Operating System: SuSE Linux Enterprise Server 9 SP2 for AMD64  
Compiler: PathScale EKOPath(TM) Compiler Suite, Release 2.1  
File System: Linux/ext3  
System State: Multi-user, run level 3

## Notes/Tuning Information

Tested by AMD

```
+FDO: PASS1= -fb_create fbdata PASS2= -fb_opt fbdata
+ACML means -L/opt/acml2.5.1/pathscale64/lib -lacml,
           which causes linking with AMD Core Math Library V2.5.1
```

### Baseline optimization

```
C programs: -Ofast -WOPT:mem_opnds=on +FDO
Fortran programs: -Ofast -LNO:fusion=2 -OPT:fast_complex=on +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
```



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## Notes/Tuning Information (Continued)

```

171.swim:      -Ofast -LNO:fusion=2 -m3dnow
172.mgrid:    -O3 -LNO:fusion=2:blocking=off
              -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
177.mesa:     -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on +FDO
178.galgel:   -Ofast -OPT:fast_complex=on +ACML
179.art:      -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32
183.earthquake: -Ofast -CG:load_exe=2 -OPT:treeheight=on -WOPT:mem_opnds=on
              -m32 +FDO
187.facerec:  -Ofast -OPT:IEEE_NaN_Inf=off:ro=3 -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:    basepeak = true
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
The tested system can be assembled using a standard ATX case and an Antec True 550
Watt EPS12V power supply.
All memory slots were populated with Corsair CMX512-3200XL.
Memory timings manually set in BIOS: CAS=2, TRCD=2, TRAS=5, TRP=2
BIOS V2.00b

```