



# CFP2000 Result

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Advanced Micro Devices  
TYAN S2865 K8E Tomcat, AMD Opteron (TM) 152

SPECfp2000 = 2045  
SPECfp\_base2000 = 1901

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	56.6	2826	52.8	3032	
171.swim	3100	148	2099	145	2137	
172.mgrid	1800	109	1652	102	1773	
173.applu	2100	99.7	2107	92.2	2277	
177.mesa	1400	69.3	2020	65.3	2143	
178.galgel	2900	95.1	3048	86.4	3357	
179.art	2600	98.0	2652	71.7	3627	
183.quake	1300	77.9	1668	70.8	1835	
187.facerec	1900	82.1	2314	78.0	2436	
188.amp	2200	145	1512	135	1628	
189.lucas	2000	106	1891	106	1891	
191.fma3d	2100	130	1614	129	1623	
200.sixtrack	1100	131	838	124	884	
301.apsi	2600	162	1602	156	1663	

### Hardware

CPU: AMD Opteron (TM) 152 (939-pin)  
CPU MHz: 2600  
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, Western Digital WD2000JB, 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 footprint, an Antec True 550
Watt EPS12V power supply, and a PCI or PCIe graphics card.
All memory slots were populated with Corsair CMX512-3200XL.
Memory timings manually set in BIOS: CAS=2, TRCD=2, TRAS=5, TRP=2
BIOS version 1.01

```