



CFP2000 Result

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Advanced Micro Devices
TYAN S2865 K8E Tomcat, AMD Opteron (TM) 146

SPECfp2000 = 1760
SPECfp_base2000 = 1634

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	1000 2000 3000 4000			
168.wupwise	1600	68.1	2350	62.2	2571	[Bar chart showing ratio 2571]			
171.swim	3100	151	2046	149	2084	[Bar chart showing ratio 2084]			
172.mgrid	1800	127	1415	115	1568	[Bar chart showing ratio 1568]			
173.applu	2100	118	1784	109	1925	[Bar chart showing ratio 1925]			
177.mesa	1400	88.5	1581	83.5	1677	[Bar chart showing ratio 1677]			
178.galgel	2900	110	2635	99.5	2915	[Bar chart showing ratio 2915]			
179.art	2600	107	2428	81.8	3178	[Bar chart showing ratio 3178]			
183.earth	1300	84.6	1537	77.8	1672	[Bar chart showing ratio 1672]			
187.facerec	1900	95.7	1985	90.5	2100	[Bar chart showing ratio 2100]			
188.amp	2200	181	1213	167	1316	[Bar chart showing ratio 1316]			
189.lucas	2000	109	1841	109	1841	[Bar chart showing ratio 1841]			
191.fma3d	2100	155	1358	153	1370	[Bar chart showing ratio 1370]			
200.sixtrack	1100	170	649	161	685	[Bar chart showing ratio 685]			
301.apsi	2600	198	1310	190	1366	[Bar chart showing ratio 1366]			

Hardware

CPU: AMD Opteron (TM) 146 (939-pin)
CPU MHz: 2000
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