



# CFP2000 Result

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## Advanced Micro Devices

TYAN Thunder K8QSD Pro (S4882-D), AMD Opteron (TM) 880

SPECfp\_rate2000 = 139

SPECfp\_rate\_base2000 = 129

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	8	73.6	202	8	71.3	208
171.swim	8	245	117	8	242	119
172.mgrid	8	159	105	8	154	108
173.applu	8	140	139	8	128	152
177.mesa	8	83.3	156	8	77.6	167
178.galgel	8	123	218	8	117	230
179.art	8	151	160	8	105	230
183.quake	8	127	95.1	8	114	106
187.facerec	8	113	156	8	104	169
188.amp	8	181	113	8	168	122
189.lucas	8	148	125	8	148	125
191.fma3d	8	170	115	8	169	115
200.sixtrack	8	157	64.9	8	149	68.4
301.apsi	8	193	125	8	185	130

### Hardware

CPU: AMD Opteron (TM) 880  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip  
 CPU(s) orderable: 1-4  
 Parallel: No  
 Primary Cache: 64KBI + 64KBD/core  
 Secondary Cache: 1024KB (I+D)/core  
 L3 Cache: N/A  
 Other Cache: N/A  
 Memory: 16x512 MB, DDR400 ECC Reg CL2  
 Disk Subsystem: SATA, Western Digital WD740GD,  
 74 GB 10000 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
```



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### Notes/Tuning Information (Continued)

```

-INLINE:aggressive=on
171.swim: -Ofast -LNO:fusion=2 -m3dnw
172.mgrid: -O3 -LNO:fusion=2:blocking=off
          -OPT:Ofast:unroll_times_max=8:unroll_size=256:ro=3
          -CG:gcm=off:cflow=off -m3dnw
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
          RM_SOURCES=lapak.f90
179.art: -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32
183.quake: -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.ammpp: -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 system under test can be built using a SSI MEB case and an Enermax EPS 12V ATX-6ES 660W power supply. Taskset utility used to bind CPU(s) to processes. All memory slots were populated on all CPU(s). BIOS Rev E 1.03