



CFP2000 Result

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Advanced Micro Devices

TYAN Thunder K8QSD Pro (S4882-D), AMD Opteron (TM) 854

SPECfp_rate2000 = 98.3

SPECfp_rate_base2000 = 90.5

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	56.6	131	4	54.3	137
171.swim	4	127	113	4	124	116
172.mgrid	4	102	82.0	4	93.8	89.1
173.applu	4	102	95.7	4	90.2	108
177.mesa	4	65.3	99.5	4	61.0	106
178.galgel	4	90.0	149	4	81.6	165
179.art	4	111	109	4	77.7	155
183.equake	4	86.1	70.0	4	77.5	77.9
187.facerec	4	84.7	104	4	77.6	114
188.amp	4	142	71.8	4	132	77.2
189.lucas	4	94.5	98.2	4	94.5	98.2
191.fma3d	4	127	76.8	4	126	77.1
200.sixtrack	4	123	41.5	4	117	43.7
301.apsi	4	152	79.5	4	145	83.1

Hardware

CPU: AMD Opteron (TM) 854
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 4 cores, 4 chips, 1 core/chip
 CPU(s) orderable: 1-4
 Parallel: No
 Primary Cache: 64KBI + 64KBD on chip
 Secondary Cache: 1024KB (I+D) on chip
 L3 Cache: N/A
 Other Cache: N/A
 Memory: 16x512 MB, DDR400 ECC Reg CL2.5
 Disk Subsystem: SATA, Western Digital WD740GD, 74GB 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
             -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 system under test can be built using a 13" x 16" SSI MEB case and an Enermax EPS 12 Volt ATX-6ES 660 Watt power supply.
 All memory slots were populated with Kingston KRX3200AK2 on all CPU(s).
 Taskset utility used to bind CPU(s) to processes.
 Memory timings were manually set in BIOS: CL=2.5, TRCD=3, TRAS=6, TRP=3
 BIOS Rev E.1.02