



CFP2000 Result

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AMD

Tyan Thunder n4250QE (S4985), Opteron (TM) 2220

SPECfp_rate2000 = 94.3

SPECfp_rate_base2000 = 87.2

SPEC license #: 49 | Tested by: AMD, Austin, TX | Test date: Jan-2007 | Hardware Avail: Feb-2007 | Software Avail: Aug-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	57.6	129	4	53.8	138
171.swim	4	174	82.7	4	170	84.8
172.mgrid	4	116	72.1	4	111	75.2
173.applu	4	107	91.2	4	93.4	104
177.mesa	4	61.8	105	4	57.2	114
178.galgel	4	92.8	145	4	87.2	154
179.art	4	110	110	4	74.6	162
183.quake	4	90.6	66.6	4	81.8	73.8
187.facerec	4	74.7	118	4	74.4	118
188.amp	4	136	74.9	4	128	79.6
189.lucas	4	116	80.1	4	110	84.4
191.fma3d	4	130	75.1	4	131	74.5
200.sixtrack	4	117	43.8	4	112	45.7
301.apsi	4	149	80.7	4	142	85.0

Hardware

CPU: AMD Opteron (TM) 2220
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1,2
 Parallel: No
 Primary Cache: 64KBI + 64KBD on chip per core
 Secondary Cache: 1024KB (I+D) on chip per core
 L3 Cache: N/A
 Other Cache: N/A
 Memory: 8x1GB, DDR2-667 CL4 ECC Reg Dual rank
 Disk Subsystem: SATA, 74GB
 Other Hardware: None

Software

Operating System: SuSE Linux Enterprise Server 9 SP3 (64-bit)
 Compiler: PathScale EKOPATH(TM) Compiler Suite, Release 2.3
 File System: Linux/ext3
 System State: Multi-user, run level 3

Notes/Tuning Information

Tested by Advanced Micro Devices

```
+FDO: PASS1= -fb_create fbdata PASS2= -fb_opt fbdata
+ACML means -L<acml2.7.0-install-dir>/pathscale64/lib -lacml,
           which causes linking with AMD Core Math Library V2.7.0
```

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 -CG:local_fwd_sched=on -LNO:fusion=2 -m3dnow
172.mgrid:    -Ofast -CG:gcm=off -OPT:IEEE_arith=3:unroll_size=200
              -LNO:fusion=2:fission=1:blocking=off:prefetch_ahead=2
              -WOPT:mem_opnds=on:aggstr=0
173.applu:    -Ofast -CG:local_fwd_sched=on -OPT:ro=3 -TENV:X=3
              -LNO:fusion=2:fission=2:full_unroll_size=10000 +FDO
177.mesa:     -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on -WOPT:mem_opnds=on +FDO
178.galgel:   -Ofast -OPT:fast_complex=on +ACML +FDO
              RM_SOURCES=lapak.f90
179.art:      -O3 -OPT:Ofast -fno-math-errno -mno-sse2 -m32
183.quake:    -Ofast -CG:load_exe=2 -WOPT:mem_opnds=on -m32 +FDO
187.facerec:  -Ofast -LNO:fusion=2
              -OPT:fast_complex=on:IEEE_NaN_Inf=off:unroll_size=0 +FDO
188.ammp:     -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
              -fno-math-errno -TENV:X=4 +FDO
189.lucas:    -Ofast -OPT:ro=3:fast_nint=off:unroll_size=256 -WOPT:mem_opnds=on +FDO
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:early_intrinsics=on
              -fno-math-errno -CG:load_exe=1 +FDO
301.apsi:     -Ofast -CG:load_exe=0 -LNO:prefetch=0:simd=2

```

System can be built with a 700W Zippy Power Supply
 All memory slots populated on all CPU(s)
 taskset utility used to bind CPU(s) to processes.