



# CFP2000 Result

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**Advanced Micro Devices**  
Tyan Thunder K8QS Pro (S4882), AMD Opteron (TM) 850

SPECfp\_rate2000 = **79.2**  
SPECfp\_rate\_base2000 = **71.4**

SPEC license #: 49 | Tested by: AMD, Austin, TX | Test date: Aug-2004 | Hardware Avail: Jul-2004 | Software Avail: Aug-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	97.0	76.5	4	81.5	91.1
171.swim	4	122	118	4	122	118
172.mgrid	4	118	71.1	4	108	77.3
173.applu	4	139	70.1	4	115	85.0
177.mesa	4	97.0	67.0	4	69.9	93.0
178.galgel	4	106	127	4	97.7	138
179.art	4	166	72.9	4	122	98.8
183.quake	4	101	60.0	4	108	56.0
187.facerec	4	110	80.3	4	102	86.3
188.amp	4	163	62.7	4	155	66.0
189.lucas	4	136	68.4	4	113	81.9
191.fma3d	4	152	64.2	4	147	66.5
200.sixtrack	4	152	33.6	4	151	33.7
301.apsi	4	166	72.7	4	165	73.3

**Hardware**

CPU: AMD Opteron (TM) 850  
CPU MHz: 2400  
FPU: Integrated  
CPU(s) enabled: 4 cores, 4 chips, 1 core/chip  
CPU(s) orderable: 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 PC3200 CL3.0 ECC Registered  
Disk Subsystem: SCSI, Seagate Cheetah ST336753LW  
Ultra 320, 15K rpm  
Other Hardware: None

**Software**

Operating System: SuSE Linux Enterprise Sever 8 for AMD64 (SP3)  
SuSE kernel 2.4.21-143-numa  
Compiler: PathScale EKO Compiler Suite, Release 1.3  
File System: Linux/ext3  
System State: Multi-user SuSE Run level 3

## Notes/Tuning Information

Tested by Advanced Micro Devices

+FDO: PASS1= -fb\_create fbdata PASS2= -fb\_opt fbdata  
+ACML is linking with AMD Core Math Library

### Baseline optimization

C programs: -Ofast -WOPT:mem\_opnds=on +FDO  
Fortran programs: -Ofast -LNO:fusion=2

### 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 -TENV:X=4  
loader: -IPA:space=1000:linear=on:plimit=50000:callee\_limit=5000  
-INLINE:aggressive=on



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## Notes/Tuning Information (Continued)

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171.swim: -Ofast -LNO:fusion=2:prefetch=2
172.mgrid: -O3 -LNO:fusion=2:blocking=off:prefetch=2
          -OPT:Ofast:unroll_times_max=8:unroll_size=256:ro=3
          -CG:gcm=off:cflow=off
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 -WOPT:val=2
177.mesa: -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on +FDO
178.galgel: -Ofast -OPT:fast_complex -CG:load_exe=0:use_movlpd=on +ACML
179.art: -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32 +FDO
183.equake: -Ofast -WOPT:mem_opnds=on -CG:local_fwd_sched=on
187.facerec: -Ofast -OPT:treeheight=on:IEEE_NaN_Inf=off:ro=3 -CG:load_exe=0
            -LNO:fusion=2:prefetch=0 +FDO -IPA:plimit=1800
188.amp: -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3 -LNO:prefetch=0 -fno-math-errno -TENV:X=4 +FDO
189.lucas: -Ofast -CG:prefetch=off:load_exe=2:local_fwd_sched
          -TENV:X=4 -WOPT:retype_expr=on +FDO
191.fma3d: -O2 -ipa -WOPT:mem_opnds=on:retype_expr=on -OPT:Ofast:IEEE_arith=3:ro=3
          +FDO -IPA:pu_reorder=1
200.sixtrack:= -Ofast +FDO
301.apsi: -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0
BIOS rev. 1.00
Taskset utility used to bind process to cpu(s)
All memory slots populated
The tested system can be assembled using an SSI MEB footprint case, such as the CCSI RC0352 3U rackmount case,
and a Tyan recommended 650W EPS-12V power supply, such as the Enermax 660W power supply (PEG851AX-VH)

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