



CFP2000 Result

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Rackable Systems
C1000-A01-25E26 (AMD Opteron 285)

SPECfp2000 = 2035
SPECfp_base2000 = 1889

SPEC license #: 64 Tested by: Rackable Systems Test date: Jul-2006 Hardware Avail: Aug-2006 Software Avail: Mar-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	60.6	2642	55.7	2874	
171.swim	3100	132	2352	127	2446	
172.mgrid	1800	111	1622	103	1752	
173.applu	2100	102	2058	95.5	2198	
177.mesa	1400	68.3	2049	64.4	2172	
178.galgel	2900	93.8	3092	87.7	3307	
179.art	2600	108	2412	76.6	3395	
183.earthquake	1300	84.6	1537	78.8	1650	
187.facerec	1900	77.0	2467	75.0	2534	
188.amp	2200	144	1524	140	1575	
189.lucas	2000	114	1754	104	1931	
191.fma3d	2100	131	1602	133	1577	
200.sixtrack	1100	125	880	120	916	
301.apsi	2600	160	1625	151	1718	

Hardware

CPU: AMD Opteron 285
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1,2 chip(s)
 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: 4x1024MB, DDR
 Disk Subsystem: 1x 250GB SATA
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux 4 Update 2 x86_64
 Compiler: PathScale EKOPath(TM) Compiler Suite, Release 2.4 (for C and Fortran)
 AMD Core Mathematical Library (ACML), Version 3.1.0
 File System: Linux/ext3
 System State: Multi-user, run level 3

Notes/Tuning Information

Portability flags:

178.galgel: -fixedform

Feedback Optimization:

+FDO: PASS1=-fb_create fbdata PASS2=-fb_opt fbdata

AMD Core Math Library

+ACML means -L<acml-install-dir>/pathscale64/lib -lacml, which causes linking with AMD Core Math Library

Baseline Optimization Flags:

C programs: -Ofast -WOPT:mem_opnds=on +FDO
Fortran programs: -Ofast -LNO:fusion=2 -OPT:fast_complex=on +FDO

Peak Tuning Flags:

168.wupwise: -Ofast -LNO:prefetch Ahead=5:prefetch=3
-OPT:unroll_times_max=8:unroll_size=128:IEEE_NaN_Inf=off:ro=3



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Notes/Tuning Information (Continued)

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-IPA:linear=on:plimit=50000:callee_limit=5000
-INLINE:aggressive=on
171.swim: -Ofast -CG:local_fwd_sched=on -LNO:fusion=2 -m3dnw
172.mgrid: -Ofast -CG:gcm=off -OPT:IEEE_a=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:prefetch=3
          +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
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
Taskset utility used to bind process to CPU(s)

```