



CFP2000 Result

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Sun Microsystems
Sun Fire X4100

SPECfp2000 = 2412

SPECfp_base2000 = 2157

SPEC license #: 6 Tested by: Sun Microsystems, Santa Clara Test date: Mar-2006 Hardware Avail: May-2006 Software Avail: Mar-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	50.9	3145	46.8	3422	
171.swim	3100	117	2641	115	2687	
172.mgrid	1800	92.1	1954	88.0	2045	
173.applu	2100	124	1688	83.0	2529	
177.mesa	1400	71.8	1951	54.5	2568	
178.galgel	2900	82.1	3534	73.5	3947	
179.art	2600	60.1	4325	54.5	4768	
183.quake	1300	61.4	2118	61.1	2129	
187.facerec	1900	67.7	2808	67.7	2808	
188.amp	2200	133	1648	121	1821	
189.lucas	2000	106	1879	83.8	2387	
191.fma3d	2100	112	1877	112	1877	
200.sixtrack	1100	120	920	106	1036	
301.apsi	2600	143	1812	134	1939	

Hardware

CPU: AMD Opteron (TM) 256
CPU MHz: 3000
FPU: Integrated
CPU(s) enabled: 1 core, 1 chip, 1 core/chip
CPU(s) orderable: 1,2 (order by # of chips)
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: 8GB (4x2GB, PC3200 CL3 DDR ECC Registered SDRAM)
Disk Subsystem: SAS,36GB,10K RPM
Other Hardware: None

Software

Operating System: SUSE LINUX Enterprise Server 9 SP3 (x86_64)
Compiler: PathScale EKOPath(TM) Compiler Suite, Version 2.3
PGI Compiler for Linux, Release 6.1-3
AMD Core Mathematical Library (ACML), Version 3.0.0
File System: ufs
System State: Multi-user

Notes/Tuning Information

Portability flags:

178.galgel (base using pgf90) : -Mfixed
178.galgel (peak using pathf95) : -fixedform

Feedback Optimization +FDO:

PGI : PASS1=-Mpmfi PASS2=-Mpmfo
PathSale: PASS1=-fb_create fbdata PASS2=-fb_opt fbdata

+ACML means -Lacml-install-dir/pathscale64/lib -lacml,
which links with AMD Core Math Library

Baseline Optimization Flags:

C programs : pgcc -fastsse -Mipa=fast,inline +FDO
Fortran programs: pgf90 -fastsse -Mipa=fast,inline +FDO

Peak Tuning Flags:

168.wupwise: pathf95 -Ofast -LNO:prefetch Ahead=5:prefetch=3



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Notes/Tuning Information (Continued)

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-OPT:unroll_times_max=8:unroll_size=128:IEEE_NaN_Inf=off:ro=3
-IPA:linear=on:plimit=50000:callee_limit=5000
-CG:local_fwd_sched=on -m3dnow
171.swim: pathf95 -Ofast -CG:local_fwd_sched=on -LNO:fusion=2 -m3dnow
172.mgrid: pathf95 -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: pathf95 -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: pathf95 -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on
          -WOPT:mem_opnds=on +FDO
178.galgel: pathf95 -Ofast -OPT:fast_complex=on +ACML +FDO
           RM_SOURCES=lapak.f90
179.art: pgcc -fastsse -Munroll=n:9 -Mipa=fast,inline -tp k8-32
183.quake: pgcc -fastsse -Mflushz -Mnovect -Mipa=fast,inline ONESTEP=yes +FDO
187.facerec: pgf90 basepeak=1
188.ammp: pathcc -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
          -fno-math-errno -TENV:X=4 +FDO
189.lucas: pathf95 -O3 -OPT:ro=3:fast_nint=off:unroll_size=256
          -WOPT:mem_opnds=on +FDO
191.fma3d: pgf90 basepeak=1
200.sixtrack: pathf95 -O3 -OPT:Ofast:Olimit=6000:early_intrinsics=on
          -fno-math-errno -CG:load_exe=1 +FDO
301.apsi: pathf95 -Ofast -CG:load_exe=0 -LNO:prefetch=0:simd=2

```

Default BIOS settings was used.
System was tested in 1-chip configuration.

This result was measured on the Sun Fire X4200.
Sun Fire X4100 and Sun Fire X4200 are electronically equivalent.