



# CFP2000 Result

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Sun Microsystems  
Sun Fire X4100

SPECfp\_rate2000 = 55.6

SPECfp\_rate\_base2000 = 50.0

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	2	51.0	72.7	2	48.8	76.1
171.swim	2	119	60.4	2	115	62.3
172.mgrid	2	91.3	45.7	2	87.8	47.6
173.applu	2	124	39.1	2	83.3	58.5
177.mesa	2	71.1	45.7	2	53.9	60.3
178.galgel	2	82.3	81.8	2	74.5	90.3
179.art	2	61.1	98.7	2	56.1	108
183.equake	2	61.9	48.7	2	62.2	48.5
187.facerec	2	67.8	65.0	2	67.8	65.0
188.amp	2	133	38.5	2	122	41.9
189.lucas	2	106	43.6	2	83.7	55.4
191.fma3d	2	112	43.6	2	112	43.6
200.sixtrack	2	119	21.5	2	106	24.2
301.apsi	2	143	42.2	2	134	45.1

### Hardware

CPU: AMD Opteron (TM) 256  
CPU MHz: 3000  
FPU: Integrated  
CPU(s) enabled: 2 cores, 2 chips, 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: 16GB (8x2GB, 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 3.0.1  
File System: ufs  
System State: Multi-user

## Notes/Tuning Information

### Portability flags:

178.galgel (pgf90) : -Mfixed

### Feedback Optimization +FDO:

PGI : PASS1=-Mpfi PASS2=-Mpfo  
PathSale: PASS1=-fb\_create fbdata PASS2=-fb\_opt fbdata

### 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  
-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



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## Notes/Tuning Information (Continued)

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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: pgf90 -fastsse -O4 -Mipa=fast,inline ONESTEP=yes +FDO
           RM_SOURCES=lapak.f90
           EXTRALIBS=-lacml
179.art: pgcc -fastsse -Munroll=n:9 -Mipa=fast,inline -tp k8-32
183.quake: pgcc -fastsse -Mflushz -Mvect -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

```

taskset has been used to bind processes to CPUs  
Default BIOS settings was used.

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