



# CFP2000 Result

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Sun Microsystems  
Sun Fire V20z

SPECfp\_rate2000 = 37.2

SPECfp\_rate\_base2000 = 33.7

SPEC license #: 6 Tested by: Sun Microsystems, Santa Clara Test date: Jul-2004 Hardware Avail: Jul-2004 Software Avail: Jul-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	2	99.6	37.3	2	79.0	47.0
171.swim	2	156	46.2	2	148	48.5
172.mgrid	2	155	27.0	2	123	33.9
173.applu	2	165	29.5	2	142	34.3
177.mesa	2	76.8	42.3	2	70.8	45.9
178.galgel	2	111	60.4	2	103	65.5
179.art	2	262	23.0	2	174	34.6
183.quake	2	98.6	30.6	2	92.3	32.7
187.facerec	2	86.5	50.9	2	86.5	50.9
188.amp	2	164	31.1	2	159	32.1
189.lucas	2	146	31.9	2	139	33.4
191.fma3d	2	144	33.9	2	144	33.9
200.sixtrack	2	150	17.0	2	150	17.0
301.apsi	2	177	34.1	2	174	34.7

### Hardware

CPU: AMD Opteron (TM) 250  
CPU MHz: 2400  
FPU: Integrated  
CPU(s) enabled: 2 cores, 2 chips, 1 core/chip  
CPU(s) orderable: 1,2  
Parallel: No  
Primary Cache: 64KBI + 64KBD on chip  
Secondary Cache: 1024KB (I+D) on chip  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 8x1GB, PC2700 CL2.5 DDR SDRAM ECC Registered  
Disk Subsystem: SCSI, 73GB, 10K RPM  
Other Hardware: None

### Software

Operating System: SuSE Linux 8.0 SLES 64 bit (SP3)  
Compiler: PathScale EKO Compiler Suite, Release 1.1  
SuSE optional gcc 3.3 (from SLES8 SP3)  
PGI Fortran 5.2 (build 5.2-0E)  
AMD Core Math Library (Version 2.0) for AMD64  
File System: Linux/ext3  
System State: Multi-user, Run level 3

## Notes/Tuning Information

A two-pass compilation method is used where indicated:

+PSFDO indicates PathScale feedback

PASS1: -fb\_create fbdata

PASS2: -fb\_opt fbdata

+ACML is the AMD Core Math Library V2.0

Compilers:

C: pathcc (PathScale C) unless otherwise noted

Fortran: pathf90 (PathScale f90) unless otherwise noted

If other compilers are used, they are indicated as:

gcc: Gnu C

pgf90: PGI Fortran

Floating Point base tuning:

Fortran: pgf90 -fastsse -Mipa=fast -Msmart

C: pathcc -Ofast -WOPT:mem\_opnds=on +PSFDO

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## Notes/Tuning Information (Continued)

Floating Point peak tuning:

```

168.wupwise: pgf90 -fastsse -Mipa=fast,inline -Msmart
171.swim: -Ofast -OPT:ro=3 -LNO:fusion=2:prefetch=2
172.mgrid: -O3 -OPT:Ofast
           -LNO:fusion=2:blocking=off:ou_max=5:sclrze=off:prefetch=2
           -OPT:unroll_times=8:unroll_size=256:ro=3
           -CG:gcm=off:cflow=off
173.applu: -O3 -ipa
           -LNO:fusion=2:interchange=OFF:blocking=OFF:ou_prod_max=10
           :ou_max=5:prefetch=2 -OPT:IEEE_arith=1:ro=3:unroll_size=0
           -TENV:X=4 -WOPT:mem_opnds=on:retype_expr=on:val=0 -CG:local_fwd_sched=on
177.mesa: -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on +PSFDO
178.galgel: pgf90 -fastsse -Mipa=fast -mp +ACML
           RM_SOURCES=lapak.f90 ONESTEP
179.art: -O3 -OPT:Ofast -fno-math-errno -m32 +PSFDO
183.earthquake: gcc -DSPEC_CPU2000_LP64 -O3 -funroll-all-loops -ffast-math
           -finline-limit=2000 ONESTEP
187.facerec: basepeak=true
188.ammp: -O3 -OPT:alias=disjoint:unroll_times=8:Ofast:ro=3
           -fno-math-errno -TENV:X=4 +PSFDO
189.lucas: pgf90 -fastsse -Mipa=fast,inline -Msmart
191.fma3d: basepeak=true
200.sixtrack: basepeak=true
301.apsi: -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0:blocking=off
           -IPA:linear=on:plimit=525

```

Portability:

178.galgel: -Mfixed

Notes:

BIOS build 2.1.0.9E, default setting was used.