# CFP2000 Result

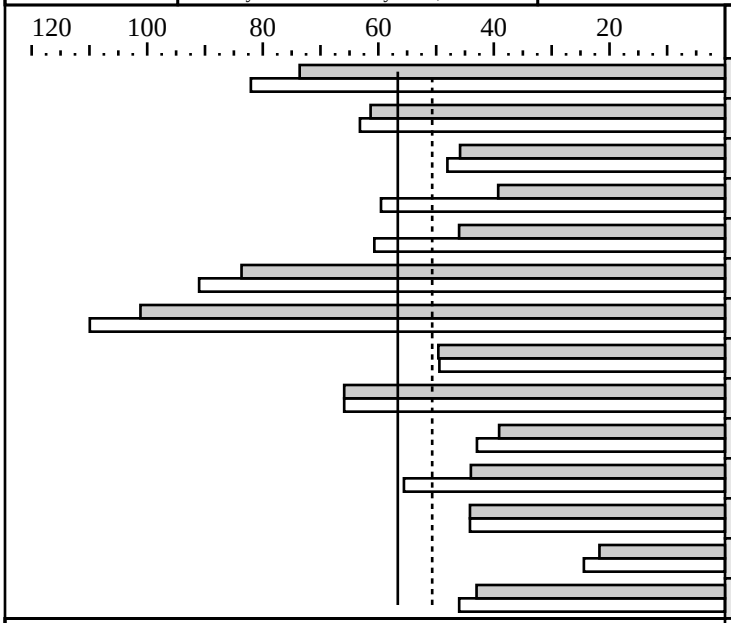


## Sun Microsystems
## Sun Ultra 40

SPECfp_rate2000 = 56.6

SPECfp_rate_base2000 = 50.7

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




| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|---|---|---|---|---|---|---|
| 168.wupwise | 2 | 50.4 | 73.6 | 2 | 45.2 | 82.1 |
| 171.swim | 2 | 117 | 61.3 | 2 | 114 | 63.2 |
| 172.mgrid | 2 | 91.1 | 45.9 | 2 | 86.9 | 48.0 |
| 173.applu | 2 | 124 | 39.3 | 2 | 81.8 | 59.5 |
| 177.mesa | 2 | 70.6 | 46.0 | 2 | 53.5 | 60.7 |
| 178.galgel | 2 | 80.4 | 83.7 | 2 | 73.9 | 91.0 |
| 179.art | 2 | 59.6 | 101 | 2 | 54.9 | 110 |
| 183.equake | 2 | 60.8 | 49.6 | 2 | 61.0 | 49.5 |
| 187.facerec | 2 | 66.9 | 65.9 | 2 | 66.9 | 65.9 |
| 188.ammp | 2 | 131 | 39.1 | 2 | 119 | 42.9 |
| 189.lucas | 2 | 105 | 44.0 | 2 | 83.5 | 55.6 |
| 191.fma3d | 2 | 110 | 44.1 | 2 | 110 | 44.1 |
| 200.sixtrack | 2 | 117 | 21.7 | 2 | 104 | 24.4 |
| 301.apsi | 2 | 140 | 43.0 | 2 | 131 | 46.0 |

### 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 number 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: | SATA,250GB,7200 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE LINUX Enterprise Server 9 SP3 (x86_64) |
| Compiler: | PathScale EKOPath(TM) Compiler Suite, Version 2.3<br>PGI Compiler for Linux, Release 6.1-3<br>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=-Mpfi               PASS2=-Mpfo
   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
```

## Notes/Tuning Information (Continued)

```
                -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.equake:    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

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