



# CFP2000 Result

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Sun Microsystems  
Sun Fire X4100

SPECfp2000 = 2518  
SPECfp\_base2000 = 2256

SPEC license #: 6 Tested by: Sun Microsystems, Santa Clara Test date: Aug-2005 Hardware Avail: Oct-2005 Software Avail: Nov-2005

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	53.3	3004	50.9	3143	
171.swim	3100	73.8	4202	67.4	4597	
172.mgrid	1800	51.1	3525	53.0	3398	
173.applu	2100	53.0	3960	52.1	4030	
177.mesa	1400	85.6	1635	71.9	1946	
178.galgel	2900	61.3	4733	61.1	4744	
179.art	2600	113	2307	113	2307	
183.quake	1300	71.2	1825	67.6	1924	
187.facerec	1900	59.6	3186	44.6	4260	
188.amp	2200	151	1459	149	1480	
189.lucas	2000	94.2	2123	94.2	2123	
191.fma3d	2100	110	1913	109	1931	
200.sixtrack	1100	284	388	135	813	
301.apsi	2600	123	2108	107	2424	

### Hardware

CPU: AMD Opteron (TM) 254  
CPU MHz: 2800  
FPU: Integrated  
CPU(s) enabled: 2 cores, 2 chips, 1 core/chip  
CPU(s) orderable: 1,2 (order by # of chips)  
Parallel: Yes  
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 SDRAM ECC Registered)  
Disk Subsystem: SAS, 36GB, 10K RPM  
Other Hardware: None

### Software

Operating System: Solaris 10 3/05 HW1  
Compiler: Sun Studio 11  
File System: ufs  
System State: Multi-user

## Notes/Tuning Information

Compiler invocation:

C: cc  
F90: f90  
F77: f90

FDO: PASS1= -xprofile=collect:./feedback PASS2= -xprofile=use:./feedback  
fdo\_pre0: rm -rf ./feedback.profile

Floating point base flags:

F90: -fast -xautopar -xipo=2 -xarch=amd64 ONESTEP=yes  
C: -fast -xcrossfile -xalias\_level=std -xpagesize=2m ONESTEP=yes

Floating point peak flags:

ONESTEP=yes for all benchmarks

168.wupwise: -fast -xautopar -xpad=common:3969 -xipo=2 -xarch=amd64 -xprefetch\_level=3 -xpagesize\_heap=2m



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## Notes/Tuning Information (Continued)

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171.swim:      -fast -xpad=common:3969 -xipo=2 -xvector=simd -xprefetch_level=3 -Qoption iropt
              -Atile:skewp,-Ainline:cs=700 -xarch=amd64 -Qoption ube_ipa -inl_alt
              -xpagesize_stack=2m
172.mgrid:    -fast -xautopar -stackvar -xpad=common:900 -xipo=2 -xarch=amd64 -xprefetch_level=3 -xvector
              -xpagesize=2m -Qoption ld -M,/usr/lib/ld/map.bssalign
173.applu:    -fast -xautopar -stackvar -xO4 -xipo=2 -xprefetch_level=3 -xarch=amd64 -Qoption iropt
              -Aujam:inner=g -xpagesize_heap=2m
177.mesa:     -fast -xautopar -xO4 -xipo=2 -Wd,-iropt-prof -xarch=amd64 -xalias_level=strong -xpagesize=2m +FDO
178.galgel:   -fast -xipo=2 -xarch=amd64 -xprefetch_level=3
179.art:      basepeak=yes
183.quake:    -fast -xipo=2 -xprefetch -xalias_level=strong -xpagesize=2m -lmopt -lm +FDO
187.facerec:  -fast -xO4 -xipo=2 -xprefetch_level=3 -xpagesize=2m
              RM_SOURCES=cfftb.f90 cffti.f90 cfftf.f90
              EXTRALIBS=-xlic_lib=sunperf
188.ammp:     -fast -xO4 -xipo=2 -xarch=amd64 -xalias_level=std -xpagesize_heap=2m -lmopt -lm
189.lucas:    basepeak=yes
191.fma3d:    -fast -xautopar -fsimple=1 -xipo=2 -xprefetch_level=3 -xarch=amd64 -xpagesize_heap=2m +FDO
200.sixtrack: -fast -xipo=2 -O -xprefetch_level=3 -xarch=amd64 -xpagesize_heap=2m
              -Qoption ld -M,/usr/lib/ld/map.bssalign +FDO
301.apsi:     -fast -xO4 -xipo=2 -xprefetch_level=3 -xarch=amd64 -xpagesize=2m

```

### Portability:

178.galgel: -e -fixed -DSPEC\_CPU2000\_LP64

### Shell Environments:

Stack size set to unlimited via "ulimit -s unlimited"  
export PARALLEL=2

### Kernel Parameters (/etc/system):

autoup=900  
tune\_t\_fsflushr=1

Processes were bound to CPUs using submit=pbind

Default BIOS setting was used