



# CFP2000 Result

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Sun Microsystems  
Sun Fire X4200 M2

SPECfp2000 = 3515  
SPECfp\_base2000 = 2857

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	50.2	3188	48.7	3284
171.swim	3100	55.4	5591	55.2	5611
172.mgrid	1800	32.1	5615	31.9	5642
173.applu	2100	30.9	6807	30.2	6946
177.mesa	1400	81.9	1709	67.1	2088
178.galgel	2900	53.2	5450	46.4	6254
179.art	2600	27.0	9617	13.8	18776
183.earth	1300	37.7	3451	34.0	3828
187.facerec	1900	56.7	3353	39.9	4764
188.amp	2200	147	1501	147	1501
189.lucas	2000	91.4	2188	87.1	2297
191.fma3d	2100	106	1973	106	1973
200.sixtrack	1100	441	250	139	790
301.apsi	2600	123	2117	103	2528

### Hardware

CPU: AMD Opteron (TM) 2220 SE  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/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, DDR2-667 CL5 ECC Reg)  
 Disk Subsystem: SAS,72GB,10K RPM  
 Other Hardware: None

### Software

Operating System: Solaris 10 6/06  
 Compiler: Sun Studio 11 with Patches  
 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 -xipo=2 -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  
 171.swim: -fast -xautopar -xipo=2 -xarch=amd64 -lmvec



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## Notes/Tuning Information (Continued)

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172.mgrid:      -fast -xautopar -xipo=2 -xarch=amd64 -lmvec
173.applu:      -fast -xprefetch=auto -xprefetch_level=3 -Qoption iropt -Rloop_dist -xautopar -xipo=2 -xarch=amd64
177.mesa:       -fast -xautopar -xO4 -xipo=2 -Wd,-iropt-prof -xarch=amd64 -xalias_level=strong -xpagesize=2m +FDO
178.galgel:     -fast -xautopar -stackvar -xipo=2 -xarch=amd64 -xprefetch=no%auto
                EXTRA_LIBS          = -xlic_lib=sunperf
179.art:        -fast -xvector -xipo=2 -xalias_level=strong -xprefetch -Wd,-iropt-prof -xpagesize=2m -lmvec +FDO
183.quake:      -fast -xvector -Wd,-iropt-prof -xipo=2 -xprefetch -xalias_level=strong -xpagesize=2m -lmvec
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:       basepeak=yes
189.lucas:      -fast -xprefetch=auto -xprefetch_level=3 -Qoption iropt -Rloop_dist
                -xautopar -xipo=2 -xarch=amd64 -xprefetch_level=3
191.fma3d:      basepeak=yes
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: -fixed

Shell Environments:  
Stack size set to unlimited via "ulimit -s unlimited"  
export PARALLEL=4

The following patches were applied to Sun Studio 11 compiler:  
120759-07 : x86/x64  
121016-03 : x86 C  
121020-03 : x86 F90  
121018-03 : x86 C++

This result was measured on the Sun Fire X4100 M2  
Sun Fire X4100 M2 and Sun Fire X4200 M2 are electronically equivalent.

Default BIOS setting was used