



# CFP2000 Result

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Sun Microsystems  
Sun Fire X4200

SPECfp2000 = 2471

SPECfp\_base2000 = 2223

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	52.3	3060	49.9	3205	
171.swim	3100	65.6	4725	63.2	4904	
172.mgrid	1800	92.7	1942	86.7	2075	
173.applu	2100	88.0	2387	79.9	2627	
177.mesa	1400	81.5	1718	63.6	2203	
178.galgel	2900	81.6	3555	57.5	5042	
179.art	2600	105	2478	99.7	2609	
183.quake	1300	67.4	1929	62.4	2084	
187.facerec	1900	60.5	3142	42.3	4490	
188.amp	2200	139	1587	137	1600	
189.lucas	2000	105	1901	105	1901	
191.fma3d	2100	108	1937	105	1996	
200.sixtrack	1100	129	850	127	865	
301.apsi	2600	110	2356	100	2598	

### Hardware

CPU: AMD Opteron (TM) 256  
CPU MHz: 3000  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 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: 8GB (4x2GB, PC3200 CL3 DDR ECC Registered SDRAM)  
Disk Subsystem: SAS,36GB,10K RPM  
Other Hardware: None

### Software

Operating System: Solaris 10 1/06  
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 -xipo=2 -xarch=amd64 -xprefetch\_level=3 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  
171.swim: -fast -xpad=common:3969 -xipo=2 -xvector=simd -xprefetch\_level=3 -Qoption iropt



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## Notes/Tuning Information (Continued)

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-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 -unroll=5 -stackvar -x04 -xipo=2 -xprefetch_level=3 -xarch=amd64a
-qoption iropt -Rloop_dist -xpagesize_heap=2m
177.mesa: -fast -xautopar -x04 -xipo=2 -Wd,-iropt-prof -xarch=amd64 -xalias_level=strong -xpagesize=2m +FDO
178.galgel: -fast -xcache=64/32/4:1024/64/4 -xcrossfile -xpagesize_heap=2m -xprefetch_level=3 -xvector=simd -xarch=amd64
RM_SOURCES=lapak.f90
EXTRALIBS=-xlic_lib=sunperf
179.art: -fast -xipo=2 -xprefetch -xalias_level=strong -xpagesize=2m
183.quake: -fast -xipo=2 -xprefetch -xalias_level=strong -xpagesize=2m -lmopt -lm +FDO
187.facerec: -fast -x04 -xipo=2 -xprefetch_level=3 -xpagesize=2m
RM_SOURCES=cfftb.f90 cffti.f90 cfftf.f90
EXTRALIBS=-xlic_lib=sunperf
188.amp: -fast -xcache=64/32/4:1024/64/4 -x04 -xipo=2 -xarch=amd64a -xalias_level=std -xpagesize_heap=2m -lmopt -lm
189.lucas: -fast -Qoption ube_ipa -inl_alt -xipo=2 -xarch=amd64 -xprefetch_level=3
191.fma3d: -fast -xcache=64/32/4:1024/64/4 -unroll=5 -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 -x04 -xipo=2 -xprefetch_level=3 -xarch=amd64a -xpagesize=2m

```

Portability:  
178.galgel: -fixed

Shell Environments:  
Stack size set to unlimited via "ulimit -s unlimited"

Kernel Parameters (/etc/system):  
autoup=900  
tune\_t\_fsflushr=1

System was tested in 1 chips configuration

Default BIOS setting was used

This result was measured on the Sun Fire X4200. In addition, Sun has submitted the same result for the Sun Fire X4100, which is electronically equivalent to the Sun Fire X4200.