



# CFP2000 Result

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Sun Microsystems  
Sun Fire X4600

SPECfp2000 = 3538

SPECfp\_base2000 = 2851

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	51.9	3084	49.2	3254
171.swim	3100	47.8	6482	47.8	6482
172.mgrid	1800	29.8	6046	29.8	6046
173.applu	2100	31.6	6642	31.6	6642
177.mesa	1400	76.9	1822	62.9	2225
178.galgel	2900	53.8	5395	47.0	6172
179.art	2600	29.8	8719	14.4	18094
183.earth	1300	38.8	3348	38.8	3347
187.facerec	1900	63.3	3001	42.3	4493
188.amp	2200	139	1578	139	1578
189.lucas	2000	95.9	2086	94.7	2113
191.fma3d	2100	108	1939	108	1939
200.sixtrack	1100	454	242	121	912
301.apsi	2600	119	2188	101	2585

### Hardware

CPU: AMD Opteron (TM) 856  
CPU MHz: 3000  
FPU: Integrated  
CPU(s) enabled: 4 cores, 4 chips, 1 core/chip  
CPU(s) orderable: 4,8 (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: 32GB (16x2GB, PC3200 CL3 DDR SDRAM ECC Regd.)  
Disk Subsystem: SAS,73GB,10K RPM  
Other Hardware: None

### Software

Operating System: Solaris 10 1/06  
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  
C: -fast -xipo=2 -xalias\_level=std -xpagesize=2m

#### 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: basepeak=yes



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## Notes/Tuning Information (Continued)

```
172.mgrid:      basepeak=yes
173.applu:      basepeak=yes
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_level=3
               EXTRA_LIBS = -xlic_lib=sunperf
179.art:      -fast -xipo=2 -xalias_level=strong -xprefetch -Wd,-iropt-prof -xpagesize=2m +FDO
183.earthquake: -fast -Wd,-iropt-prof -xipo=2 -xprefetch -xalias_level=strong -xpagesize=2m
187.facerec:  -fast -xO4 -xipo=2 -xprefetch_level=3 -xpagesize=2m
               RM_SOURCES=cfft.f90 cfft.f90 cfft.f90
               EXTRALIBS=-xlic_lib=sunperf
188.ammp:     basepeak=yes
189.lucas:    -fast -xautopar -Qoption ube_ipa -inl_alt -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
```

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

```
autoup=900
tune_t_fsflushr=1
```

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++
```

Default BIOS setting was used