



# CFP2000 Result

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Sun Microsystems  
Sun Ultra 45

SPECfp\_rate2000 = 31.2  
SPECfp\_rate\_base2000 = 29.0

SPEC license #: 6 Tested by: Sun Microsystems Test date: Feb-2006 Hardware Avail: Jan-2006 Software Avail: Jan-2006

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	2	113	32.9	2	112	33.2
171.swim	2	183	39.4	2	161	44.8
172.mgrid	2	234	17.9	2	234	17.9
173.applu	2	188	25.9	2	166	29.3
177.mesa	2	157	20.7	2	136	23.9
178.galgel	2	134	50.3	2	117	57.7
179.art	2	23.4	257	2	21.4	282
183.quake	2	75.7	39.8	2	70.6	42.7
187.facerec	2	99.0	44.5	2	95.9	46.0
188.amp	2	403	12.7	2	353	14.5
189.lucas	2	268	17.3	2	268	17.3
191.fma3d	2	299	16.3	2	269	18.1
200.sixtrack	2	188	13.6	2	180	14.2
301.apsi	2	283	21.3	2	283	21.3

### Hardware

CPU: UltraSPARC IIIi  
CPU MHz: 1600  
FPU: Integrated  
CPU(s) enabled: 2 cores, 2 chips, 1 core/chip  
CPU(s) orderable: 1,2 (order by # of chips)  
Parallel: No  
Primary Cache: 32KBI+64KBD per chip (on chip)  
Secondary Cache: 1MB(I+D) per chip (on chip)  
L3 Cache: None  
Other Cache: None  
Memory: 16GB(8x2GB DIMMs)  
Disk Subsystem: SATA,250GB,7200 RPM  
Other Hardware: None

### Software

Operating System: Solaris 10 1/06  
Compiler: Sun Studio 11  
File System: ufs (default ufs logging on with Solaris 10)  
System State: Multi-User

## Notes/Tuning Information

#### Compiler invocation:

C: cc  
F90: f90  
F77: f90

#### Floating point base flags:

C: -fast -xipo=2 -xalias\_level=std with ONESTEP=yes and feedback  
F90: -fast -xipo=2 with ONESTEP=yes and feedback

#### Floating point peak flags:

ONESTEP=yes and feedback for all benchmarks, unless otherwise noted

168.wupwise: -fast -xipo=2 -Qoption iropt -Ainline:inc=800:cp=1  
171.swim: -fast -xpad=common:3969 -xpagesize=64K -xprefetch=latx:1.6  
-Qoption iropt -Atile:skewp,-Ainline:cs=700  
(no feedback)  
172.mgrid: basepeak = yes



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## Notes/Tuning Information (Continued)

```
173.applu: -fast -xipo=2
           -Qoption cg -Qlp=1-av=192-fa=1,-Qms_pipe+prefolim=7
           -Qoption iropt -Aujam:inner=g
177.mesa:  -fast -xipo=2 -xalias_level=strong -xrestrict
           -Wc,-Qms_pipe+unoovf
178.galgel: -fast -xipo=2 -Qoption iropt -Addint:sf=9
           EXTRALIBS=-xlic_lib=sunperf
           RM_SOURCES=lapak.f90
179.art:   -fast -xipo=2 -xalias_level=std -xprefetch=latx:1.5
183.equake: -fast -xipo=2 -xalias_level=strong -xprefetch_level=2
187.facerec: -fast -xipo=2 -xprefetch=latx:1.5
188.ammp:   -fast -xarch=v9b -xipo=2 -xalias_level=std -lmopt -lm
189.lucas:  basepeak=yes
191.fma3d:  -fast -xipo=2 -stackvar -xprefetch_level=3
           -Qoption iropt -Apf:pdl=1
-x04 -dalign -xchip=ultra3 -xarch=v8plusb -fsimple=2 -xprefetch=no
301.apsi:   -fast -xipo=2
```

Feedback is done as follows, unless otherwise noted:

```
fdo_pre0: rm -rf ./feedback.profile ./SunWS_cache
PASS1:    -xprofile=collect:./feedback
PASS2:    -xprofile=use:./feedback
```

Portability:

```
178.galgel: -fixed
```

Shell Environments:

```
Stack size set to unlimited via "ulimit -s unlimited"
MPSSHEAP=512K
MPSSSTACK=512K
LD_PRELOAD=mpss.so.1
```

Kernel Parameters (/etc/system):

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

Processes were bound to CPUs using submit=pbind