



# CFP2000 Result

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Sun Microsystems  
Sun Fire V440 (1600MHz)

SPECfp\_rate2000 = 57.8

SPECfp\_rate\_base2000 = 51.8

SPEC license #: 6 Tested by: Sun Microsystems Test date: Nov-2004 Hardware Avail: Nov-2004 Software Avail: Jan-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	121	61.5	4	118	63.0
171.swim	4	386	37.3	4	171	84.2
172.mgrid	4	268	31.1	4	268	31.2
173.applu	4	212	46.0	4	176	55.2
177.mesa	4	158	41.1	4	138	47.0
178.galgel	4	153	87.8	4	126	107
179.art	4	25.1	480	4	24.3	497
183.equake	4	102	59.2	4	102	59.2
187.facerec	4	105	83.8	4	105	83.8
188.amp	4	372	27.4	4	373	27.4
189.lucas	4	235	39.5	4	235	39.5
191.fma3d	4	317	30.7	4	289	33.8
200.sixtrack	4	204	25.0	4	194	26.2
301.apsi	4	283	42.7	4	283	42.7

### Hardware

CPU: UltraSPARC IIIi  
CPU MHz: 1600  
FPU: Integrated  
CPU(s) enabled: 4 cores, 4 chips, 1 core/chip  
CPU(s) orderable: 2,4  
Parallel: No  
Primary Cache: 32KBI+64KBD on chip  
Secondary Cache: 1MB(I+D) on chip  
L3 Cache: None  
Other Cache: None  
Memory: 16GB  
Disk Subsystem: 1 x 73GB  
Other Hardware: None

### Software

Operating System: Solaris 10  
Compiler: Sun Studio 9  
File System: ufs  
System State: Multi-User

## Notes/Tuning Information

Compiler invocation:

C: cc  
CXX: 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:384 -xprefetch=latx:1.6  
-Qoption iropt -Atile:skew:b6,-Ainline:cs=700  
(no feedback)



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## Notes/Tuning Information (Continued)

```
172.mgrid: -fast -xipo=2
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 -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 -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
200.sixtrack: -xO4 -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: -e -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
```