



# CFP2000 Result

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Sun Microsystems  
Sun Fire E6900 (24 processor)

SPECfp\_rate2000 = 299

SPECfp\_rate\_base2000 = 241

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	48	536	166	48	505	176
171.swim	48	2491	69.3	48	240	719
172.mgrid	48	1434	69.9	48	1442	69.5
173.applu	48	527	222	48	503	233
177.mesa	48	172	452	48	152	514
178.galgel	48	206	785	48	151	1069
179.art	48	39.9	3630	48	38.2	3788
183.equake	48	459	158	48	460	157
187.facerec	48	251	421	48	253	418
188.amp	48	345	355	48	344	356
189.lucas	48	1412	78.8	48	1413	78.8
191.fma3d	48	1190	98.3	48	1206	97.0
200.sixtrack	48	279	219	48	246	248
301.apsi	48	612	237	48	615	236

### Hardware

CPU: UltraSPARC IV  
CPU MHz: 1350  
FPU: Integrated  
CPU(s) enabled: 48 cores, 24 chips, 2 cores/chip  
CPU(s) orderable: 4, 8, 12, 16, 20, 24 (order by number of chips)  
Parallel: No  
Primary Cache: 32KBI+64KBD per core on chip (64KBI+128KBD on chip)  
Secondary Cache: 8MB(I+D) per core off chip (16MB(I+D) off chip)  
L3 Cache: None  
Other Cache: None  
Memory: 192GB 16-way interleaved  
Disk Subsystem: Sun StorEdge S1 Disk Array (2x36GB)  
Sun StorEdge 6120 Array (14x73GB)  
Other Hardware: None

### Software

Operating System: Solaris 10  
Compiler: Sun Studio 10  
File System: ufs (default ufs logging on with Solaris 10)  
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 note

168.wupwise: -fast -xipo=2 -stackvar -Qoption iropt -Ainline:inc=800:cp=1



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## Notes/Tuning Information (Continued)

```

171.swim:      -fast -Qoption iroprt -Atile:skewp -Qoption iropt
              -Aline:cs=700 -xpad=common:3969 -xpagesize=64K
              -xprefetch=latx:1.6 -Qoption cg -Qms_pipe-fpconv
              (no feedback)
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 -xpagesize=8K
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
              -Wc,-Qms_pipe-prefst,-Qms_pipe+prefolim=11 -xpagesize=8K
183.earthquake: -fast -xipo=2 -xalias_level=strong -xprefetch_level=2
187.facerec:  -fast -xipo=2
188.ammp:     -fast -xipo=2 -xalias_level=std -lmopt -lm
189.lucas:    -fast -xipo=2 -stackvar
191.fma3d:    -fast -xipo=2
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

```

The system was configured with multiple file systems.  
The O/S was installed on one disk of the Sun StorEdge S1  
Disk Array (ufs, ufs w/logging). The benchmark was run on  
the Sun StorEdge 6120 Array, using H/W Raid 5 and ufs with  
ufs logging file system.