



# CFP2000 Result

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Sun Microsystems  
Sun Fire E4900 (12 processor)

SPECfp\_rate2000 = 167  
SPECfp\_rate\_base2000 = 138

SPEC license #: 6 Tested by: Sun Microsystems Test date: Apr-2004 Hardware Avail: May-2004 Software Avail: Apr-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	24	340	131	24	318	140
171.swim	24	1367	63.1	24	252	343
172.mgrid	24	824	60.8	24	824	60.8
173.applu	24	436	134	24	356	164
177.mesa	24	245	159	24	232	168
178.galgel	24	239	338	24	186	433
179.art	24	59.3	1220	24	54.2	1336
183.equake	24	253	143	24	250	145
187.facerec	24	219	242	24	219	241
188.amp	24	482	127	24	429	143
189.lucas	24	820	67.9	24	820	67.9
191.fma3d	24	925	63.2	24	855	68.4
200.sixtrack	24	330	92.7	24	298	103
301.apsi	24	588	123	24	590	123

### Hardware

CPU: UltraSPARC s400  
CPU MHz: 1050  
FPU: Integrated  
CPU(s) enabled: 24 cores, 12 chips, 2 cores/chip  
CPU(s) orderable: 4, 8, 12 (order by # 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: 48GB 16-way interleaved  
Disk Subsystem: Sun StorEdge S1 Disk Array (2x36GB)  
Sun StorEdge T3 Array for the Workgroup (9x36GB)  
Other Hardware: None

### Software

Operating System: Solaris 9 04/04  
Compiler: Sun ONE Studio 8  
Sun Performance Library 8  
File System: ufs with ufs logging  
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



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## Notes/Tuning Information (Continued)

```

171.swim:      -fast -xpad=common:3969 -xpagesize=64K -xprefetch=latx:1.6
               -Qoption iropt -Atile:skewp,-Ainline:cs=700
               (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
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
183.equake:   -fast -xipo=2 -xalias_level=strong -xprefetch_level=2
187.facerec:  -fast -xipo=2
188.ammpp:    -fast -xipo=2 -xalias_level=std -xpagesize=512K -lmopt -lm
189.lucas:    basepeak=yes
191.fma3d:    -fast -xipo=2 -stackvar -xprefetch_level=3
               -Qoption iropt -Apf:pdl=1
200.sixtrack:-O -dalign -xchip=ultra3 -xarch=v8plusb -fsimple=2
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=4M
MPSSSTACK=4M
LD_PRELOAD=mpss.so.1

```

Kernel Parameters (/etc/system):

```

autoup=900
tune_t_fsflushr=1

```

Processes were bound to CPUs using submit=pbind

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 T3 Array, using H/W Raid 5 and ufs with ufs logging file system.