# CFP2000 Result

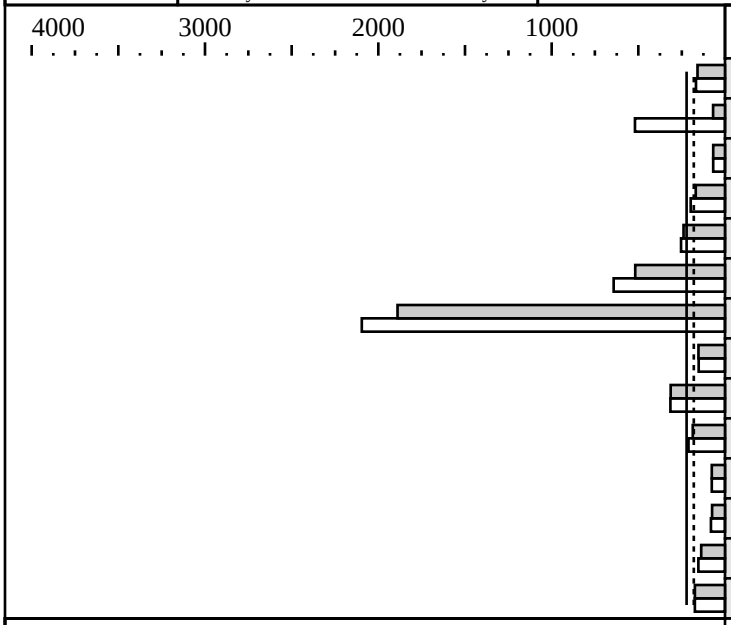


## Sun Microsystems
## Sun Fire E6900 (16 processor)

SPECfp_rate2000 = 221

SPECfp_rate_base2000 = 179

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




| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|---|---|---|---|---|---|---|
| 168.wupwise | 32 | 374 | 159 | 32 | 355 | 167 |
| 171.swim | 32 | 1675 | 68.7 | 32 | 222 | 519 |
| 172.mgrid | 32 | 983 | 68.0 | 32 | 981 | 68.1 |
| 173.applu | 32 | 462 | 169 | 32 | 394 | 198 |
| 177.mesa | 32 | 217 | 239 | 32 | 205 | 254 |
| 178.galgel | 32 | 208 | 518 | 32 | 168 | 642 |
| 179.art | 32 | 51.1 | 1890 | 32 | 46.1 | 2096 |
| 183.equake | 32 | 315 | 153 | 32 | 318 | 152 |
| 187.facerec | 32 | 225 | 313 | 32 | 224 | 315 |
| 188.ammp | 32 | 439 | 186 | 32 | 388 | 211 |
| 189.lucas | 32 | 974 | 76.3 | 32 | 974 | 76.3 |
| 191.fma3d | 32 | 1047 | 74.5 | 32 | 961 | 81.1 |
| 200.sixtrack | 32 | 298 | 137 | 32 | 266 | 154 |
| 301.apsi | 32 | 555 | 174 | 32 | 555 | 174 |

### Hardware

| | |
|---|---|
| CPU: | UltraSPARC s400 |
| CPU MHz: | 1200 |
| FPU: | Integrated |
| CPU(s) enabled: | 32 cores, 16 chips, 2 cores/chip |
| CPU(s) orderable: | 4, 8, 12, 16, 20, 24 (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: | 64GB 16-way interleaved |
| Disk Subsystem: | Sun StorEdge S1 Disk Array (2x36GB)<br>Sun StorEdge T3 Array for the Workgroup (9x36GB) |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Solaris 9 04/04 |
| Compiler: | Sun ONE Studio 8<br>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: f77

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
```

## 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.ammp:    -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.
```