



CFP2000 Result

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Sun Microsystems
Sun Fire V490 (4 processor)

SPECfp_rate2000 = 73.4

SPECfp_rate_base2000 = 64.3

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

| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|--------------|-------------|--------------|------------|--------|---------|-------|
| 168.wupwise | 8 | 231 | 64.2 | 8 | 214 | 69.3 |
| 171.swim | 8 | 640 | 45.0 | 8 | 243 | 118 |
| 172.mgrid | 8 | 404 | 41.3 | 8 | 405 | 41.3 |
| 173.applu | 8 | 374 | 52.1 | 8 | 315 | 61.9 |
| 177.mesa | 8 | 227 | 57.2 | 8 | 205 | 63.4 |
| 178.galgel | 8 | 224 | 120 | 8 | 173 | 156 |
| 179.art | 8 | 42.5 | 568 | 8 | 40.9 | 590 |
| 183.quake | 8 | 135 | 89.5 | 8 | 136 | 88.8 |
| 187.facerec | 8 | 146 | 121 | 8 | 146 | 121 |
| 188.amp | 8 | 450 | 45.4 | 8 | 454 | 45.0 |
| 189.lucas | 8 | 533 | 34.8 | 8 | 512 | 36.3 |
| 191.fma3d | 8 | 610 | 31.9 | 8 | 531 | 36.7 |
| 200.sixtrack | 8 | 308 | 33.2 | 8 | 283 | 36.1 |
| 301.apsi | 8 | 515 | 46.8 | 8 | 515 | 46.9 |

Hardware

CPU: UltraSPARC IV
CPU MHz: 1050
FPU: Integrated
CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip
CPU(s) orderable: 2,4 (order by # 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: 32GB 8-way interleaved
Disk Subsystem: 1 x 73GB
Other Hardware: None

Software

Operating System: Solaris 9 4/04 with patch 116561-03, 112233-12
Compiler: Sun Studio 9
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
171.swim: -fast -xpad=common:3969 -xpagesize=64K -xprefetch=latx:1.6
-Qoption iropt -Atile:skewp,-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
          -Wc,-Qms_pipe-prefst,-Qms_pipe+prefolim=11
183.quake: -fast -xipo=2 -xalias_level=strong -xprefetch_level=2
187.facerec: basepeak=yes
188.ammp: -fast -xipo=2 -xalias_level=std -xpagesize=512K -lmopt -lm
189.lucas: -fast -xipo=2 -xprefetch_level=3 -Qoption iropt
           -Apf:pdl=1 -Qoption f90comp -array_pad_rows,1977
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

```

Processes were bound to CPUs using submit=pbind