CFP2000 Result

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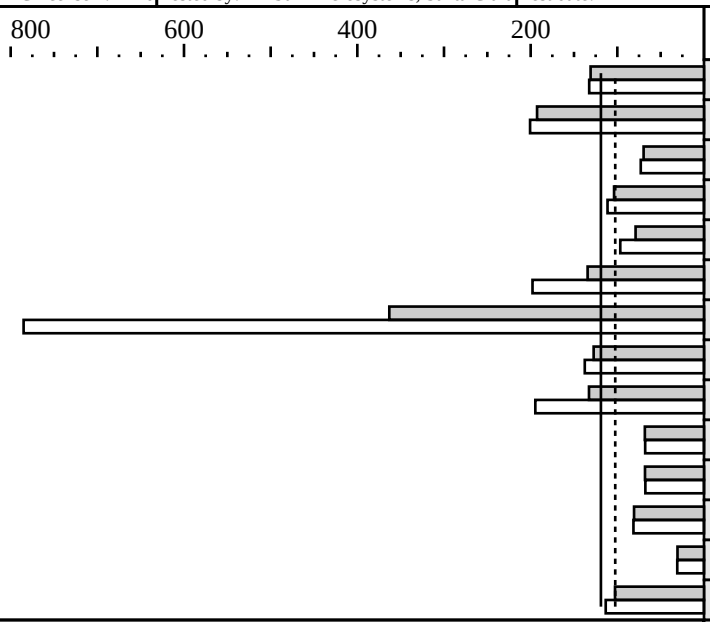
Sun Microsystems
Sun Fire X4200 M2

SPECfp_rate2000 = 119

SPECfp_rate_base2000 = 102

SPEC license #: 6 | Tested by: Sun Microsystems, Santa Clara | Test date: Oct-2006 | Hardware Avail: Oct-2006 | Software Avail: Jul-2006



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	56.7	131	4	56.0	132
171.swim	4	74.7	193	4	71.7	201
172.mgrid	4	120	69.7	4	114	73.0
173.applu	4	93.9	104	4	87.5	111
177.mesa	4	82.3	79.0	4	67.2	96.6
178.galgel	4	100	134	4	68.0	198
179.art	4	33.2	363	4	15.4	785
183.equake	4	47.4	127	4	43.8	138
187.facerec	4	66.4	133	4	45.3	195
188.ammp	4	150	68.3	4	150	67.9
189.lucas	4	136	68.1	4	137	67.7
191.fma3d	4	121	80.7	4	120	81.4
200.sixtrack	4	167	30.6	4	165	30.8
301.apsi	4	117	103	4	106	113

Hardware

CPU:	AMD Opteron (TM) 2220 SE
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip
CPU(s) orderable:	1,2 (order by # of chips)
Parallel:	No
Primary Cache:	64KBI + 64KBD (on chip) per core
Secondary Cache:	1024KB (I+D) (on chip) per core
L3 Cache:	N/A
Other Cache:	N/A
Memory:	16GB (8x2GB, DDR2-667 CL5 ECC Reg)
Disk Subsystem:	SAS,72GB,10K RPM
Other Hardware:	None

Software

Operating System:	Solaris 10 6/06
Compiler:	Sun Studio 11 with Patches
File System:	ufs
System State:	Multi-user

Notes/Tuning Information

```
Compiler invocation:
  C: cc
  F90: f90
  F77: f90

FDO:  PASS1= -xprofile=collect:./feedback PASS2= -xprofile=use:./feedback
      fdo_pre0:  rm -rf ./feedback.profile

Floating point base flags:
  F90:   -fast -xipo=2 -xarch=amd64 -xprefetch_level=3 ONESTEP=yes
    C:   -fast -xipo=2 -xalias_level=std -xpagesize=2m ONESTEP=yes

Floating point peak flags:
 ONESTEP=yes for all benchmarks

 168.wupwise:   -fast -xautopar -xpad=common:3969 -xipo=2 -xarch=amd64 -xprefetch_level=3  -xpagesize_heap=2m
 171.swim:      -fast -xpad=common:3969 -xipo=2 -xvector=simd -xprefetch_level=3 -Qoption iropt
```

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Notes/Tuning Information (Continued)

```
                -Atile:skewp,-Ainline:cs=700 -xarch=amd64 -Qoption ube_ipa -inl_alt
                -xpagesize_stack=2m
 172.mgrid:     -fast -xautopar -stackvar -xpad=common:900 -xipo=2 -xarch=amd64 -xprefetch_level=3
                -xvector -xpagesize=2m -Qoption ld -M,/usr/lib/ld/map.bssalign
 173.applu:     -fast -xautopar -unroll=5 -stackvar -xO4 -xipo=2 -xprefetch_level=3 -xarch=amd64a
                -qoption iropt -Rloop_dist -xpagesize_heap=2m
 177.mesa:      -fast -xautopar -xO4 -xipo=2 -Wd,-iropt-prof -xarch=amd64 -xalias_level=strong -xpagesize=2m +FDO
 178.galgel:    -fast -xcache=64/32/4:1024/64/4 -xipo=2 -xpagesize_heap=2m -xvector=simd -xarch=amd64  -xprefetch_level=3
                RM_SOURCES=lapak.f90
                EXTRALIBS=-xlic_lib=sunperf
 179.art:       -fast -xipo=2 -xalias_level=strong -xprefetch -Wd,-iropt-prof -xpagesize=2m +FDO
 183.equake:    -fast -Wd,-iropt-prof -xipo=2 -xprefetch -xalias_level=strong -xpagesize=2m -lmopt -lm +FDO
 187.facerec:   -fast -xO4 -xipo=2 -xprefetch_level=3 -xpagesize=2m
                RM_SOURCES=cfftb.f90 cffti.f90 cfftf.f90
                EXTRALIBS=-xlic_lib=sunperf
 188.ammp:      -fast -xcache=64/32/4:1024/64/4 -xO4 -xipo=2 -xarch=amd64a -xalias_level=std -xpagesize_heap=2m -lmopt -lm
 189.lucas:     -fast -Qoption ube_ipa -inl_alt -xipo=2 -xarch=amd64 -xprefetch_level=3
 191.fma3d:     -fast -xcache=64/32/4:1024/64/4 -unroll=5 -fsimple=1 -xipo=2
                -xprefetch_level=3 -xarch=amd64 -xpagesize_heap=2m +FDO
 200.sixtrack:  -fast -xipo=2 -O -xprefetch_level=3 -xarch=amd64
                -xpagesize_heap=2m -Qoption ld -M,/usr/lib/ld/map.bssalign +FDO
 301.apsi:      -fast -xO4 -xipo=2 -xprefetch_level=3 -xarch=amd64a -xpagesize=2m

Portability:
 178.galgel:  -fixed

Shell Environments:
  Stack size set to unlimited via "ulimit -s unlimited"

The following patches were applied to Sun Studio 11 compiler:
120759-07 : x86/x64
121016-03 : x86 C
121020-03 : x86 F90
121018-03 : x86 C++

This result was measured on the Sun Fire X4100 M2
Sun Fire X4100 M2 and Sun Fire X4200 M2 are electronically equivalent.

Processes were bound to CPUs using submit=pbind
Default BIOS setting was used
```