



# CFP2000 Result

Copyright ©1999-2005, Standard Performance Evaluation Corporation

Sun Microsystems  
Sun Fire X4100 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.quake	4	47.4	127	4	43.8	138
187.facerec	4	66.4	133	4	45.3	195
188.amp	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



# CFP2000 Result

Copyright ©1999-2005, Standard Performance Evaluation Corporation

Sun Microsystems  
Sun Fire X4100 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

## 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 -x04 -xipo=2 -xprefetch_level=3 -xarch=amd64a
-qoption iropt -Rloop_dist -xpagesize_heap=2m
177.mesa: -fast -xautopar -x04 -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.quake: -fast -Wd,-iropt-prof -xipo=2 -xprefetch -xalias_level=strong -xpagesize=2m -lmopt -lm +FDO
187.facerec: -fast -x04 -xipo=2 -xprefetch_level=3 -xpagesize=2m
RM_SOURCES=cfftb.f90 cffti.f90 cfftf.f90
EXTRALIBS=-xlic_lib=sunperf
188.amp: -fast -xcache=64/32/4:1024/64/4 -x04 -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 -x04 -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. In addition, Sun has submitted the same result for the Sun Fire X4200 M2, which is electronically equivalent to the Sun Fire X4100 M2.

Processes were bound to CPUs using submit=pbind

Default BIOS setting was used