



CFP2000 Result

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Sun Microsystems
Sun Fire X4600 M2

SPECfp_rate2000 = 214

SPECfp_rate_base2000 = 184

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	8	63.4	234	8	60.9	244
171.swim	8	84.3	341	8	81.5	353
172.mgrid	8	138	121	8	131	127
173.applu	8	103	189	8	97.2	201
177.mesa	8	83.9	155	8	69.3	188
178.galgel	8	116	233	8	77.8	346
179.art	8	43.9	550	8	18.5	1304
183.equake	8	59.9	202	8	55.9	216
187.facerec	8	77.3	228	8	54.4	324
188.amp	8	159	128	8	177	116
189.lucas	8	162	114	8	163	114
191.fma3d	8	135	144	8	133	147
200.sixtrack	8	137	74.4	8	133	76.5
301.apsi	8	123	196	8	112	216

Hardware

CPU: AMD Opteron 8220SE
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip
 CPU(s) orderable: 4,8 chips
 Parallel: No
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core
 L3 Cache: N/A
 Other Cache: N/A
 Memory: 16 GB (16x1GB, DDR2-667 CL5 ECC REG)
 Disk Subsystem: SAS, 72 GB , 7200 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)

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-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.earthquake: -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++

Processes were bound to CPUs using submit=pbind

Default BIOS setting was used