



# CFP2000 Result

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**SGI**  
SGI Origin 3800 64X 600MHz R14k

SPECfp\_rate2000 = 327  
SPECfp\_rate\_base2000 = 305

SPEC license #: 4 | Tested by: SGI | Test date: Feb-2002 | Hardware Avail: Jan-2002 | Software Avail: Nov-2001

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	64	407	292	64	358	332
171.swim	64	1012	227	64	990	232
172.mgrid	64	681	196	64	671	199
173.applu	64	668	234	64	609	256
177.mesa	64	333	312	64	300	347
178.galgel	64	211	1022	64	185	1165
179.art	64	207	931	64	206	937
183.equake	64	485	199	64	478	202
187.facerec	64	343	411	64	342	413
188.amp	64	385	424	64	386	423
189.lucas	64	707	210	64	698	213
191.fma3d	64	878	177	64	786	198
200.sixtrack	64	403	203	64	398	205
301.apsi	64	767	252	64	545	354

**Hardware**

CPU: R14000  
CPU MHz: 600  
FPU: Integrated  
CPU(s) enabled: 64 cores, 64 chips, 1 core/chip  
CPU(s) orderable: 4-512  
Parallel: No  
Primary Cache: 32KBI + 32KBD on chip  
Secondary Cache: 8MB(I+D) off chip  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 64 GB  
Disk Subsystem: 1 x 18 GB FC, 4 x 18 GB FC (striped)  
Other Hardware: None

**Software**

Operating System: IRIX 6.5.14m  
Compiler: MIPSpro 7.3.1.3m C, Fortran90  
SCSL 1.4 Math Library  
File System: xfs  
System State: Single-user

## Notes/Tuning Information

Baseline optimization flags (for C benchmarks):  
PASS1 : -Ofast=ip35 -fb\_create /tmp/SPEC2000/FBDIR\_base/\$(EXEBASE)  
PASS2 : -Ofast=ip35 -fb\_opt /tmp/SPEC2000/FBDIR\_base/\$(EXEBASE)  
Baseline optimization flags (for Fortran benchmarks): -Ofast=ip35 -LNO:fusion=2  
Portability Flags:  
178.galgel: -fixedform  
Peak optimization flags:  
note: all occurrences of (FEEDBACK) below means compiled with a two-step process:  
PASS1 = -fb\_create /tmp/SPEC2000/FBDIR\_peak/\$(EXEBASE)  
PASS2 = -fb\_opt /tmp/SPEC2000/FBDIR\_peak/\$(EXEBASE)  
168.wupwise: -Ofast=ip35 -IPA:space=1000:linear=on:plimit=10000:callee\_limit=5000  
-INLINE:aggressive=on -OPT:Olimit=0 -LNO:fusion=2:prefetch Ahead=5  
171.swim: -Ofast=ip35 -CG:ld\_latency=10  
172.mgrid: -Ofast=ip35 -LNO:fusion=2  
173.applu: -Ofast=ip35 -LNO:ou\_max=5:ou\_prod\_max=10:prefetch=0:fusion=2 -CG:ld\_latency=3  
177.mesa: -Ofast=ip35 -OPT:goto=off -LNO:opt=0 -CG:ld\_latency=6 (FEEDBACK)  
178.galgel: -Ofast=ip35 -LNO:ou\_max=7 -CG:ld\_latency=3 -lscs (FEEDBACK)



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## Notes/Tuning Information (Continued)

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RM_SOURCES = lapak.f90
179.art: -Ofast=ip35 -LNO:prefetch=0 -IPA:min_hot=15 -CG:ld_latency=3 (FEEDBACK)
183.equake: -Ofast=ip35 -LNO:prefetch=0 -TENV:X=4 -CG:ld_latency=7 -IPA:space=500 (FEEDBACK)
187.facerec: -Ofast=ip35 -LNO:fusion=2
188.ammp: -Ofast=ip35 -OPT:goto=off -IPA:space=500:plimit=900 -CG:ld_latency=7 (FEEDBACK)
189.lucas: -Ofast=ip35 -LNO:fusion=2:blocking=off -CG:ld_latency=4 -IPA:min_hot=8 (FEEDBACK)
191.fma3d: -Ofast=ip35 -bigp_off -LNO:prefetch=0 -CG:ld_latency=2
      -OPT:goto=off:unroll_size=160:unroll_times_max=4 (FEEDBACK)
200.sixtrack:= -Ofast=ip35 -IPA:maxdepth=2 -LNO:prefetch=0 (FEEDBACK)
301.apsi: -Ofast=ip35 -TENV:X=4 -LNO:prefetch=0:blocking=off -IPA:linear=on:use_intrinsic
The following O/S parameters were set:
  setenv PAGESIZE_DATA 4096 ; setenv PAGESIZE_TEXT 4096 ; setenv PAGESIZE_STACK 4096
  systune -i ; percent_totalmem_4m_pages = 40 ; percent_totalmem_1m_pages = 7
  systune -i ; percent_totalmem_256k_pages = 7 ; percent_totalmem_64k_pages = 7
  systune -i ; r12k_bdiag = 0x4000000
  limit stacksize 500000
The following is done before building each benchmark that requires (FEEDBACK):
rm -rf /tmp/SPEC2000/FBDIR_peak/$baseexe ; mkdir -p /tmp/SPEC2000/FBDIR_peak/$baseexe
Jobs are submitted using dplace. Contents of the placement file submit.pf:
memories 1 in topology physical near $NODE
threads 1
run thread 0 on memory 0 using cpu $CPU
The first disk mentioned in the Disk Subsystem is the system disk. A striped
XFS filesystem was created using the rest of the disks and the benchmark was
run on this.

```