



# CFP2000 Result

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**SGI**  
**SGI Origin 3200 1X 500MHz R14k**

SPECfp2000 = **463**  
SPECfp\_base2000 = **436**

SPEC license #: 4 Tested by: SGI Test date: Apr-2001 Hardware Avail: Jul-2001 Software Avail: Mar-2001

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	417	383	356	450	
171.swim	3100	629	493	624	496	
172.mgrid	1800	530	339	531	339	
173.applu	2100	610	344	569	369	
177.mesa	1400	399	351	361	387	
178.galgel	2900	249	1167	221	1309	
179.art	2600	215	1210	216	1206	
183.earthquake	1300	412	316	403	323	
187.facerec	1900	344	553	344	553	
188.ammmp	2200	458	480	456	482	
189.lucas	2000	496	403	495	404	
191.fma3d	2100	761	276	658	319	
200.sixtrack	1100	446	247	439	250	
301.apsi	2600	733	355	588	442	

### Hardware

CPU: R14000  
CPU MHz: 500  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
CPU(s) orderable: 2-8  
Parallel: No  
Primary Cache: 32KBI + 32KBD on chip  
Secondary Cache: 8MB(I+D) off chip  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 1 GB  
Disk Subsystem: 1 x 18 GB FC, 24 x 18 GB FC (striped)  
Other Hardware: None

### Software

Operating System: IRIX 6.5.11f  
Compiler: MIPSpro 7.3.1.2m C, Fortran90  
SCSL 1.3 Math Library  
File System: xfs  
System State: Single-user

## Notes/Tuning Information

Baseline optimization flags (for C benchmarks):

PASS1 : -Ofast=ip27 -IPA:use\_intrinsic -fb\_create /tmp/SPEC2000/FBDIR\_base/\$(EXEBASE)

PASS2 : -Ofast=ip27 -IPA:use\_intrinsic -fb\_opt /tmp/SPEC2000/FBDIR\_base/\$(EXEBASE)

Baseline optimization flags (for Fortran benchmarks): -Ofast=ip27 -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=ip27 -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=ip27 -LNO:cs2=8m -CG:ld\_latency=10

172.mgrid: -Ofast=ip27 -LNO:fusion=2

173.applu: -Ofast=ip27 -LNO:ou\_max=5:ou\_prod\_max=10:prefetch=0:fusion=2 -CG:ld\_latency=3

177.mesa: -Ofast=ip27 -OPT:goto=off -LNO:opt=0:cs2=8m -CG:ld\_latency=6 (FEEDBACK)

178.galgel: -Ofast=ip27 -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=ip27 -LNO:prefetch=0 -IPA:min_hot=15 -CG:ld_latency=3 (FEEDBACK)
183.quake: -Ofast=ip27 -LNO:prefetch=0 -TENV:X=4 -CG:ld_latency=7 -IPA:space=500 (FEEDBACK)
187.facerec: -Ofast=ip27 -LNO:fusion=2
188.ammp: -Ofast=ip27 -OPT:goto=off -IPA:space=500:plimit=900 -CG:ld_latency=7 (FEEDBACK)
189.lucas: -Ofast=ip27 -LNO:fusion=2:blocking=off -CG:ld_latency=4 -IPA:min_hot=8 (FEEDBACK)
191.fma3d: -Ofast=ip27 -bigp_off -LNO:prefetch=0 -CG:ld_latency=2
.
  -OPT:goto=off:unroll_size=160:unroll_times_max=4 (FEEDBACK)
200.sixtrack:= -Ofast=ip27 -IPA:maxdepth=2 -LNO:prefetch=0 (FEEDBACK)
301.apsi: -Ofast=ip27 -TENV:X=4 -LNO:prefetch=0:blocking=off -IPA:linear=on:use_intrinsic
  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

```