



# CINT2000 Result

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**SGI**  
**SGI Origin 3200 400MHz R12k**

**SPECint2000 = 353**  
**SPECint\_base2000 = 328**

SPEC license #: 4 Tested by: SGI Test date: Sep-2000 Hardware Avail: Sep-2000 Software Avail: Sep-2000

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
164.gzip	1400	611	229	590	237	
175.vpr	1400	354	395	345	406	
176.gcc	1100	346	318	346	317	
181.mcf	1800	279	646	261	689	
186.crafty	1000	300	334	301	332	
197.parser	1800	635	284	598	301	
252.eon	1300	363	359	366	355	
253.perlbmk	1800	731	246	729	247	
254.gap	1100	499	220	495	222	
255.vortex	1900	638	298	349	545	
256.bzip2	1500	446	336	402	373	
300.twolf	3000	667	450	667	449	

### Hardware

CPU: R12000  
CPU MHz: 400  
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: 1GB  
Disk Subsystem: 1 x 18 GB FC, 2 x 18 GB FC (striped)  
Other Hardware: None

### Software

Operating System: IRIX 6.5.9m  
Compiler: MIPSpro 7.3.1.1m C, C++, Fortran90  
SCSL 1.2 Math Library  
File System: xfs  
System State: Single-user

## Notes/Tuning Information

Baseline optimization flags (C and C++ use same flags):

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)

Portability Flags:

176.gcc: -DUSG -Dalloca=\_\_builtin\_alloca -DMIPS -DHOST\_WORDS\_BIG\_ENDIAN

186.crafty: -DSGI

253.perlbmk: -DSPEC\_CPU2000\_SGI -DI\_FCNTL

254.gap: -DSYS\_IS\_USG -DSYS\_HAS\_TIME\_PROTO -DSYS\_HAS\_SIGNAL\_PROTO -DSYS\_HAS\_IOCTL\_PROTO

300.twolf: -DHAVE\_SIGNED\_CHAR

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)

164.gzip: -Ofast=ip27 -IPA:space=500:plimit=500 -lmalloc (FEEDBACK)

175.vpr: -Ofast=ip27 -IPA:space=300:plimit=10000:callee\_limit=5000:linear=on -LNO:prefetch Ahead=2

. -INLINE:aggressive=on -OPT:Olimit=0:alias=disjoint:alias=restrict -lmalloc (FEEDBACK)

181.mcf: -Ofast=ip27 -IPA:min\_hot=14 -lmalloc (FEEDBACK)

176.gcc: -Ofast=ip27 (FEEDBACK)

186.crafty: -Ofast=ip27 -LNO:prefetch=0 -OPT:goto=off -lmalloc (FEEDBACK)

197.parser: -Ofast=ip27 -IPA:min\_hot=14 (FEEDBACK)

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## Notes/Tuning Information (Continued)

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252.eon: -Ofast=ip27 -LNO:prefetch=0 -LANG:exceptions=off -lmalloc (FEEDBACK)
253.perlbnk: -Ofast=ip27 -IPA:use_intrinsic -Wl,-x (FEEDBACK)
254.gap: -Ofast=ip27 -IPA:use_intrinsic -OPT:unroll_analysis=off:unroll_size=0:unroll_times_max=4
. -OPT:alias=restrict:alias=disjoint -IPA:min_hot=7 -lmalloc (FEEDBACK)
255.vortex: -Ofast=ip27 -IPA:use_intrinsic -OPT:unroll_analysis=off:unroll_size=0:unroll_times_max=4 -LNO:opt=0
. -CG:ld_latency=5 -IPA:min_hot=14 -TENV:X=4 -IPA:space=500:plimit=3600 -OPT:goto=off (FEEDBACK)
256.bzip2: -Ofast=ip27 -IPA:min_hot=5:space=500:plimit=2900 -INLINE:aggressive=on (FEEDBACK)
300.twolf: -Ofast=ip27 -IPA:use_intrinsic (FEEDBACK)
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
limit stacksize 500000
The following is done before building each benchmark that requires (FEEDBACK):
rm -rf /tmp/SPEC2000 ; mkdir /tmp/SPEC2000 ; cd /tmp/SPEC2000 ; mkdir FBDIR_base ; mkdir FBDIR_peak

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