



# CINT2000 Result

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## SGI Origin200 360MHz R12k

SPECint2000 = 298  
SPECint\_base2000 = 277

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	100	200	300	400	500
164.gzip	1400	687	204	664	211					
175.vpr	1400	438	319	422	332					
176.gcc	1100	397	277	397	277					
181.mcf	1800	459	392	445	405					
186.crafty	1000	329	304	333	300					
197.parser	1800	743	242	686	262					
252.eon	1300	399	326	404	322					
253.perlbnk	1800	814	221	813	221					
254.gap	1100	601	183	592	186					
255.vortex	1900	728	261	407	467					
256.bzip2	1500	525	286	476	315					
300.twolf	3000	745	402	742	405					

### Hardware

CPU: R12000  
 CPU MHz: 360  
 FPU: Integrated  
 CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
 CPU(s) orderable: 1-4  
 Parallel: No  
 Primary Cache: 32KBI + 32KBD on chip  
 Secondary Cache: 4MB(I+D) off chip  
 L3 Cache: N/A  
 Other Cache: N/A  
 Memory: 512MB  
 Disk Subsystem: 1 x 9 GB SCSI  
 Other Hardware: None

### Software

Operating System: IRIX 6.5.8f  
 Compiler: MIPSpro 7.3.1.1m C, C++, Fortran90  
 SCSSL 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.perlbnk: -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)

```
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
systemd -i ; percent_totalmem_4m_pages = 50 ; nlpages_4m = 128
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
```