



# CINT2000 Result

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**SGI**  
**SGI 2100 4X 350MHz R12k**

**SPECint\_rate2000 = 12.8**  
**SPECint\_rate\_base2000 = 12.0**

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.zip	4	719	9.04	4	695	9.34
175.vpr	4	463	14.0	4	451	14.4
176.gcc	4	412	12.4	4	412	12.4
181.mcf	4	667	12.5	4	667	12.5
186.crafty	4	348	13.3	4	351	13.2
197.parser	4	758	11.0	4	717	11.7
252.eon	4	418	14.4	4	418	14.4
253.perlbnk	4	848	9.85	4	855	9.77
254.gap	4	640	7.98	4	629	8.12
255.vortex	4	755	11.7	4	429	20.6
256.bzip2	4	549	12.7	4	495	14.0
300.twolf	4	784	17.8	4	777	17.9

### Hardware

CPU: R12000  
 CPU MHz: 350  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 4 chips, 1 core/chip  
 CPU(s) orderable: 2, 4, 6, 8  
 Parallel: No  
 Primary Cache: 32KBI + 32KBD on chip  
 Secondary Cache: 4MB(I+D) off chip  
 L3 Cache: N/A  
 Other Cache: N/A  
 Memory: 2048MB  
 Disk Subsystem: 1 x 18 GB SCSI, 2 x 18 GB (striped)  
 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.zip: -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
```