



# CINT2000 Result

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**SGI**  
**SGI Origin 3200 8X 400MHz R12k**

**SPECint\_rate2000 = 32.6**  
**SPECint\_rate\_base2000 = 30.3**

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.zip	8	613	21.2	8	590	22.0
175.vpr	8	353	36.8	8	343	37.8
176.gcc	8	344	29.6	8	345	29.6
181.mcf	8	293	57.1	8	275	60.8
186.crafty	8	300	31.0	8	301	30.8
197.parser	8	634	26.3	8	597	28.0
252.eon	8	360	33.5	8	363	33.2
253.perlbnk	8	733	22.8	8	727	23.0
254.gap	8	507	20.1	8	506	20.2
255.vortex	8	636	27.7	8	349	50.5
256.bzip2	8	447	31.1	8	402	34.6
300.twolf	8	667	41.8	8	666	41.8

Hardware	Software
CPU: R12000	Operating System: IRIX 6.5.9m
CPU MHz: 400	Compiler: MIPSpro 7.3.1.1m C, C++, Fortran90
FPU: Integrated	SCSL 1.2 Math Library
CPU(s) enabled: 8 cores, 8 chips, 1 core/chip	File System: xfs
CPU(s) orderable: 2-8	System State: Single-user
Parallel: No	
Primary Cache: 32KBI + 32KBD on chip	
Secondary Cache: 8MB(I+D) off chip	
L3 Cache: N/A	
Other Cache: N/A	
Memory: 8GB	
Disk Subsystem: 1 x 18 GB FC, 2 x 18 GB FC (striped)	
Other Hardware: None	

## 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)

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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

```