



CINT2000 Result

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SGI
SGI 2100 1X 350MHz R12k

SPECint2000 = 289
SPECint_base2000 = 280

SPEC license #: 4 Tested by: SGI Test date: Jan-2001 Hardware Avail: Jun-2000 Software Avail: Mar-2001

| Benchmark | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio | 100 200 300 400 500 | | | | |
|-------------|----------------|--------------|------------|---------|-------|---------------------|--|--|--|--|
| 164.gzip | 1400 | 713 | 196 | 687 | 204 | ..... |  |  |  |  |
| 175.vpr | 1400 | 444 | 316 | 426 | 329 | ..... |  |  |  |  |
| 176.gcc | 1100 | 400 | 275 | 405 | 272 | ..... |  |  |  |  |
| 181.mcf | 1800 | 440 | 409 | 439 | 410 | ..... |  |  |  |  |
| 186.crafty | 1000 | 344 | 290 | 350 | 286 | ..... |  |  |  |  |
| 197.parser | 1800 | 760 | 237 | 712 | 253 | ..... |  |  |  |  |
| 252.eon | 1300 | 423 | 308 | 404 | 322 | ..... |  |  |  |  |
| 253.perlbnk | 1800 | 855 | 211 | 852 | 211 | ..... |  |  |  |  |
| 254.gap | 1100 | 606 | 182 | 613 | 180 | ..... |  |  |  |  |
| 255.vortex | 1900 | 485 | 391 | 418 | 455 | ..... |  |  |  |  |
| 256.bzip2 | 1500 | 545 | 275 | 493 | 304 | ..... |  |  |  |  |
| 300.twolf | 3000 | 768 | 391 | 790 | 380 | ..... |  |  |  |  |

Hardware

CPU: R12000
CPU MHz: 350
FPU: Integrated
CPU(s) enabled: 1 core, 1 chip, 1 core/chip
CPU(s) orderable: 1-8
Parallel: No
Primary Cache: 32KBI + 32KBD on chip
Secondary Cache: 4MB(I+D) off chip
L3 Cache: N/A
Other Cache: N/A
Memory: 1 GB
Disk Subsystem: 1 x 18 GB FC, 2 x 18 GB FC (striped)
Other Hardware: None

Software

Operating System: IRIX 6.5.10f
Compiler: MIPSpro 7.3.1.2m C, C++, Fortran90
SCSL 1.3 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
252.eon: -lm
253.perlbnk: -DSPEC_CPU2000_SGI -DI_FCNTL
254.gap: -DSYS_IS_USG -DSYS_HAS_TIME_PROTO -DSYS_HAS_SIGNAL_PROTO -DSYS_HAS_IOCTL_PROTO
-DSYS_HAS_ANSI -DSYS_HAS_CALLOC_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)



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Notes/Tuning Information (Continued)

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186.crafty: -Ofast=ip27 -LNO:prefetch=0 -OPT:goto=off -lmalloc (FEEDBACK)
197.parser: -Ofast=ip27 -IPA:min_hot=14 (FEEDBACK)
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

```