



CINT2000 Result

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SGI
SGI Origin 3800 256X 500MHz R14k

SPECint_rate2000 = 1189
SPECint_rate_base2000 = 1150

SPEC license #: 4 Tested by: SGI Test date: Nov-2001 Hardware Avail: Jul-2001 Software Avail: Aug-2001

2000 1500 1000 500	Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
	164.gzip	256	534	778	256	511	814
	175.vpr	256	307	1355	256	296	1404
	176.gcc	256	305	1070	256	313	1043
	181.mcf	256	294	1817	256	294	1817
	186.crafty	256	261	1137	256	260	1140
	197.parser	256	543	985	256	520	1028
	252.eon	256	314	1229	256	291	1328
	253.perlbnk	256	607	881	256	608	878
	254.gap	256	440	742	256	442	739
	255.vortex	256	344	1642	256	299	1887
	256.bzip2	256	374	1191	256	343	1300
	300.twolf	256	600	1485	256	600	1485

Hardware

CPU: R14000
CPU MHz: 500
FPU: Integrated
CPU(s) enabled: 256 cores, 256 chips, 1 core/chip
CPU(s) orderable: 4-512
Parallel: No
Primary Cache: 32KBI + 32KBD on chip
Secondary Cache: 8MB(I+D) off chip
L3 Cache: N/A
Other Cache: N/A
Memory: 256 GB
Disk Subsystem: 1 x 18 GB FC, 2 x 18 GB FC (striped)
Other Hardware: None

Software

Operating System: IRIX 6.5.13m
Compiler: MIPSpro 7.3.1.2m C, C++
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: -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 -CG:ld_latency=10 -lmalloc (FEEDBACK)
181.mcf: basepeak=yes



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Notes/Tuning Information (Continued)

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176.gcc: -Ofast=ip27 -CG:ld_latency=4 (FEEDBACK)
186.crafty: -Ofast=ip27 -LNO:prefetch=0 -OPT:goto=off -CG:ld_latency=4 -lmalloc (FEEDBACK)
197.parser: -Ofast=ip27 -IPA:min_hot=14 (FEEDBACK)
252.eon: -Ofast=ip27 -LNO:prefetch=0 -LANG:exceptions=off -CG:ld_latency=4 -lmalloc -lm
      (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 -CG:ld_latency=8 -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: basepeak=yes

```

The following O/S parameters were set:

```

setenv PAGESIZE_DATA 4096 ; setenv PAGESIZE_TEXT 4096 ; setenv PAGESIZE_STACK 4096
system -i ; percent_totalmem_4m_pages = 40 ; percent_totalmem_1m_pages = 7
system -i ; percent_totalmem_256k_pages = 7 ; percent_totalmem_64k_pages = 7
system -i ; r12k_bdiag = 0x4000000 ;
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
The first disk mentioned in the Disk Subsystem is the system disk. A striped
XFS filesystem was created using the rest of the disks and the benchmark was
run on this.

```