



CINT2000 Result

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SGI
SGI Origin 300 4X 600MHz R14000A

SPECint_rate2000 = 21.6
SPECint_rate_base2000 = 20.9

SPEC license #: 4 | Tested by: SGI | Test date: Apr-2002 | Hardware Avail: May-2002 | Software Avail: Apr-2002

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	4	438	14.8	4	423	15.4
175.vpr	4	276	23.5	4	260	25.0
176.gcc	4	260	19.7	4	261	19.6
181.mcf	4	340	24.6	4	340	24.6
186.crafty	4	204	22.8	4	209	22.2
197.parser	4	448	18.7	4	425	19.6
252.eon	4	261	23.1	4	239	25.2
253.perlbnk	4	496	16.9	4	497	16.8
254.gap	4	380	13.4	4	371	13.8
255.vortex	4	292	30.2	4	260	33.9
256.bzip2	4	325	21.4	4	307	22.7
300.twolf	4	474	29.4	4	474	29.4

Hardware

CPU: R14000A
 CPU MHz: 600
 FPU: Integrated
 CPU(s) enabled: 4 cores, 4 chips, 1 core/chip
 CPU(s) orderable: 2-32
 Parallel: No
 Primary Cache: 32KBI + 32KBD on chip
 Secondary Cache: 4MB(I+D) off chip
 L3 Cache: N/A
 Other Cache: N/A
 Memory: 4 GB
 Disk Subsystem: 1 x 18 GB FC
 Other Hardware: None

Software

Operating System: IRIX 6.5.16m
 Compiler: MIPSpro 7.3.1.3m C, C++
 SCSSL 1.4 Math Library
 File System: xfs
 System State: Single-user

Notes/Tuning Information

Baseline optimization flags (C and C++ use same flags):

PASS1 : -Ofast=ip35 -IPA:use_intrinsic -fb_create /tmp/SPEC2000/FBDIR/base/\$(EXEBASE)
 PASS2 : -Ofast=ip35 -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
 253.perlbnk: -DSPEC_CPU2000_SGI -DI_FCNTL
 252.eon: -lm
 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=ip35 -IPA:space=500:plimit=500 -lmalloc (FEEDBACK)
 175.vpr: -Ofast=ip35 -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=ip35 -CG:ld_latency=4 (FEEDBACK)
186.crafty: -Ofast=ip35 -LNO:prefetch=0 -OPT:goto=off -CG:ld_latency=4 -lmalloc (FEEDBACK)
197.parser: -Ofast=ip35 -IPA:min_hot=14 (FEEDBACK)
252.eon: -Ofast=ip35 -LNO:prefetch=0 -LANG:exceptions=off -CG:ld_latency=4 -lmalloc -lm
. (FEEDBACK)
253.perlbnk: -Ofast=ip35 -IPA:use_intrinsic -Wl,-x (FEEDBACK)
254.gap: -Ofast=ip35 -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=ip35 -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=ip35 -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/FBDIR_peak/$baseexe ; mkdir -p /tmp/SPEC2000/FBDIR_peak/$baseexe
Jobs are submitted using dplace. Contents of the placement file submit.pf:
memories 1 in topology physical near $NODE
threads 1
run thread 0 on memory 0 using cpu $CPU

```