



CINT2000 Result

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SGI
SGI Origin 3800 256X 600MHz R14000A

SPECint_rate2000 = 1402
SPECint_rate_base2000 = 1344

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

				Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
4000	3000	2000	1000	164.gzip	256	457	909	256	438	948
				175.vpr	256	256	1623	256	242	1716
				176.gcc	256	263	1241	256	258	1264
				181.mcf	256	269	1985	256	269	1985
				186.crafty	256	241	1234	256	215	1383
				197.parser	256	462	1158	256	432	1237
				252.eon	256	268	1442	256	249	1551
				253.perlbnk	256	506	1057	256	505	1059
				254.gap	256	396	825	256	388	843
				255.vortex	256	284	1986	256	264	2133
				256.bzip2	256	311	1433	256	295	1508
				300.twolf	256	479	1862	256	479	1862

Hardware

CPU: R14000A
 CPU MHz: 600
 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, 10 x 18 GB FC (striped)
 Other Hardware: None

Software

Operating System: IRIX 6.5.17f
 Compiler: MIPSpro 7.3.1.3m C, C++
 SCSS 1.4.0.1 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)

```

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
systune -i ; percent_totalmem_4m_pages = 40 ; percent_totalmem_1m_pages = 7
systune -i ; percent_totalmem_256k_pages = 7 ; percent_totalmem_64k_pages = 7
systune -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
```

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.