CINT2000 Result

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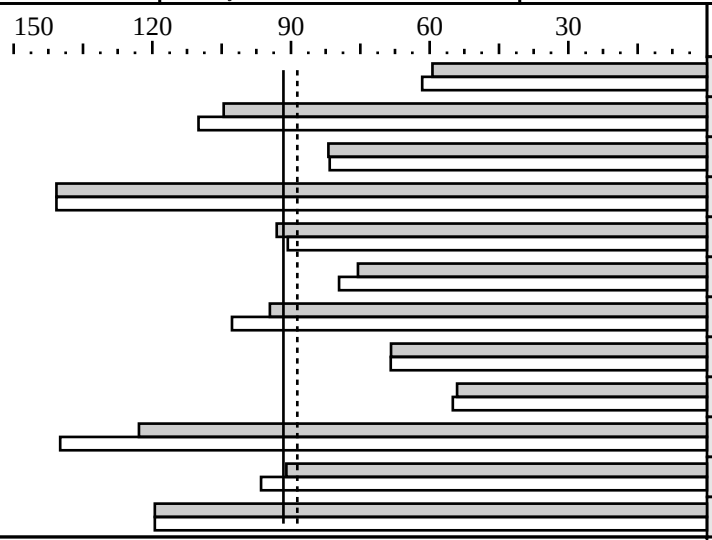
SGI
SGI Origin 3400 16X 600MHz R14k

SPECint_rate2000 = 91.6

SPECint_rate_base2000 = 88.6

SPEC license #: 4 | Tested by: SGI | Test date: Feb-2002 | Hardware Avail: Jan-2002 | Software Avail: Nov-2001



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
164.gzip	16	437	59.4	16	422	61.6
175.vpr	16	249	105	16	236	110
176.gcc	16	249	81.9	16	250	81.6
181.mcf	16	237	141	16	237	141
186.crafty	16	199	93.1	16	205	90.7
197.parser	16	442	75.5	16	420	79.6
252.eon	16	255	94.6	16	235	103
253.perlbmk	16	489	68.4	16	488	68.4
254.gap	16	378	54.1	16	371	55.0
255.vortex	16	287	123	16	252	140
256.bzip2	16	306	91.0	16	289	96.5
300.twolf	16	466	119	16	466	119

Hardware

CPU:	R14000
CPU MHz:	600
FPU:	Integrated
CPU(s) enabled:	16 cores, 16 chips, 1 core/chip
CPU(s) orderable:	4-32
Parallel:	No
Primary Cache:	32KBI + 32KBD on chip
Secondary Cache:	8MB(I+D) off chip
L3 Cache:	N/A
Other Cache:	N/A
Memory:	16 GB
Disk Subsystem:	1 x 18 GB FC, 4 x 18 GB FC (striped)
Other Hardware:	None

Software

Operating System:	IRIX 6.5.14m
Compiler:	MIPSpro 7.3.1.3m C, C++ SCSL 1.4 Math Library
File System:	xfs
System State:	Single-user

Notes/Tuning Information

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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.perlbmk: -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 occurances 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.perlbmk: -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.