



CFP2000 Result

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SGI
SGI Origin 3800 128X 600MHz R14k

SPECfp_rate2000 = **638**
SPECfp_rate_base2000 = **593**

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

4000 3000 2000 1000				Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
				168.wupwise	128	413	575	128	363	655
				171.swim	128	1021	451	128	999	461
				172.mgrid	128	703	380	128	685	390
				173.applu	128	680	459	128	619	504
				177.mesa	128	337	616	128	303	687
				178.galgel	128	219	1969	128	188	2295
				179.art	128	203	1905	128	202	1915
				183.equake	128	493	391	128	487	396
				187.facerec	128	344	820	128	342	826
				188.ampm	128	389	839	128	387	843
				189.lucas	128	725	410	128	708	420
				191.fma3d	128	892	350	128	808	386
				200.sixtrack	128	497	328	128	485	337
				301.apsi	128	773	499	128	561	689

Hardware

CPU: R14000
CPU MHz: 600
FPU: Integrated
CPU(s) enabled: 128 cores, 128 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: 128 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, Fortran90
SCSL 1.4 Math Library
File System: xfs
System State: Single-user

Notes/Tuning Information

Baseline optimization flags (for C benchmarks):

PASS1 : -Ofast=ip35 -fb_create /tmp/SPEC2000/FBDIR_base/\$(EXEBASE)

PASS2 : -Ofast=ip35 -fb_opt /tmp/SPEC2000/FBDIR_base/\$(EXEBASE)

Baseline optimization flags (for Fortran benchmarks): -Ofast=ip35 -LNO:fusion=2

Portability Flags:

178.galgel: -fixedform

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)

168.wupwise: -Ofast=ip35 -IPA:space=1000:linear=on:plimit=10000:callee_limit=5000

-INLINE:aggressive=on -OPT:Olimit=0 -LNO:fusion=2:prefetch Ahead=5

171.swim: -Ofast=ip35 -CG:ld_latency=10

172.mgrid: -Ofast=ip35 -LNO:fusion=2

173.applu: -Ofast=ip35 -LNO:ou_max=5:ou_prod_max=10:prefetch=0:fusion=2 -CG:ld_latency=3

177.mesa: -Ofast=ip35 -OPT:goto=off -LNO:opt=0 -CG:ld_latency=6 (FEEDBACK)

178.galgel: -Ofast=ip35 -LNO:ou_max=7 -CG:ld_latency=3 -lscs (FEEDBACK)

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Notes/Tuning Information (Continued)

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RM_SOURCES = lapak.f90
.
179.art: -Ofast=ip35 -LNO:prefetch=0 -IPA:min_hot=15 -CG:ld_latency=3 (FEEDBACK)
183.equake: -Ofast=ip35 -LNO:prefetch=0 -TENV:X=4 -CG:ld_latency=7 -IPA:space=500 (FEEDBACK)
187.facerec: -Ofast=ip35 -LNO:fusion=2
188.ammp: -Ofast=ip35 -OPT:goto=off -IPA:space=500:plimit=900 -CG:ld_latency=7 (FEEDBACK)
189.lucas: -Ofast=ip35 -LNO:fusion=2:blocking=off -CG:ld_latency=4 -IPA:min_hot=8 (FEEDBACK)
191.fma3d: -Ofast=ip35 -bigp_off -LNO:prefetch=0 -CG:ld_latency=2
.
-OPT:goto=off:unroll_size=160:unroll_times_max=4 (FEEDBACK)
200.sixtrack:= -Ofast=ip35 -IPA:maxdepth=2 -LNO:prefetch=0 (FEEDBACK)
301.apsi: -Ofast=ip35 -TENV:X=4 -LNO:prefetch=0:blocking=off -IPA:linear=on:use_intrinsic
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.