



CFP2000 Result

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SGI
SGI 2200 4X 500MHz R14k

SPECfp_rate2000 = 14.8

SPECfp_rate_base2000 = 13.7

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	571	13.0	4	525	14.1
171.swim	4	1786	8.05	4	1782	8.07
172.mgrid	4	1107	7.54	4	1101	7.59
173.applu	4	1038	9.39	4	939	10.4
177.mesa	4	404	16.1	4	369	17.6
178.galgel	4	254	53.0	4	223	60.3
179.art	4	214	56.3	4	213	56.6
183.equake	4	762	7.91	4	753	8.01
187.facerec	4	464	19.0	4	473	18.6
188.amp	4	458	22.3	4	458	22.3
189.lucas	4	1176	7.89	4	1177	7.88
191.fma3d	4	1344	7.25	4	1095	8.90
200.sixtrack	4	449	11.4	4	443	11.5
301.apsi	4	1114	10.8	4	739	16.3

Hardware

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

Software

Operating System: IRIX 6.5.12f
 Compiler: MIPSpro 7.3.1.2m C, Fortran90
 SCSL 1.3 Math Library
 File System: xfs
 System State: Single-user

Notes/Tuning Information

Baseline optimization flags (for C benchmarks):
 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)
 Baseline optimization flags (for Fortran benchmarks): -Ofast=ip27 -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=ip27 -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=ip27 -LNO:cs2=8m -CG:ld_latency=10
 172.mgrid: -Ofast=ip27 -LNO:fusion=2
 173.applu: -Ofast=ip27 -LNO:ou_max=5:ou_prod_max=10:prefetch=0:fusion=2 -CG:ld_latency=3
 177.mesa: -Ofast=ip27 -OPT:goto=off -LNO:opt=0:cs2=8m -CG:ld_latency=6 (FEEDBACK)
 178.galgel: -Ofast=ip27 -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=ip27 -LNO:prefetch=0 -IPA:min_hot=15 -CG:ld_latency=3 (FEEDBACK)
183.quake: -Ofast=ip27 -LNO:prefetch=0 -TENV:X=4 -CG:ld_latency=7 -IPA:space=500 (FEEDBACK)
187.facerec: -Ofast=ip27 -LNO:fusion=2
188.ammp: -Ofast=ip27 -OPT:goto=off -IPA:space=500:plimit=900 -CG:ld_latency=7 (FEEDBACK)
189.lucas: -Ofast=ip27 -LNO:fusion=2:blocking=off -CG:ld_latency=4 -IPA:min_hot=8 (FEEDBACK)
191.fma3d: -Ofast=ip27 -bigp_off -LNO:prefetch=0 -CG:ld_latency=2
.
  -OPT:goto=off:unroll_size=160:unroll_times_max=4 (FEEDBACK)
200.sixtrack:= -Ofast=ip27 -IPA:maxdepth=2 -LNO:prefetch=0 (FEEDBACK)
301.apsi: -Ofast=ip27 -TENV:X=4 -LNO:prefetch=0:blocking=off -IPA:linear=on:use_intrinsic
  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
```

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.