# CFP2000 Result

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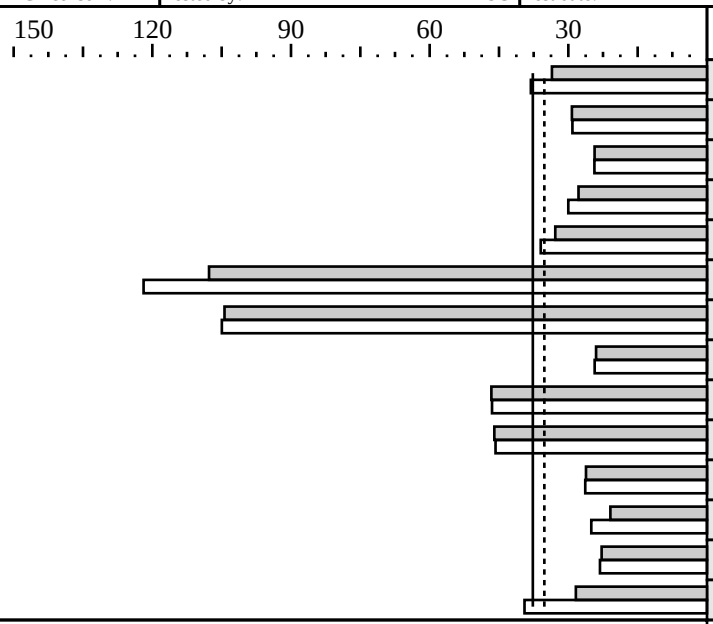
## SGI
## SGI Origin 3200 8X 500MHz R14k

SPECfp_rate2000 = 37.7

SPECfp_rate_base2000 = 35.2

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




| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|---|---|---|---|---|---|---|
| 168.wupwise | 8 | 443 | 33.5 | 8 | 390 | 38.1 |
| 171.swim | 8 | 984 | 29.2 | 8 | 988 | 29.1 |
| 172.mgrid | 8 | 687 | 24.3 | 8 | 686 | 24.4 |
| 173.applu | 8 | 701 | 27.8 | 8 | 649 | 30.0 |
| 177.mesa | 8 | 396 | 32.8 | 8 | 361 | 36.0 |
| 178.galgel | 8 | 250 | 108 | 8 | 221 | 122 |
| 179.art | 8 | 231 | 104 | 8 | 230 | 105 |
| 183.equake | 8 | 503 | 24.0 | 8 | 496 | 24.3 |
| 187.facerec | 8 | 378 | 46.6 | 8 | 379 | 46.5 |
| 188.ammp | 8 | 444 | 46.0 | 8 | 446 | 45.7 |
| 189.lucas | 8 | 709 | 26.2 | 8 | 705 | 26.3 |
| 191.fma3d | 8 | 932 | 20.9 | 8 | 779 | 25.0 |
| 200.sixtrack | 8 | 448 | 22.8 | 8 | 441 | 23.2 |
| 301.apsi | 8 | 850 | 28.4 | 8 | 611 | 39.5 |

### Hardware

| | |
|---|---|
| CPU: | R14000 |
| CPU MHz: | 500 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 8 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: | 8 GB |
| Disk Subsystem: | 1 x 18 GB FC, 24 x 18 GB FC (striped) |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | IRIX 6.5.11f |
| Compiler: | MIPSpro 7.3.1.2m C, C++, Fortran90<br>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 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)
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)

```
.           RM_SOURCES = lapak.f90
179.art: -Ofast=ip27 -LNO:prefetch=0 -IPA:min_hot=15 -CG:ld_latency=3 (FEEDBACK)
183.equake: -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
```