



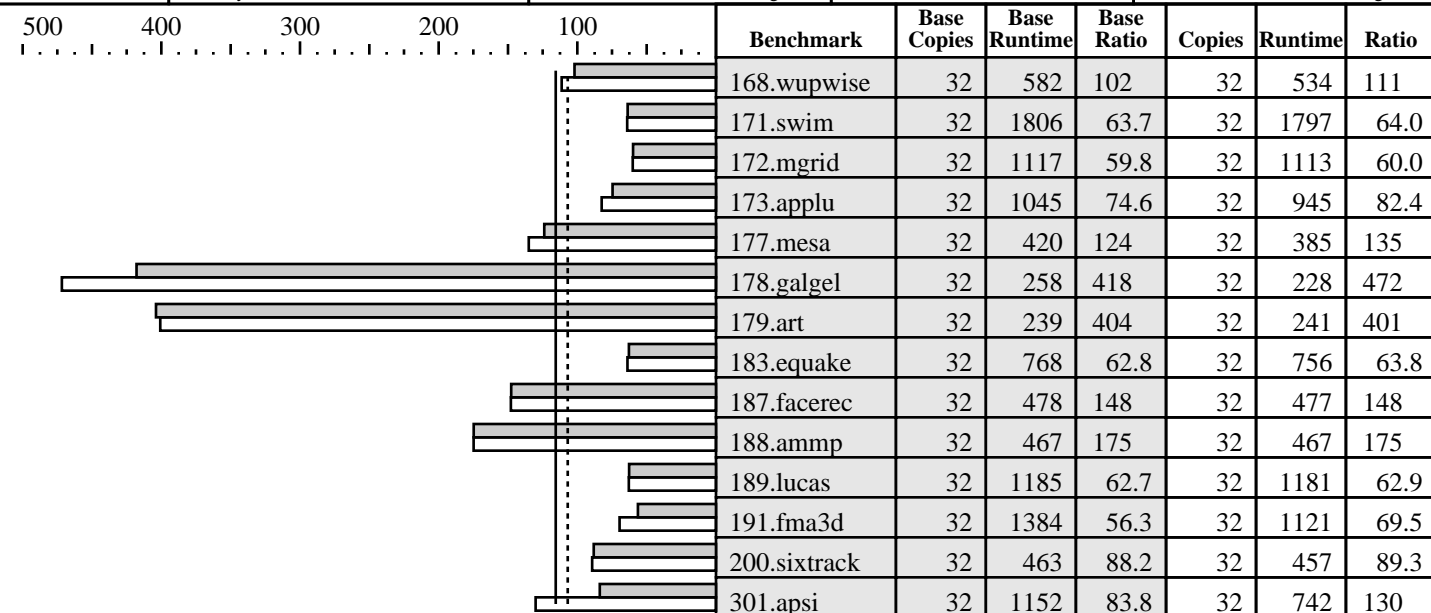
# CFP2000 Result

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**SGI**  
**SGI 2400 32X 500MHz R14k**

**SPECfp\_rate2000 = 116**  
**SPECfp\_rate\_base2000 = 107**

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



**Hardware**

CPU: R14000  
 CPU MHz: 500  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 32 chips, 1 core/chip  
 CPU(s) orderable: 2-64  
 Parallel: No  
 Primary Cache: 32KBI + 32KBD on chip  
 Secondary Cache: 8MB(I+D) off chip  
 L3 Cache: N/A  
 Other Cache: N/A  
 Memory: 32 GB  
 Disk Subsystem: 1 x 18 GB FC, 3 x 18 GB FC (striped)  
 Other Hardware: None

**Software**

Operating System: IRIX 6.5.13m  
 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)

```

.
  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.