CFP2000 Result

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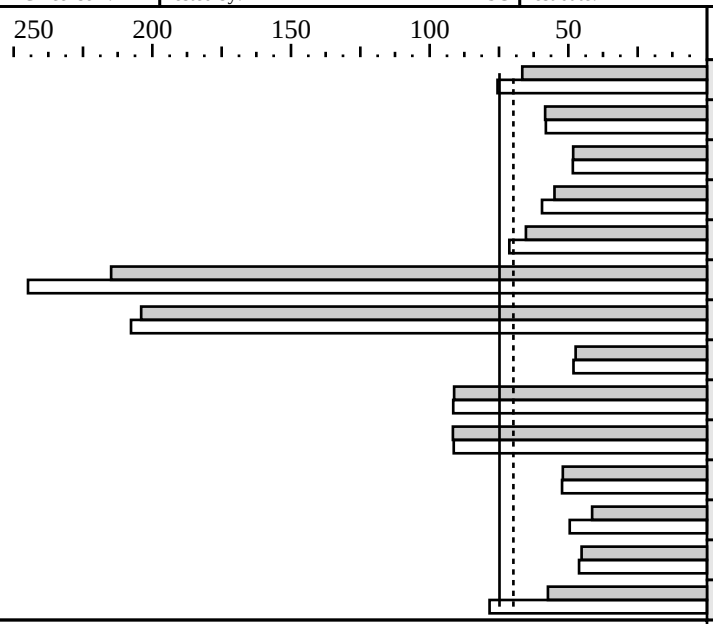
SGI
SGI Origin 3400 16X 500MHz R14k

SPECfp_rate2000 = 74.8

SPECfp_rate_base2000 = 69.8

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	16	446	66.6	16	393	75.5
171.swim	16	986	58.4	16	990	58.1
172.mgrid	16	692	48.3	16	691	48.4
173.applu	16	709	55.0	16	655	59.5
177.mesa	16	398	65.3	16	365	71.3
178.galgel	16	251	215	16	220	245
179.art	16	237	204	16	232	208
183.equake	16	509	47.4	16	501	48.1
187.facerec	16	387	91.2	16	385	91.5
188.ammp	16	446	91.6	16	447	91.3
189.lucas	16	714	52.0	16	710	52.3
191.fma3d	16	941	41.4	16	787	49.5
200.sixtrack	16	451	45.2	16	443	46.1
301.apsi	16	841	57.4	16	615	78.4

Hardware

CPU:	R14000
CPU MHz:	500
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, 24 x 18 GB FC (striped)
Other Hardware:	None

Software

Operating System:	IRIX 6.5.11f
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 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
```