CFP2000 Result

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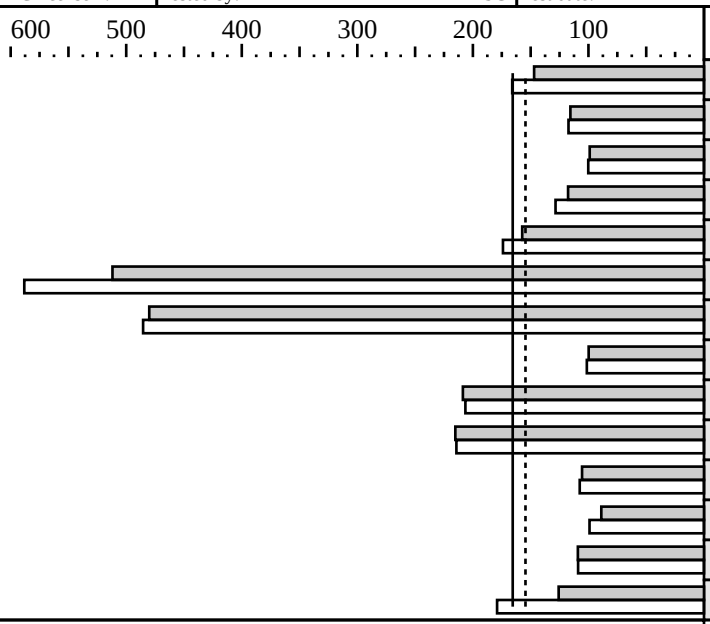
SGI
SGI Origin 3400 32X 600MHz R14k

SPECfp_rate2000 = 166

SPECfp_rate_base2000 = 154

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



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	32	404	147	32	358	166
171.swim	32	995	116	32	981	117
172.mgrid	32	676	98.9	32	667	100
173.applu	32	663	118	32	607	128
177.mesa	32	330	157	32	299	174
178.galgel	32	210	512	32	183	588
179.art	32	201	480	32	199	485
183.equake	32	483	99.8	32	476	101
187.facerec	32	338	209	32	342	206
188.ammp	32	380	215	32	381	214
189.lucas	32	704	106	32	690	108
191.fma3d	32	877	88.9	32	787	99.1
200.sixtrack	32	374	109	32	375	109
301.apsi	32	767	126	32	539	179

Hardware

CPU:	R14000
CPU MHz:	600
FPU:	Integrated
CPU(s) enabled:	32 cores, 32 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:	32 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 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=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)

```
.           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.
```