



CFP2000 Result

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Sun Microsystems
Sun Fire V40z

SPECfp_rate2000 = 70.0

SPECfp_rate_base2000 = 61.5

SPEC license #: 6 | Tested by: Sun Microsystems, Santa Clara | Test date: Jul-2004 | Hardware Avail: Jul-2004 | Software Avail: Jul-2004

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	107	69.6	4	86.8	85.6
171.swim	4	163	88.1	4	150	95.9
172.mgrid	4	223	37.5	4	152	55.0
173.applu	4	183	53.4	4	147	66.1
177.mesa	4	77.7	83.6	4	71.8	90.5
178.galgel	4	119	113	4	109	123
179.art	4	345	34.9	4	178	67.9
183.quake	4	114	52.8	4	108	55.8
187.facerec	4	97.2	90.7	4	97.2	90.7
188.amp	4	170	60.0	4	167	61.1
189.lucas	4	140	66.1	4	140	66.2
191.fma3d	4	154	63.1	4	154	63.1
200.sixtrack	4	150	34.1	4	150	34.1
301.apsi	4	180	67.1	4	179	67.3

Hardware

CPU: AMD Opteron (TM) 850
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 4 cores, 4 chips, 1 core/chip
 CPU(s) orderable: 1,2,4
 Parallel: No
 Primary Cache: 64KBI + 64KBD on chip
 Secondary Cache: 1024KB (I+D) on chip
 L3 Cache: N/A
 Other Cache: N/A
 Memory: 16x1GB, PC2700 CL2.5 DDR SDRAM ECC Registered
 Disk Subsystem: SCSI, 73GB, 10K RPM
 Other Hardware: None

Software

Operating System: SuSE Linux 8.0 SLES 64 bit (SP3)
 Compiler: PathScale EKO Compiler Suite, Release 1.1
 SuSE optional gcc 3.3 (from SLES8 SP3)
 PGI Fortran 5.2 (build 5.2-0E)
 AMD Core Math Library (Version 2.0) for AMD64
 File System: Linux/ext3
 System State: Multi-user, Run level 3

Notes/Tuning Information

A two-pass compilation method is used where indicated:

+PSFDO indicates PathScale feedback
 PASS1: -fb_create fbdata
 PASS2: -fb_opt fbdata
 +ACML is the AMD Core Math Library V2.0

Compilers:

C: pathcc (PathScale C) unless otherwise noted
 Fortran: pathf90 (PathScale f90) unless otherwise noted
 If other compilers are used, they are indicated as:
 gcc: Gnu C
 pgf90: PGI Fortran

Floating Point base tuning:

Fortran: pgf90 -fastsse -Mipa=fast -Msmart
 C: pathcc -Ofast -WOPT:mem_opnds=on +PSFDO



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Notes/Tuning Information (Continued)

Floating Point peak tuning:

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168.wupwise: pgf90 -fastsse -Mipa=fast,inline -Msmart
171.swim: -Ofast -OPT:ro=3 -LNO:fusion=2:prefetch=2
172.mgrid: -O3 -OPT:Ofast
-LNO:fusion=2:blocking=off:ou_max=5:sclrze=off:prefetch=2
-OPT:unroll_times=8:unroll_size=256:ro=3
-CG:gcm=off:cflow=off
173.applu: -O3 -ipa
-LNO:fusion=2:interchange=OFF:blocking=OFF:ou_prod_max=10
:ou_max=5:prefetch=2 -OPT:IEEE_arith=1:ro=3:unroll_size=0
-TENV:X=4 -WOPT:mem_opnds=on:retype_expr=on:val=0 -CG:local_fwd_sched=on
177.mesa: -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on +PSFDO
178.galgel: pgf90 -fastsse -Mipa=fast -mp +ACML
RM_SOURCES=lapak.f90 ONESTEP
179.art: -O3 -OPT:Ofast -fno-math-errno -m32 +PSFDO
183.earthquake: gcc -DSPEC_CPU2000_LP64 -O3 -funroll-all-loops -ffast-math
-finline-limit=2000 ONESTEP
187.facerec: basepeak=true
188.ammp: -O3 -OPT:alias=disjoint:unroll_times=8:Ofast:ro=3
-fno-math-errno -TENV:X=4 +PSFDO
189.lucas: pgf90 -fastsse -Mipa=fast,inline -Msmart
191.fma3d: basepeak=true
200.sixtrack: basepeak=true
301.apsi: -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0:blocking=off
-IPA:linear=on:plimit=525

```

Portability:

178.galgel: -Mfixed

Notes:

BIOS build 2.1.0.9E, default setting was used.