



CFP2000 Result

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IBM Corporation
IBM eServer e326 (AMD Opteron (TM) 246)

SPECfp_rate2000 = 35.0
SPECfp_rate_base2000 = 32.3

SPEC license #: 11 | Tested by: IBM, Inc. | Test date: Apr-2005 | Hardware Avail: Sep-2005 | Software Avail: Apr-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	2	81.4	45.6	2	74.2	50.1
171.swim	2	140	51.5	2	135	53.4
172.mgrid	2	137	30.4	2	122	34.1
173.applu	2	140	34.9	2	122	40.0
177.mesa	2	93.0	34.9	2	86.3	37.6
178.galgel	2	129	52.3	2	115	58.3
179.art	2	132	45.6	2	99.5	60.6
183.quake	2	111	27.1	2	106	28.4
187.facerec	2	107	41.3	2	98.3	44.9
188.amp	2	242	21.1	2	231	22.1
189.lucas	2	166	28.0	2	166	28.0
191.fma3d	2	176	27.7	2	171	28.4
200.sixtrack	2	172	14.8	2	163	15.7
301.apsi	2	253	23.8	2	246	24.5

Hardware

CPU: AMD Opteron 246
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 2 cores, 2 chips, 1 core/chip
CPU(s) orderable: 1,2
Parallel: No
Primary Cache: 64KBI + 64KBD on chip
Secondary Cache: 1024KB (I+D) on chip
L3 Cache: N/A
Other Cache: N/A
Memory: 8 x 1GB, DDR400
Disk Subsystem: SCSI, 36GB 10K RPM
Other Hardware: None

Software

Operating System: SuSE Linux 9.0 SP1 SLES 64 bit Kernel 2.6.5-7.151-smp (SP1)
Compiler: PathScale EKOPATH(TM) Compiler Suite, Release 2.1
File System: Linux/reiserfs
System State: Multi-user, run level 3

Notes/Tuning Information

Tested by IBM, Inc.

```
+FDO: PASS1= -fb_create fbdata PASS2= -fb_opt fbdata
+ACML means -L/opt/acml2.5.1/pathscale64/lib -lacml,
which causes linking with AMD Core Math Library V2.5.1
```

Baseline optimization

```
C programs: -Ofast -WOPT:mem_opnds=on +FDO
Fortran programs: -Ofast -LNO:fusion=2 -OPT:fast_complex=on +FDO
Portability Flags:
178.galgel: -fixedform
```

Peak Tuning:

```
168.wupwise: -Ofast -LNO:prefetch Ahead=5:prefetch=3
-OPT:unroll_times_max=8:unroll_size=128:IEEE_NaN_Inf=off:ro=3
-IPA:linear=on:plimit=50000:callee_limit=5000
-INLINE:aggressive=on
```



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Notes/Tuning Information (Continued)

```

171.swim: -Ofast -LNO:fusion=2 -m3dnow
172.mgrid: -O3 -LNO:fusion=2:blocking=off
           -OPT:Ofast:unroll_times_max=8:unroll_size=256:ro=3
           -CG:gcm=off:cflow=off -m3dnow
173.applu: -Ofast -CG:local_fwd_sched=on
           -LNO:fusion=2:fission=2:full_unroll_size=10000:prefetch=3
           -OPT:ro=3 -TENV:X=3
177.mesa: -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on +FDO
178.galgel: -Ofast -OPT:fast_complex=on +ACML
179.art: -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32
183.quake: -Ofast -CG:load_exe=2 -OPT:treeheight=on -WOPT:mem_opnds=on -m32
187.facerec: -Ofast -OPT:IEEE_NaN_Inf=off:ro=3 -LNO:fusion=2
            -IPA:plimit=1500 +FDO
188.ammp: -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
          -fno-math-errno -TENV:X=4 +FDO
189.lucas: basepeak = true
191.fma3d: -O2 -ipa -CG:load_exe=1 -OPT:Ofast:IEEE_arith=3:ro=3
          -WOPT:mem_opnds=on:retype_expr=on -IPA:pu_reorder=1 +FDO
200.sixtrack:= -O3 -OPT:Ofast:Olimit=6000 -fno-math-errno -CG:load_exe=1 +FDO
301.apsi: -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0

```