



CFP2000 Result

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IBM Corporation

AMD Opteron LS20 for IBM eServer Blade Center (AMD Opteron (TM) 270)

SPECfp_rate2000 = 63.1

SPECfp_rate_base2000 = 58.9

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	85.6	86.7	4	87.9	84.5
171.swim	4	251	57.2	4	246	58.5
172.mgrid	4	167	49.9	4	157	53.1
173.applu	4	162	60.2	4	144	67.6
177.mesa	4	90.5	71.8	4	84.2	77.2
178.galgel	4	141	95.1	4	132	102
179.art	4	159	75.8	4	103	117
183.equake	4	124	48.7	4	113	53.5
187.facerec	4	124	70.9	4	121	72.6
188.amp	4	223	45.8	4	211	48.5
189.lucas	4	165	56.2	4	165	56.2
191.fma3d	4	186	52.4	4	184	52.8
200.sixtrack	4	170	30.1	4	167	30.6
301.apsi	4	216	55.9	4	209	57.6

Hardware

CPU: AMD Opteron 270
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1,2
 Parallel: No
 Primary Cache: 64KBI + 64KBD (on chip) per core
 Secondary Cache: 1024KB (I+D) (on chip) per core
 L3 Cache: N/A
 Other Cache: N/A
 Memory: 4 x 2048MB, DDR400
 Disk Subsystem: SCSI, 36GB 10K RPM
 Other Hardware: None

Software

Operating System: SuSE Linux 9.0 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

```