



CFP2000 Result

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Supermicro

Motherboard H8DM8-2, AMD Opteron(TM) 2220 SE

SPECfp_rate2000 = 91.9

SPECfp_rate_base2000 = 84.9

SPEC license #01176 Tested by: Supermicro Test date: Oct-2006 Hardware Avail: Sep-2006 Software Avail: Aug-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	60.2	123	4	54.7	136
171.swim	4	180	80.1	4	176	81.7
172.mgrid	4	119	70.3	4	115	72.9
173.applu	4	111	88.1	4	97.0	100
177.mesa	4	61.9	105	4	57.4	113
178.galgel	4	95.0	142	4	89.0	151
179.art	4	113	107	4	76.4	158
183.quake	4	93.8	64.3	4	84.9	71.0
187.facerec	4	77.3	114	4	78.4	112
188.amp	4	139	73.7	4	130	78.5
189.lucas	4	123	75.4	4	118	78.8
191.fma3d	4	131	74.1	4	132	73.9
200.sixtrack	4	117	43.8	4	112	45.7
301.apsi	4	152	79.1	4	145	83.5

Hardware

CPU: AMD Opteron(TM) 2220 SE processor
 CPU MHz: 2800
 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: 8x2048MB, DDR2-667 Dual Rank CL4 ECC Reg
 Disk Subsystem: SATA, 400 GB
 Other Hardware: None

Software

Operating System: SuSE Linux Enterprise Server 9 for AMD64, SP3
 Compiler: PathScale EKOPath(TM) Compiler Suite, Release 2.3
 File System: Linux/reiserfs
 System State: Multi-user, run level 3

Notes/Tuning Information

Tested by Supermicro Computer, Inc.

```
+FDO: PASS1= -fb_create fbdata PASS2= -fb_opt fbdata
+ACML means -L<acml2.7.0-install-dir>/pathscale64/lib -lacml,
which causes linking with AMD Core Math Library V2.7.0
```

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)

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171.swim:      -Ofast -CG:local_fwd_sched=on -LNO:fusion=2 -m3dnow
172.mgrid:    -Ofast -CG:gcm=off -OPT:IEEE_arith=3:unroll_size=200
              -LNO:fusion=2:fission=1:blocking=off:prefetch_ahead=2
              -WOPT:mem_opnds=on:aggstr=0
173.applu:    -Ofast -CG:local_fwd_sched=on -OPT:ro=3 -TENV:X=3
              -LNO:fusion=2:fission=2:full_unroll_size=10000 +FDO
177.mesa:     -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on -WOPT:mem_opnds=on +FDO
178.galgel:   -Ofast -OPT:fast_complex=on +ACML +FDO
              RM_SOURCES=lapak.f90
179.art:      -O3 -OPT:Ofast -fno-math-errno -mno-sse2 -m32
183.quake:    -Ofast -CG:load_exe=2 -WOPT:mem_opnds=on -m32 +FDO
187.facerec:  -Ofast -LNO:fusion=2
              -OPT:fast_complex=on:IEEE_NaN_Inf=off:unroll_size=0 +FDO
188.ammp:     -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
              -fno-math-errno -TENV:X=4 +FDO
189.lucas:    -Ofast -OPT:ro=3:fast_nint=off:unroll_size=256 -WOPT:mem_opnds=on +FDO
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:early_intrinsics=on
              -fno-math-errno -CG:load_exe=1 +FDO
301.apsi:     -Ofast -CG:load_exe=0 -LNO:prefetch=0:simd=2

```

Taskset utility used to bind CPU(s) to processes

Tested systems can be used with SC811S-520 case,

Memory populated at location DIMMA 1A, DIMMA 1B, DIMMA 2A, DIMMA 2B for CPU1 and DIMMB 1A, DIMMB 1B, DIMMB 2A, DIMMB 2B for CPU2

To ensure system stability, a 550W (minimum) ATX power supply [4-pin (+12V), 8-pin (+12V) and 24-pin are required]

Product description located as of H8DM8: <http://www.supermicro.com/Aplus/motherboard/Opteron2000/MCP55/H8DM8-2.cfm>