# CFP2000 Result

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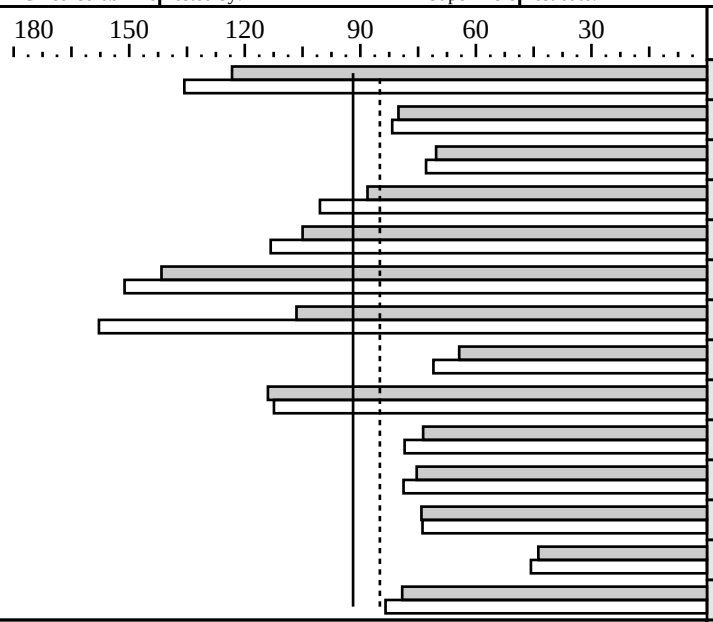
## Supermicro

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.equake | 4 | 93.8 | 64.3 | 4 | 84.9 | 71.0 |
| 187.facerec | 4 | 77.3 | 114 | 4 | 78.4 | 112 |
| 188.ammp | 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)

```
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.equake:   -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
```