



# CFP2000 Result

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**Fujitsu Siemens Computers**  
CELSIUS V830, Opteron (TM) 280, Linux 64-bit

SPECfp\_rate2000 = **74.7**  
SPECfp\_rate\_base2000 = **69.5**

SPEC license #: 22 | Tested by: Fujitsu Siemens Computers | Test date: Jan-2006 | Hardware Avail: Sep-2005 | Software Avail: Dec-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	70.9	105	4	63.7	117
171.swim	4	250	57.5	4	248	58.1
172.mgrid	4	160	52.3	4	158	53.0
173.applu	4	132	73.6	4	122	79.6
177.mesa	4	71.6	90.7	4	66.8	97.3
178.galgel	4	122	111	4	110	122
179.art	4	136	88.8	4	93.6	129
183.quake	4	117	51.6	4	106	56.8
187.facerec	4	92.7	95.1	4	92.7	95.1
188.amp	4	157	65.2	4	148	69.0
189.lucas	4	153	60.7	4	151	61.3
191.fma3d	4	162	60.2	4	162	60.1
200.sixtrack	4	135	37.7	4	130	39.4
301.apsi	4	177	68.2	4	168	71.9

**Hardware**

CPU: AMD Opteron 280  
CPU MHz: 2400  
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: 8 x 512 MB PC3200 CL3-3-3 DDR SDRAM  
Disk Subsystem: SCSI U320  
Other Hardware: None

**Software**

Operating System: SLES 9 with SP3 (AMD64) - kernel 2.6.5-7.244-smp  
Compiler: PathScale EKOPath(TM) Compiler Suite, Release 2.3 (for C and Fortran)  
AMD Core Mathematical Library (ACML), Version 3.0.0  
File System: Linux/ReiserFS  
System State: Multi-User SuSE Run Level 3

## Notes/Tuning Information

Portability flags:  
178.galgel: -fixedform

Feedback Optimization:  
+FDO: PASS1=-fb\_create fbdata PASS2=-fb\_opt fbdata

AMD Core Math Library  
+ACML means -L<acml-install-dir>/pathscale64/lib -lacml,  
which causes linking with AMD Core Math Library

Baseline Optimization Flags:  
C programs: -Ofast -WOPT:mem\_opnds=on +FDO  
Fortran programs: -Ofast -LNO:fusion=2 -OPT:fast\_complex=on +FDO

Peak Tuning Flags:  
168.wupwise: -Ofast -LNO:prefetch Ahead=5:prefetch=3  
-OPT:unroll\_times\_max=8:unroll\_size=128:IEEE\_NaN\_Inf=off:ro=3



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## Notes/Tuning Information (Continued)

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-IPA:linear=on:plimit=50000:callee_limit=5000
-INLINE:aggressive=on
171.swim: -Ofast -CG:local_fwd_sched=on -LNO:fusion=2 -m3dnow
172.mgrid: -Ofast -CG:gcm=off -OPT:IEEE_a=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:prefetch=3
          +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

```

BIOS default settings with  
Node memory interleave disabled, SRAT enabled  
taskset has been used to bind processes to CPUs

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