



# CFP2000 Result

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**Fujitsu Siemens Computers**  
CELSIUS V830, Opteron (TM) 254, Linux 64-bit

SPECfp\_rate2000 = 26.7  
SPECfp\_rate\_base2000 = 24.3

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	1	56.6	32.8	1	48.9	37.9
171.swim	1	122	29.6	1	118	30.6
172.mgrid	1	97.5	21.4	1	89.6	23.3
173.applu	1	95.9	25.4	1	84.3	28.9
177.mesa	1	61.4	26.4	1	57.2	28.4
178.galgel	1	84.6	39.8	1	75.2	44.7
179.art	1	95.6	31.5	1	65.7	45.9
183.quake	1	73.8	20.4	1	67.3	22.4
187.facerec	1	68.7	32.1	1	69.7	31.6
188.amp	1	134	19.1	1	125	20.4
189.lucas	1	94.0	24.7	1	83.2	27.9
191.fma3d	1	120	20.4	1	118	20.6
200.sixtrack	1	116	11.0	1	111	11.5
301.apsi	1	146	20.7	1	137	22.0

### Hardware

CPU: AMD Opteron 254  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 1 core, 1 chip, 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: 4 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.earthquake: -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.ammpp: -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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