



# CFP2000 Result

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Fujitsu Siemens Computers  
PRIMERGY RX220, AMD Opteron (TM) 280

SPECfp\_rate2000 = 37.6  
SPECfp\_rate\_base2000 = 35.3

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	2	67.9	54.7	2	64.2	57.8
171.swim	2	240	30.0	2	240	30.0
172.mgrid	2	158	26.4	2	156	26.8
173.applu	2	130	37.5	2	120	40.6
177.mesa	2	73.0	44.5	2	69.7	46.6
178.galgel	2	116	57.9	2	111	60.6
179.art	2	134	45.1	2	93.8	64.3
183.quake	2	116	26.0	2	105	28.7
187.facerec	2	92.8	47.5	2	89.5	49.2
188.amp	2	156	32.8	2	147	34.6
189.lucas	2	152	30.6	2	149	31.1
191.fma3d	2	158	30.8	2	159	30.7
200.sixtrack	2	138	18.5	2	131	19.4
301.apsi	2	176	34.2	2	165	36.5

### Hardware

CPU: AMD Opteron (TM) 280 processor (2.40 GHz)  
CPU MHz: 2400  
FPU: Integrated  
CPU(s) enabled: 2 cores, 1 chip, 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: 4x2048MB DDR-RAM PC3200R  
Disk Subsystem: Western Digital WD2500 (SATA, 7.2krpm)  
Other Hardware: None

### Software

Operating System: SuSE Linux Enterprise Server 9 (x86\_64) SP 2  
SuSE Kernel 2.6.5-7.191-smp  
Compiler: PathScale EKOPath(TM) Compiler Suite, Release 2.2.1 (for C and Fortran)  
AMD Core Mathematical Library (ACML), Version 2.6.0  
File System: Linux/reiserfs  
System State: Multi-user run level 3

## Notes/Tuning Information

### GENERAL

+FDO: PASS1= -fb\_create fbdata PASS2= -fb\_opt fbdata  
+ACML: Linked with AMD Core Math Library

### Portability flags

178.galgel: -fixedform

### Base tuning flags

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



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## Notes/Tuning Information (Continued)

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-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
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

```

MYMASK=`printf '0x%x' \\${(1<<\\$SPECUSERNUM)}`; /usr/bin/taskset \\$MYMASK \$command:  
Taskset utility used to bind process to CPU(s)

BIOS settings: Memory timing=1T

This result was measured with 64-bit binaries using the 64-bit version of the operating system.

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