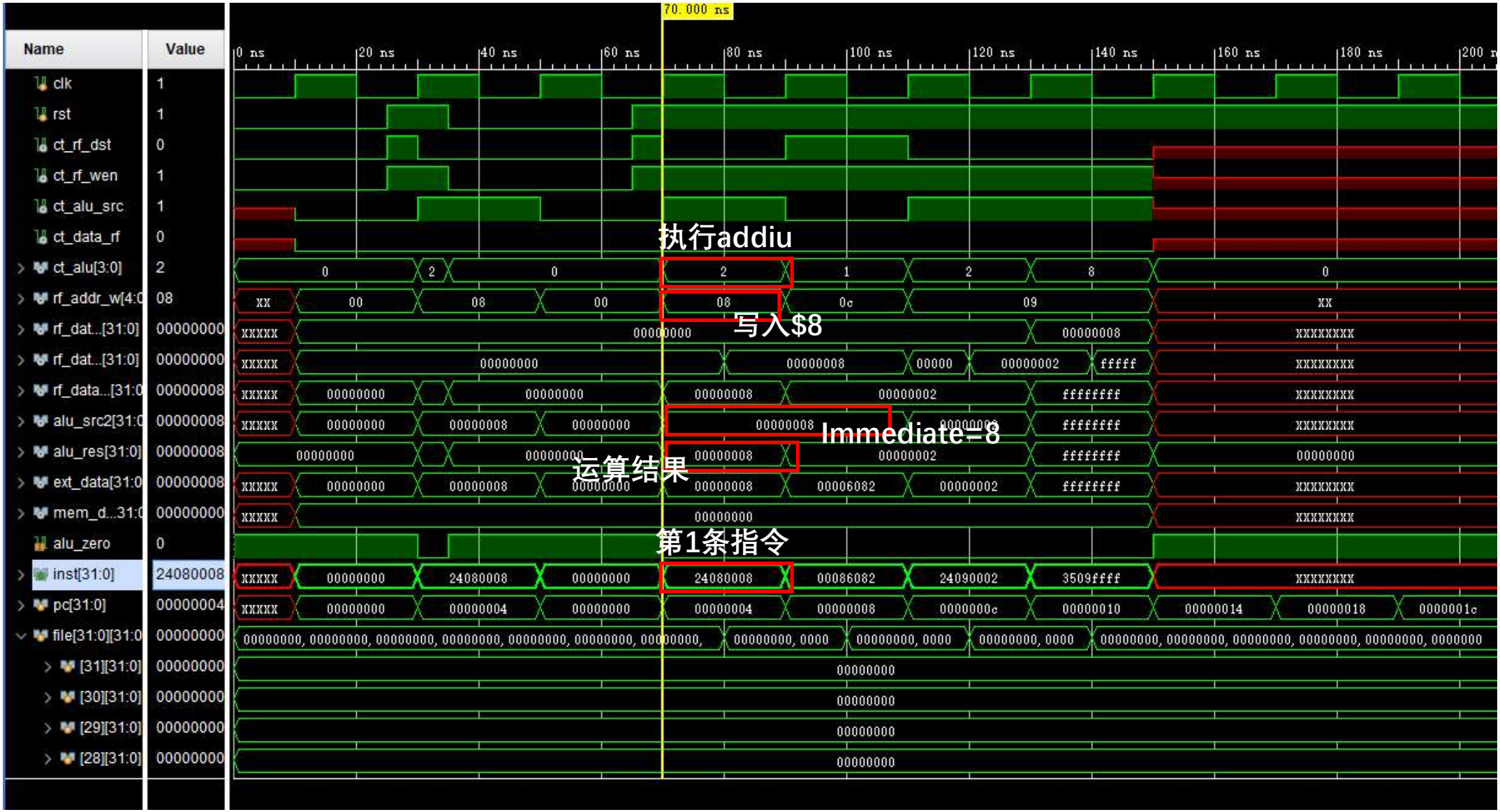
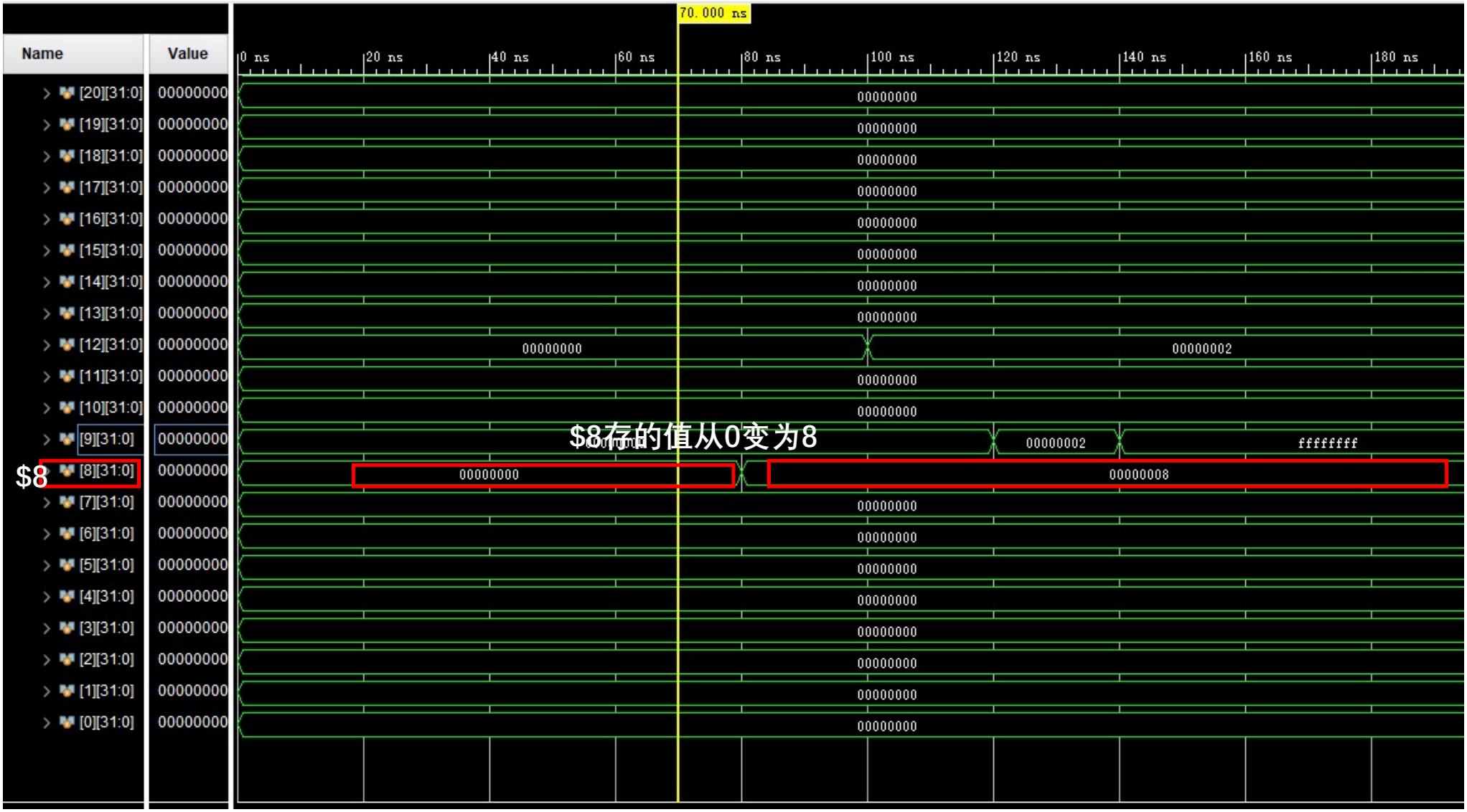
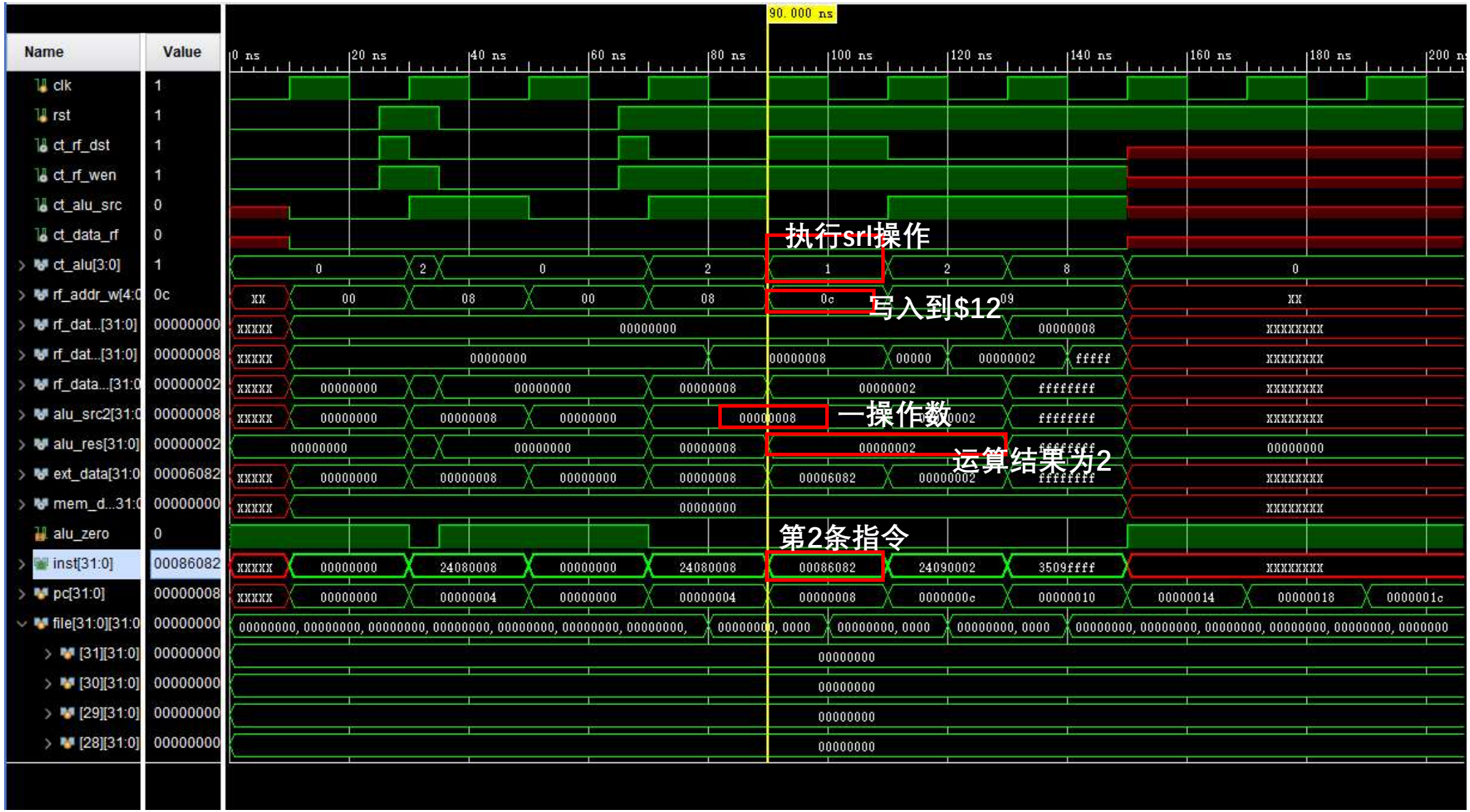
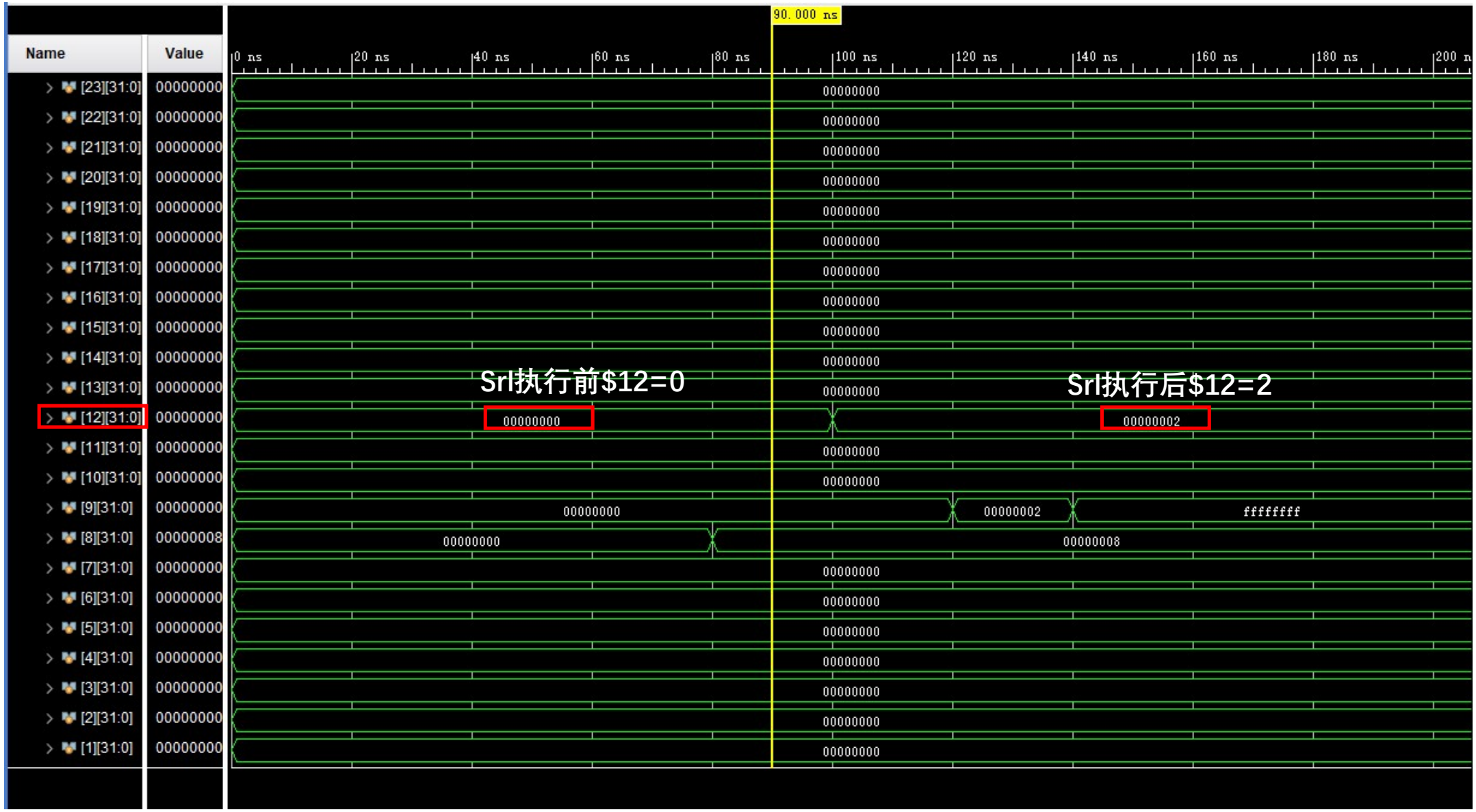
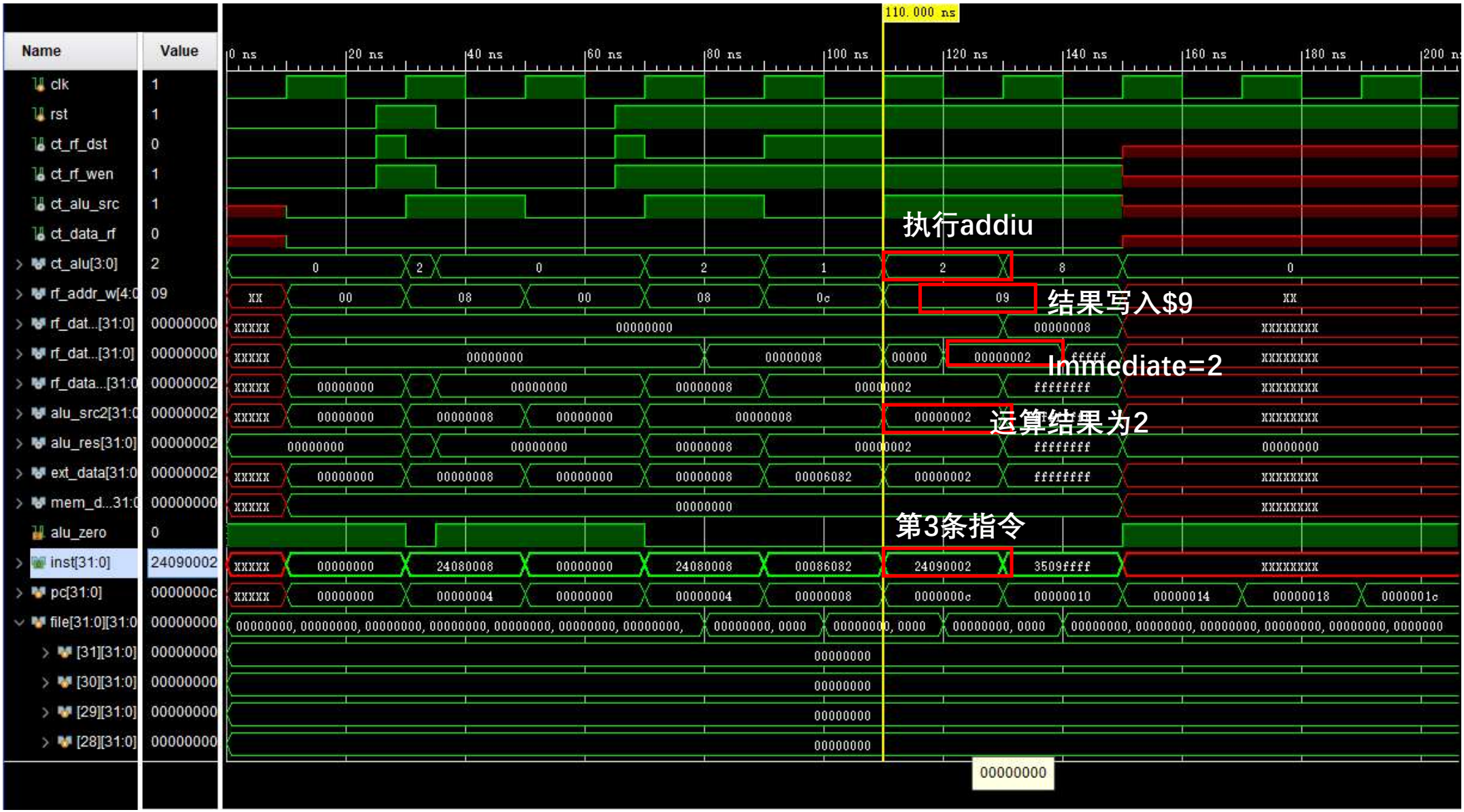

Name
Value
clk 1
rst 1
ct_rf_dst 0
ct_rf_wen 1
ct_alu_src 1
ct_data_rf 0
ct_alu[3:0] 2
rf_addr_w[4:0 08
rf_dat...[31:0] 00000000
rf_dat...[31:0] 00000000
rf_data...[31:0 00000008
alu_src2[31:0 00000008
alu_res[31:0] 00000008
ext_data[31:0 00000008
mem_d...31:0 00000000
alu_zero 0
inst[31:0] 24080008
pc[31:0] 00000004
file[31:0][31:0 00000000
[31][31:0] 00000000
[30][31:0] 00000000
[29][31:0] 00000000
[28][31:0] 00000000
70.000 ns
0 ns
20 ns
40 ns
60 ns
80 ns
100 ns
120 ns
140 ns
160 ns
180 ns
执行addiu
写入$8
Immediate=8
运算结果
第1条指令

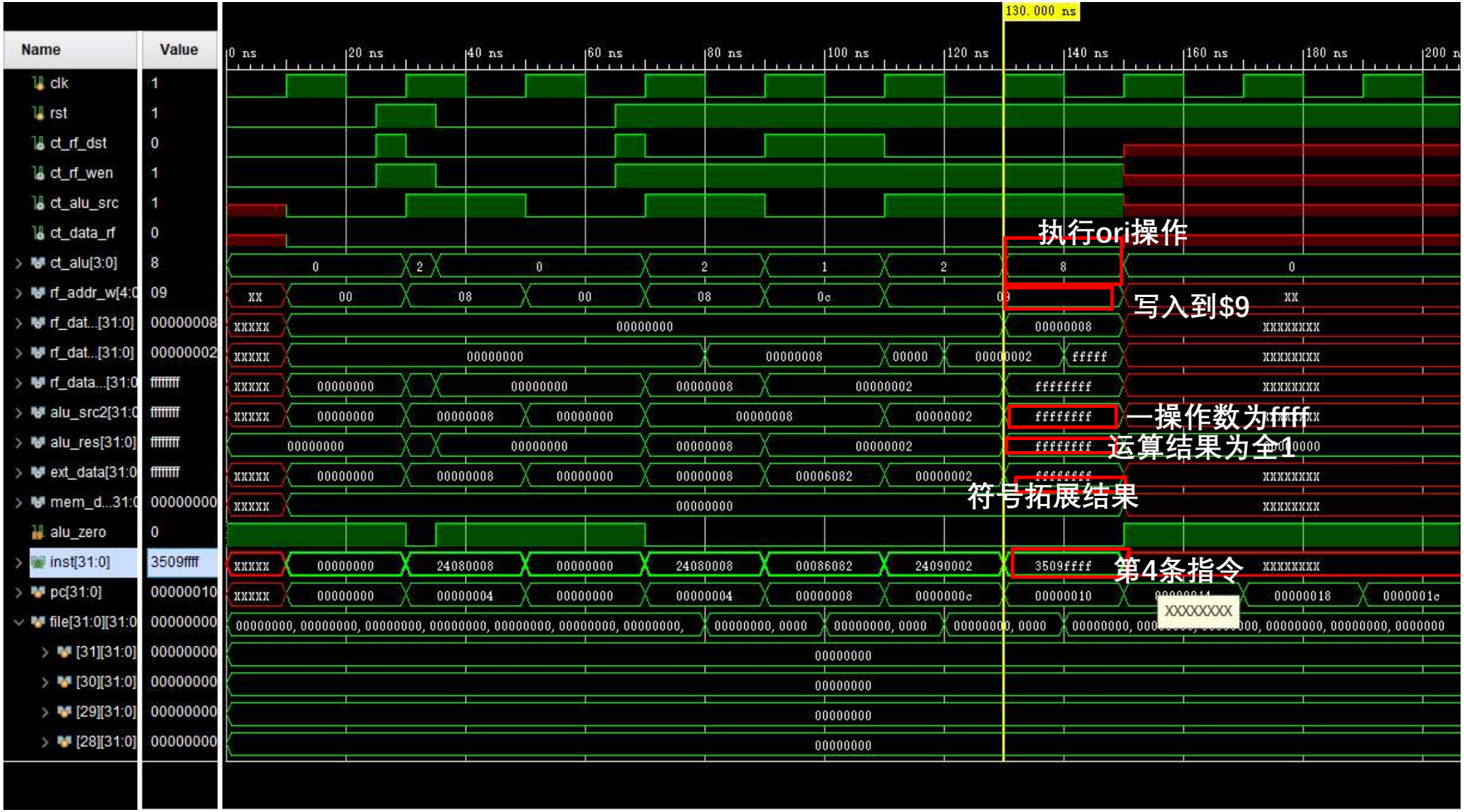

70.000 ns
Name
Value
0 ns
20 ns
40 ns
60 ns
80 ns
100 ns
120 ns
140 ns
160 ns
180 ns
[20][31:0] 00000000
[19][31:0] 00000000
[18][31:0] 00000000
[17][31:0] 00000000
[16][31:0] 00000000
[15][31:0] 00000000
[14][31:0] 00000000
[13][31:0] 00000000
[12][31:0] 00000000
[11][31:0] 00000000
[10][31:0] 00000000
[9][31:0] 00000000
[8][31:0] 00000000
[7][31:0] 00000000
[6][31:0] 00000000
[5][31:0] 00000000
[4][31:0] 00000000
[3][31:0] 00000000
[2][31:0] 00000000
[1][31:0] 00000000
[0][31:0] 00000000
00000002
ffffffff
00000008
$8
$8存的值从0变为8

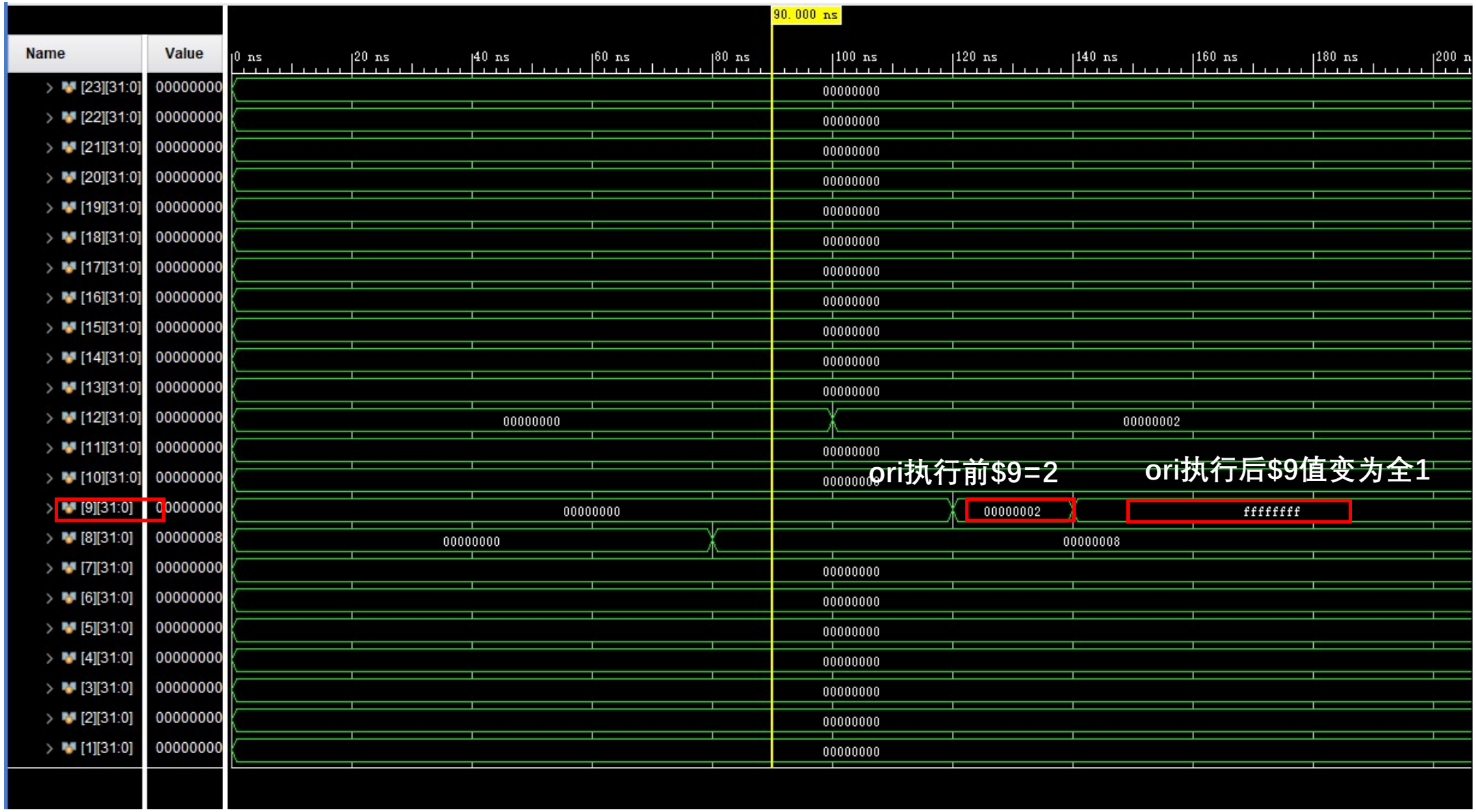

90.000 ns
Name
Value
clk
rst
ct_rf_dst
ct_rf_wen
ct_alu_src
ct_data_rf
ct_alu[3:0]
rf_addr_w[4:0
rf_dat...[31:0]
rf_dat...[31:0]
rf_data...[31:0
alu_src2[31:0
alu_res[31:0]
ext_data[31:0
mem_d...31:0
alu_zero
inst[31:0]
pc[31:0]
file[31:0][31:0
[31][31:0]
[30][31:0]
[29][31:0]
[28][31:0]
执行srl操作
写入到$12
一操作数
运算结果为2
第2条指令


Name
Value
90.000 ns
0 ns
20 ns
40 ns
60 ns
80 ns
100 ns
120 ns
140 ns
160 ns
180 ns
200 n
[23][31:0] 00000000
[22][31:0] 00000000
[21][31:0] 00000000
[20][31:0] 00000000
[19][31:0] 00000000
[18][31:0] 00000000
[17][31:0] 00000000
[16][31:0] 00000000
[15][31:0] 00000000
[14][31:0] 00000000
[13][31:0] 00000000
[12][31:0] 00000000
[11][31:0] 00000000
[10][31:0] 00000000
[9][31:0] 00000000
[8][31:0] 00000008
[7][31:0] 00000000
[6][31:0] 00000000
[5][31:0] 00000000
[4][31:0] 00000000
[3][31:0] 00000000
[2][31:0] 00000000
[1][31:0] 00000000
Srl执行前$12=0
Srl执行后$12=2
00000002
ffffffff
00000008


Name
Value
clk 1
rst 1
ct_rf_dst 0
ct_rf_wen 1
ct_alu_src 1
ct_data_rf 0
ct_alu[3:0] 2
rf_addr_w[4:0 09
rf_dat...[31:0] 00000000
rf_dat...[31:0] 00000000
rf_data...[31:0 00000002
alu_src2[31:0 00000002
alu_res[31:0] 00000002
ext_data[31:0 00000002
mem_d...31:0 00000000
alu_zero 0
inst[31:0] 24090002
pc[31:0] 0000000c
file[31:0][31:0 00000000
[31][31:0] 00000000
[30][31:0] 00000000
[29][31:0] 00000000
[28][31:0] 00000000
110.000 ns
0 ns
20 ns
40 ns
60 ns
80 ns
100 ns
120 ns
140 ns
160 ns
180 ns
200 ns
执行addiu
结果写入$9
Immediate=2
运算结果为2
第3条指令
00000000

Name
Value
90.000 ns
0 ns
20 ns
40 ns
60 ns
80 ns
100 ns
120 ns
140 ns
160 ns
180 ns
[23][31:0] 00000000
[22][31:0] 00000000
[21][31:0] 00000000
[20][31:0] 00000000
[19][31:0] 00000000
[18][31:0] 00000000
[17][31:0] 00000000
[16][31:0] 00000000
[15][31:0] 00000000
[14][31:0] 00000000
[13][31:0] 00000000
[12][31:0] 00000000
[11][31:0] 00000000
[10][31:0] 00000000
[9][31:0] 00000000
[8][31:0] 00000008
[7][31:0] 00000000
[6][31:0] 00000000
[5][31:0] 00000000
[4][31:0] 00000000
[3][31:0] 00000000
[2][31:0] 00000000
[1][31:0] 00000000
addiu执行前$9=0
addiu执行后$9=2
00000002
ffffffff


Name
Value
clk 1
rst 1
ct_rf_dst 0
ct_rf_wen 1
ct_alu_src 1
ct_data_rf 0
ct_alu[3:0] 8
rf_addr_w[4:0 09
rf_dat...[31:0] 00000008
rf_dat...[31:0] 00000002
rf_data...[31:0 ffffffff
alu_src2[31:0 ffffffff
alu_res[31:0] ffffffff
ext_data[31:0 ffffffff
mem_d...31:0 00000000
alu_zero 0
inst[31:0] 3509ffff
pc[31:0] 00000010
file[31:0][31:0 00000000
[31][31:0] 00000000
[30][31:0] 00000000
[29][31:0] 00000000
[28][31:0] 00000000
130.000 ns
执行ori操作
写入到$9
一操作数为ffff
运算结果为全1
符号拓展结果
第4条指令


Name
Value
90.000 ns
0 ns
20 ns
40 ns
60 ns
80 ns
100 ns
120 ns
140 ns
160 ns
180 ns
200 n
[23][31:0] 00000000
[22][31:0] 00000000
[21][31:0] 00000000
[20][31:0] 00000000
[19][31:0] 00000000
[18][31:0] 00000000
[17][31:0] 00000000
[16][31:0] 00000000
[15][31:0] 00000000
[14][31:0] 00000000
[13][31:0] 00000000
[12][31:0] 00000000
[11][31:0] 00000000
[10][31:0] 00000000
[9][31:0] 00000000
[8][31:0] 00000008
[7][31:0] 00000000
[6][31:0] 00000000
[5][31:0] 00000000
[4][31:0] 00000000
[3][31:0] 00000000
[2][31:0] 00000000
[1][31:0] 00000000
00000000
00000002
ffffffff
00000008
ori执行前$9=2
ori执行后$9值变为全1

ct_alu
rf_data_r1
alu_src2
shamt
ALU
alu_zero
alu_res