

AAL 8

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pi@gibsgibs: ~/Desktop
pi@gibsgibs:~/Desktop $ vim asml8_1.s
pi@gibsgibs:~/Desktop $ as -o asml8_1.o asml8_1.s
pi@gibsgibs:~/Desktop $ gcc -o asml8_1 asml8_1.o
pi@gibsgibs:~/Desktop $ ./asml8_1
pi@gibsgibs:~/Desktop $ ./asml8_1 ; echo $?
54
pi@gibsgibs:~/Desktop $ (gdb) start
Temporary breakpoint 1 at 0x103e8
Starting program: /home/pi/Desktop/asml8_1

Temporary breakpoint 1, 0x000103e8 in main ()
(gdb) disas
Dump of assembler code for function main:
=> 0x000103e8 <+0>:    ldr     r1, [pc, #52]    ; 0x10424 <addr_var1>
0x000103ec <+4>:    ldr     r1, [r1]
0x000103f0 <+8>:    ldr     r2, [pc, #48]    ; 0x10428 <addr_var2>
0x000103f4 <+12>:   ldr     r2, [r2]
0x000103f8 <+16>:   ldr     r3, [pc, #44]    ; 0x1042c <addr_var3>
0x000103fc <+20>:   ldr     r3, [r3]
0x00010400 <+24>:   cmp     r1, r2
0x00010404 <+28>:   movge   r0, r1
0x00010408 <+32>:   movlt   r0, r2
0x0001040c <+36>:   cmp     r0, r3
0x00010410 <+40>:   movlt   r0, r3
0x00010414 <+44>:   ldr     r4, [pc, #20]    ; 0x10430 <addr_var4>
0x00010418 <+48>:   mov     r5, r0
0x0001041c <+52>:   str     r5, [r4]
End of assembler dump.
(gdb) break end
Breakpoint 2 at 0x10420
(gdb) continue
Continuing.

Breakpoint 2, 0x00010420 in end ()
(gdb) info registers r0 r1 r2 r3 r4 r5
r0             0x36      54
r1             0x22      34
r2             0x36      54
r3             0x15      21
r4             0x205d8   132568
r5             0x36      54
(gdb)
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pi@gibsgibs: ~/Desktop
pi@gibsgibs:~/Desktop $ vim asml8_2.s
pi@gibsgibs:~/Desktop $ as -o asml8_2.o asml8_2.s
pi@gibsgibs:~/Desktop $ gcc -o asml8_2 asml8_2.o
pi@gibsgibs:~/Desktop $ ./asml8_2
pi@gibsgibs:~/Desktop $ ./asml8_2 ; echo $?
17
pi@gibsgibs:~/Desktop $ (gdb) start
(gdb) start
Temporary breakpoint 1 at 0x103e8
Starting program: /home/pi/Desktop/asml8_2

Temporary breakpoint 1, 0x000103e8 in main ()
(gdb) disas
Dump of assembler code for function main:
=> 0x000103e8 <+0>:      mov     r0, #1
    0x000103ec <+4>:      mov     r1, #1
    0x000103f0 <+8>:      mov     r3, #0
    0x000103f4 <+12>:     ldr     r4, [pc, #40] ; 0x10424 <addr_array>
    0x000103f8 <+16>:     str     r0, [r4], #4
    0x000103fc <+20>:     str     r1, [r4], #4
End of assembler dump.
(gdb) break end
Breakpoint 2 at 0x10420
(gdb) continue
Continuing.

Breakpoint 2, 0x00010420 in end ()
(gdb) info registers r0 r1 r2 r3 r4
r0             0x12511  75025
r1             0xb520   46368
r2             0x12511  75025
r3             0x17     23
r4             0x20624  132644
(gdb) p (int[25])array
$1 = {1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597,
      2584, 4181, 6765, 10946, 17711, 28657, 46368, 75025}
(gdb)
```

Note: Each of the interactions are two separate pictures cropped to reduce space.