## OS Project 3 Report Çerağ Oğuztüzün 21704147

# **MAKEFILE CODE:** all: app module1.0 module2.0 module3.0 module1.o: module1.c gcc -c -no-pie module1.c module2.o: module2.c gcc -c -no-pie module2.c module3.o: module3.c gcc -c -no-pie module3.c app: module1.0 module2.0 module3.0 gcc -static -g -Wall -no-pie -o app module1.o module2.o module3.o **MODULE1.C CODE:** #include <stdio.h> #include <stdlib.h> #include <unistd.h> #include <string.h> #include <sys/mman.h> // main fnc int main(void) { // data accessed from module2.c and module3.c extern int a [4096]; extern int b[32]; extern long\* c; extern long\* d; extern void\* mainPtr; extern long\* pointerToSharedMemory; extern int recursiveFnc(int i); extern void waitForUserInput();

```
// STEP 1 printf("---STEP 1---\n");
```

```
printf("%s%lx\n", "Address of main fnc: ",(void *) main);
     printf("%s%lx\n", "Address of uninitialized array: ",(void *) a);
     printf("%s%lx\n", "Address of initialized array: ",(void *) b);
     printf("%s%lx\n", "Address of user input fnc: ",(void *)
waitForUserInput);
     printf("%s%lx\n", "Address of printf: ",(void *) printf);
      printf("%s%d\n", "PID: ",getpid());
      waitForUserInput();
      // STEP 2
     printf("---STEP 2---\n");
      c = malloc(125000);
      d = malloc(125000);
      printf("%s%lx\n", "Address of dynamically allocated data 1: ",(void *) c);
     printf("%s%lx\n", "Address of dynamically allocated data 2: ",(void *) d);
      waitForUserInput();
      // STEP 3
     printf("---STEP 3---\n");
     recursiveFnc(12500);
      printf("%s%lx\n", "Address of main fnc: ",(void *) main);
      printf("%s%lx\n", "Address of uninitialized array: ",(void *) a);
     printf("%s%lx\n", "Address of initialized array: ",(void *) b);
      printf("%s%lx\n", "Address of user input fnc: ",(void *)
waitForUserInput);
     printf("%s%lx\n", "Address of printf: ",(void *) printf);
     printf("%s%lx\n", "Address of dynamically allocated data 1: ",(void *) c);
     printf("%s%lx\n", "Address of dynamically allocated data 2: ",(void *) d);
      printf("%s%lx\n", "Address of recursive fnc: ",(void *) recursiveFnc);
     waitForUserInput();
      // STEP 4
      printf("---STEP 4---\n");
      pointerToSharedMemory = mmap(NULL, 250000, PROT_READ |
PROT WRITE, MAP SHARED | MAP ANONYMOUS, 0, 0);
      printf("%s%lx\n", "Address of start address: ",(void *)
pointerToSharedMemory);
      waitForUserInput();
```

```
// STEP 5
     printf("---STEP 5---\n");
     pointerToSharedMemory[0] = 123;
     pointerToSharedMemory[1] = 456;
     pointerToSharedMemory[2] = 789;
     printf("%s%d\n", "data read: ",pointerToSharedMemory[0]);
     printf("%s%d\n", "data read: ",pointerToSharedMemory[1]);
     printf("%s%d\n", "data read: ",pointerToSharedMemory[2]);
     printf("%s%lx\n", "Adrs of data read from memory mapped region: ",
(void *) pointerToSharedMemory[0]);
     printf("%s%lx\n", "Adrs of data read from memory mapped region: ",
(void *) pointerToSharedMemory[1]);
     printf("%s%lx\n", "Adrs of data read from memory mapped region: ",
(void *) pointerToSharedMemory[2]);
     waitForUserInput();
     // STEP 6
     printf("---STEP 6---\n");
     mainPtr = (void *) (4096 * (((long unsigned int) main) / 4096));
     for (int i = 0; i < 4096; i++)
           // address
           printf("%lx \rightarrow \%02x\n", (long unsigned int) (mainPtr + i), ((char *)
(mainPtr))[i]);
           // corresponding content
           //printf("%02x\n", ((char *)(mainPtr))[i]);
      }
     waitForUserInput();
     printf("end of program\n");
     return 0;
MODULE2.C CODE:
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
```

```
//here we have variables
int a[4096];
int b[32] = \{1\};
long* c;
long* d;
long* pointerToSharedMemory;
void* mainPtr;
MODULE3.C CODE:
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
//here we have functions
void waitForUserInput()
     char input = getchar();
     while(input != 'n')
           input = getchar();
}
int recursiveFnc(int i)
 if(i \le 0)
   return i;
 return recursiveFnc(i - 1);
```

}

## STEP 1:

```
oguztuzun@oguztuzun-Lenovo-ideapad-330-17IKB:~/Desktop/sem2/05/osp3$ ./app
  -STEP 1--
Address of main fnc: 400657
Address of uninitialized array: 601100
Address of initialized array: 601060
Address of user input fnc: 400776
Address of
           printf: 7f4833296e80
PID: 23380
pmap -x 23380
23380:
          ./app
                                       Dirty Mode
                    Kbytes
Address
                                RSS
                                                     Mapping
                                           4 г-х-- app
0000000000400000
                         0
                                  0
                                           0 г-х-- app
0000000000400000
                                 4
                                           4 r---- app
0000000000600000
                         4
0000000000600000
                         0
                                 0
                                           0 г---- app
0000000000601000
                         4
                                  4
                                           4 rw---
                                                    арр
                                  0
                                           0 гw--- арр
0000000000601000
                         0
                                  0
                                           0 rw---
0000000000602000
                        16
                                                         anon ]
                                                       [ anon ]
[ anon ]
[ anon ]
0000000000602000
                                  0
                                          0 rw---
                         0
                      132 4
0 0
1948 1256
                                          4 rw---
00000000018fa000
                               0 r-x-- libc-2.27.so
0 ---- libc-2.27.so
0 ---- libc-2.27.so
16 16 r--- libc-2.27.so
0 0 r--- libc-2.27.so
0 0 r--- libc-2.27.so
10 10 r--- libc-2.27.so
11 12 12 rw--
11 12 12 rw--
00000000018fa000
00007f4833232000
                        0 0
048 0
00007f4833232000
                      2048
00007f4833419000
                        16
0
00007f4833419000
00007f4833619000
00007f4833619000
00007f483361d000
                         8
                        0
16
0
00007f483361d000
00007f483361f000
00007f483361f000
                                156
                       156
                                          0 г-х-- ld-2.27.so
00007f4833623000
                                150
0
8
0
4
0
4
0
4
00007f4833623000
                         0
                                           0 г-х-- ld-2.27.so
                                                       [ anon
00007f483382b000
                         8
                                           8 rw---
                        0
4
0
4
0
4
0
32
                                           0 rw---
00007f483382b000
                                                         anon
                                           4 r---- ld-2.27.so
00007f483384a000
00007f483384a000
                                           0 r---- ld-2.27.so
00007f483384b000
                                           4 rw--- ld-2.27.so
                                           0 rw--- ld-2.27.so
00007f483384b000
00007f483384c000
                                           4 rw---
                                                       [ anon
                                  0
12
                                                       [ anon ]
[ stack
[ stack
00007f483384c000
                                           0 rw---
                       132
                                                        stack ]
00007ffea0a5e000
                                 12
                                          12 rw---
                                          0 rw---
00007ffea0a5e000
                                  0
                        0 4
00007ffea0b99000
                                  0
                                           Θ Γ----
                                                         anon
00007ffea0b99000
                                  0
                                           0 г----
                                                         anon
00007ffea0b9c000
                                  4
                                           0 r-x--
                                                       [ anon
[ anon
00007ffea0b9c000
                         0
                                  0
                                           0 r-x--
                                  0
fffffffff600000
                         4
                                           0 --x--
                                                         anon
                         0
fffffffff600000
                                  0
                                           0 --x--
                                                       [ anon ]
total kB
                      4524
                               1500
```

#### **Discussion:**

I can see the virtual memory starting addresses in the first column of pmap output, which are corresponding to the addresses I have found as the addresses of the data and functions used in the program. In the second column we can see virtual size of each mapping, which correspond to the data sizes used in my program being 4Kbytes and 16Kbytes, and It can be seen that these values are mapped to app, which is the name of the program. The printf function used in the program is mapped to libc.

#### obidump -dx app

app: file format elf64-x86-64

app

architecture: i386:x86-64, flags 0x00000112:

EXEC\_P, HAS\_SYMS, D\_PAGED start address 0x00000000000400570

#### Program Header:

INTERP off 0x000000000000238 vaddr 0x000000000400238 paddr 0x000000000400238 align 2\*\*0 filesz 0x0000000000001c memsz 0x00000000001c flags r--

LOAD off 0x00000000000000000 vaddr 0x000000000400000 paddr 0x000000000400000 align 2\*\*21 filesz 0x00000000000000 memsz 0x00000000000000 flags r-x

DYNAMIC off 0x00000000000018 vaddr 0x00000000000018 paddr 0x000000000000018 align 2\*\*3 filesz 0x000000000001d0 memsz 0x00000000001d0 flags rw-

NOTE off 0x000000000000254 vaddr 0x000000000400254 paddr 0x0000000000400254 align 2\*\*2 filesz 0x00000000000044 memsz 0x00000000000044 flags r--

EH\_FRAME off 0x00000000000000000ec vaddr 0x00000000004008ec paddr 0x00000000000004008ec align 2\*\*2 filesz 0x0000000000004c memsz 0x0000000000004c flags r--

STACK off 0x00000000000000000 vaddr 0x0000000000000 paddr 0x0000000000000 align 2\*\*4 filesz 0x000000000000000 memsz 0x0000000000000 flags rw-

#### **Dynamic Section:**

NEEDED libc.so.6

INIT 0x00000000004004e8 0x0000000000400814 **FINI** 0x0000000000600e08 INIT\_ARRAY INIT\_ARRAYSZ 0x0000000000000008 FINI\_ARRAY 0x0000000000600e10 FINI ARRAYSZ 0x0000000000000008 0x0000000000400298 GNU\_HASH **STRTAB** 0x0000000000400398 0x000000000004002c0 **SYMTAB** 0x0000000000000005b STRSZ 0x0000000000000018 **SYMENT DEBUG** 0x0000000000000000PLTGOT 0x0000000000601000 **PLTRELSZ** 0x00000000000000078 **PLTREL** 0x00000000000000007 0x0000000000400470 **JMPREL RELA** 0x0000000000400428 0x00000000000000048 **RELASZ** 0x0000000000000018 RELAENT VERNEED 0x0000000000400408 VERNEEDNUM 0x0000000000000001**VERSYM** 0x00000000004003f4

#### Version References:

required from libc.so.6:

0x09691a75 0x00 02 GLIBC 2.2.5

#### Sections:

Idx Name Size VMA LMA File off Algn

0.interp 0000001c 0000000000400238 000000000400238 00000238 2\*\*0

CONTENTS, ALLOC, LOAD, READONLY, DATA

1 .note.ABI-tag 00000020 0000000000400254 0000000000400254 00000254 2\*\*2 CONTENTS, ALLOC, LOAD, READONLY, DATA

CONTENTS, ALLOC, LOAD, READONLY, DATA

2 .note.gnu.build-id 00000024 0000000000400274 000000000400274 00000274 2\*\*2 CONTENTS, ALLOC, LOAD, READONLY, DATA

3 .gnu.hash 00000024 0000000000400298 000000000400298 00000298 2\*\*3 CONTENTS, ALLOC, LOAD, READONLY, DATA

```
000000d8 0000000004002c0 0000000004002c0 000002c0 2**3
 4 .dvnsvm
        CONTENTS, ALLOC, LOAD, READONLY, DATA
           0000005b 000000000400398 000000000400398 00000398 2**0
 5 .dvnstr
        CONTENTS, ALLOC, LOAD, READONLY, DATA
 6.gnu.version 00000012 00000000004003f4 0000000004003f4 000003f4 2**1
        CONTENTS, ALLOC, LOAD, READONLY, DATA
 7 .gnu.version r 00000020 000000000040408 0000000000400408 00000408 2**3
        CONTENTS, ALLOC, LOAD, READONLY, DATA
           00000048 000000000400428 000000000400428 00000428 2**3
        CONTENTS, ALLOC, LOAD, READONLY, DATA
         00000078 000000000400470 000000000400470 00000470 2**3
 9 .rela.plt
        CONTENTS, ALLOC, LOAD, READONLY, DATA
10 .init
          00000017 0000000004004e8 0000000004004e8 000004e8 2**2
        CONTENTS, ALLOC, LOAD, READONLY, CODE
          00000060 000000000400500 000000000400500 00000500 2**4
11 .plt
        CONTENTS, ALLOC, LOAD, READONLY, CODE
12 .plt.got
           00000008 000000000400560 000000000400560 00000560 2**3
        CONTENTS, ALLOC, LOAD, READONLY, CODE
          000002a2 000000000400570 000000000400570 00000570 2**4
13 .text
        CONTENTS, ALLOC, LOAD, READONLY, CODE
          00000009 0000000000400814 0000000000400814 00000814 2**2
14 .fini
        CONTENTS, ALLOC, LOAD, READONLY, CODE
           000000c9 000000000400820 000000000400820 00000820 2**3
15 .rodata
        CONTENTS, ALLOC, LOAD, READONLY, DATA
16.eh frame hdr 0000004c 0000000004008ec 0000000004008ec 000008ec 2**2
        CONTENTS, ALLOC, LOAD, READONLY, DATA
17 .eh frame
            00000138 000000000400938 000000000400938 00000938 2**3
        CONTENTS, ALLOC, LOAD, READONLY, DATA
CONTENTS, ALLOC, LOAD, DATA
19.fini_array 00000008 00000000000600e10 0000000000600e10 00000e10 2**3
        CONTENTS, ALLOC, LOAD, DATA
            000001d0 000000000600e18 0000000000600e18 00000e18 2**3
20 .dynamic
        CONTENTS, ALLOC, LOAD, DATA
          00000018 000000000600fe8 0000000000600fe8 00000fe8 2**3
21 .got
        CONTENTS, ALLOC, LOAD, DATA
           00000040 000000000601000 000000000601000 00001000 2**3
22 .got.plt
        CONTENTS, ALLOC, LOAD, DATA
          000000a0 000000000601040 000000000601040 00001040 2**5
23 .data
        CONTENTS, ALLOC, LOAD, DATA
24 .bss
          00004020 00000000006010e0 00000000006010e0 000010e0 2**5
        ALLOC
             00000029 00000000000000 00000000000000 000010e0 2**0
25 .comment
        CONTENTS, READONLY
SYMBOL TABLE:
                  d .interp 0000000000000000
00000000004002381
                                                 .interp
                  d .note.ABI-tag
                                  0000000000000000
00000000004002541
                                                        .note.ABI-tag
                  d .note.gnu.build-id00000000000000000
00000000004002741
                                                        .note.gnu.build-id
00000000004002981
                  d .gnu.hash
                                  0000000000000000
                                                        .gnu.hash
00000000004002c0 1
                  d .dvnsvm 0000000000000000
                                                 .dynsym
00000000004003981
                  d .dynstr 00000000000000000
                                                 .dynstr
                                  00000000000000000
                                                        .gnu.version
00000000004003f41
                 d .gnu.version
00000000004004081
                 d .gnu.version_r
                                  00000000000000000
                                                        .gnu.version_r
00000000004004281
                 .rela.dyn
00000000004004701
                  d .rela.plt 00000000000000000
                                                 .rela.plt
00000000004004e81
                           0000000000000000
                 d .init
                                                 .init
00000000004005001
                           0000000000000000
                  d .plt
                                                 .plt
                  00000000004005601
                                                 .plt.got
00000000004005701
                  d .text
                           00000000000000000
                                                 .text
                           00000000000000000
00000000004008141
                  d .fini
                                                 .fini
00000000004008201
                 d .rodata 0000000000000000
                                                 .rodata
                                  0000000000000000
00000000004008ec l d .eh_frame_hdr
                                                        .eh_frame_hdr
```

0000000000000000

.eh\_frame

0000000000400938 l d .eh\_frame

```
0000000000600e08 l d .init array
                                     0000000000000000
                                                              .init array
0000000000600e10 l
                    d .fini array
                                     0000000000000000
                                                              .fini array
                    0000000000600e18 l
                                                       .dvnamic
                   d .got
                              00000000000000000
0000000000600fe8 1
                                                      .got
00000000006010001
                    d .got.plt
                             00000000000000000
                                                      .got.plt
0000000000601040 l
                    d .data
                              0000000000000000
                                                      .data
00000000006010e0 l
                              0000000000000000
                    d .bss
                                                      .bss
0000000000000000001
                    d .comment
                                     00000000000000000
                                                              .comment
000000000000000000001
                    df *ABS*
                             0000000000000000
                                                      crtstuff.c
00000000004005b0 1
                              00000000000000000
                    F.text
                                                      deregister_tm_clones
00000000004005e0 l
                              0000000000000000
                    F.text
                                                      register_tm_clones
00000000004006201
                              __do_global_dtors_aux
                    F.text
                                                      completed.7698
00000000006010e0 l
                    O.bss
                              0000000000000001
0000000000600e10 l
                    O .fini array
                                     0000000000000000
                                                               _do_global_dtors_aux_fini_array_entry
00000000004006501
                    F.text
                              0000000000000000
                                                      frame dummy
0000000000600e08 1
                    O .init array
                                     0000000000000000
                                                               frame dummy init array entry
000000000000000000001
                    df *ABS* 0000000000000000
                                                      module1.c
0000000000000000001
                    df *ABS* 0000000000000000
                                                      module2.c
0000000000000000000001
                    df *ABS* 0000000000000000
                                                      module3.c
000000000000000000001
                    df *ABS* 0000000000000000
                                                      crtstuff.c
                                     0000000000000000
0000000000400a6c1
                    O .eh frame
                                                               FRAME END
000000000000000000001
                    df *ABS* 0000000000000000
0000000000600e10 l
                     .init array
                                     0000000000000000
                                                                init array end
                    O .dynamic
0000000000600e18 l
                                     0000000000000000
                                                              DYNAMIC
                                     00000000000000000
0000000000600e08 1
                     .init array
                                                              __init_array_start
00000000004008ec 1
                     .eh_frame_hdr
                                     0000000000000000
                                                                _GNU_EH_FRAME_HDR
00000000006010001
                    O.got.plt 00000000000000000
                                                       _GLOBAL_OFFSET_TABLE_
0000000000400810 g
                     F.text
                              00000000000000002
                                                        _libc_csu_fini
                              data start
0000000000601040 w
                       .data
                    F*UND* 00000000000000000
0000000000000000
                                                      puts@@GLIBC_2.2.5
00000000000601060 g
                     O .data
                              0000000000000000000
0000000000000000
                    F*UND* 0000000000000000
                                                      getpid@@GLIBC_2.2.5
                                                      _edata
000000000006010e0 g
                      .data
                              00000000000000000
                                                      _fini
0000000000400814 g
                     F.fini
                              00000000000000000
00000000000000000
                    F*UND* 0000000000000000
                                                      system@@GLIBC 2.2.5
                    F*UND* 0000000000000000
0000000000000000
                                                      printf@@GLIBC_2.2.5
0000000000000000
                    F*UND* 0000000000000000
                                                        libc start main@@GLIBC 2.2.5
00000000000601040 g
                      .data
                              0000000000000000
                                                        _data_start
0000000000000000
                    F *UND* 0000000000000000
                                                      getchar@@GLIBC 2.2.5
000000000000000 w
                       *UND* 0000000000000000
                                                        _gmon_start_
0000000000601048 g
                     O .data
                              0000000000000000
                                                       .hidden dso handle
00000000000400820 g
                     O.rodata 0000000000000004
                                                      _IO_stdin_used
00000000004007a0 g
                     F.text
                              00000000000000065
                                                       __libc_csu_init
                              00000000000000000
0000000000605100 g
                      .bss
                                                       end
000000000004005a0 g
                     F .text
                              00000000000000002
                                                      .hidden _dl_relocate_static_pie
0000000000400570 g
                     F.text
                              000000000000002b
                                                       start
00000000000601100 g
                              0000000000004000
000000000006010e0 g
                      .bss
                              000000000000000
                                                        _bss_start
00000000000400657 g
                     F.text
                              000000000000011f
                                                      sprintf@@GLIBC_2.2.5
0000000000000000
                    F *UND*
                             0000000000000000
000000000006010e0 g
                              .hidden __TMC_END_
                    O .data
00000000000400776 g
                     F.text
                              00000000000000023
                                                      waitForUserInput
00000000004004e8 g
                    F.init
                              00000000000000000
                                                       init
```

#### Disassembly of section .init:

4004ec: 48 8b 05 05 0b 20 00 mov 0x200b05(%rip),%rax # 600ff8 < \_\_gmon\_start\_\_>

4004f3: 48 85 c0 test %rax,%rax

4004f6: 74 02 je 4004fa <\_init+0x12>

```
callq *%rax
 4004f8
               ff d0
 4004fa:
               48 83 c4 08
                                       add
                                            $0x8,%rsp
 4004fe:
               c3
                                reta
Disassembly of section .plt:
0000000000400500 <.plt>:
 400500:
               ff 35 02 0b 20 00
                                       pushq 0x200b02(%rip)
                                                                 # 601008
< GLOBAL OFFSET TABLE +0x8>
 400506:
               ff 25 04 0b 20 00
                                       jmpq *0x200b04(%rip)
                                                                   # 601010
<_GLOBAL_OFFSET_TABLE_+0x10>
               0f 1f 40 00
                               nopl 0x0(%rax)
 40050c:
0000000000400510 <puts@plt>:
                                       jmpq *0x200b02(%rip)
 400510:
               ff 25 02 0b 20 00
                                                                  # 601018 <puts@GLIBC_2.2.5>
 400516:
               68 00 00 00 00
                                       pushq $0x0
 40051b:
               e9 e0 ff ff ff
                               jmpq 400500 <.plt>
0000000000400520 <getpid@plt>:
               ff 25 fa 0a 20 00
                                       jmpq *0x200afa(%rip)
                                                                  # 601020 <getpid@GLIBC_2.2.5>
 400520:
               68 01 00 00 00
 400526:
                                       pushq $0x1
                               impq 400500 <.plt>
 40052b:
               e9 d0 ff ff ff
0000000000400530 <system@plt>:
 400530:
               ff 25 f2 0a 20 00
                                       jmpq *0x200af2(%rip)
                                                                  # 601028 <system@GLIBC_2.2.5>
                                       pushq $0x2
 400536:
               68 02 00 00 00
                               jmpq 400500 <.plt>
 40053b:
               e9 c0 ff ff ff
0000000000400540 <getchar@plt>:
 400540:
               ff 25 ea 0a 20 00
                                       jmpq *0x200aea(%rip)
                                                                  # 601030 <getchar@GLIBC_2.2.5>
 400546:
               68 03 00 00 00
                                       pushq $0x3
 40054b:
               e9 b0 ff ff ff
                               jmpq 400500 <.plt>
000000000400550 <sprintf@plt>:
               ff 25 e2 0a 20 00
                                                                  # 601038 <sprintf@GLIBC_2.2.5>
 400550:
                                       jmpq *0x200ae2(%rip)
               68 04 00 00 00
                                       pushq $0x4
 400556:
 40055b:
               e9 a0 ff ff ff
                               impq 400500 <.plt>
Disassembly of section .plt.got:
0000000000400560 <printf@plt>:
                                       jmpq *0x200a82(%rip)
 400560:
               ff 25 82 0a 20 00
                                                                  # 600fe8 <printf@GLIBC 2.2.5>
                               xchg
 400566:
               66 90
                                     %ax,%ax
Disassembly of section .text:
0000000000400570 < start>:
 400570:
               31 ed
                                     %ebp,%ebp
                                xor
 400572:
               49 89 d1
                                     %rdx,%r9
                                mov
 400575:
               5e
                                pop
                                     %rsi
 400576:
               48 89 e2
                                mov
                                      %rsp,%rdx
 400579:
               48 83 e4 f0
                                and
                                     $0xffffffffffff0,%rsp
 40057d:
               50
                                push %rax
 40057e:
               54
                               push %rsp
               49 c7 c0 10 08 40 00
 40057f:
                                       mov
                                              $0x400810,%r8
               48 c7 c1 a0 07 40 00
 400586:
                                       mov
                                              $0x4007a0,%rcx
 40058d:
                48 c7 c7 57 06 40 00
                                              $0x400657,%rdi
                                       mov
 400594:
               ff 15 56 0a 20 00
                                       callq *0x200a56(%rip)
                                                                 # 600ff0 <__libc_start_main@GLIBC_2.2.5>
 40059a:
               f4
                               hlt
 40059b:
               0f 1f 44 00 00
                                       nopl 0x0(\%rax,\%rax,1)
0000000004005a0 <_dl_relocate_static_pie>:
```

4005a0:

f3 c3

repz retq

```
4005a2:
                66 2e 0f 1f 84 00 00
                                        nopw %cs:0x0(%rax,%rax,1)
 4005a9:
                00 00 00
 4005ac:
                0f 1f 40 00
                                nopl 0x0(%rax)
0000000004005b0 <deregister_tm_clones>:
 4005b0:
                55
                                push %rbp
 4005b1:
                b8 e0 10 60 00
                                              $0x6010e0,%eax
                                        mov
 4005b6:
                48 3d e0 10 60 00
                                        cmp
                                              $0x6010e0,%rax
                48 89 e5
 4005bc:
                                      %rsp,%rbp
                                mov
                74 17
                                    4005d8 <deregister_tm_clones+0x28>
 4005bf:
                                je
 4005c1:
                ь8 00 00 00 00
                                        mov $0x0,%eax
                48 85 c0
                                test %rax,%rax
 4005c6:
 4005c9:
                74 0d
                                je
                                    4005d8 <deregister_tm_clones+0x28>
 4005cb:
                5d
                                pop
                                      %rbp
 4005cc:
                bf e0 10 60 00
                                        mov
                                              $0x6010e0,%edi
 4005d1:
                ff e0
                                      *%rax
                                impg
 4005d3:
                0f 1f 44 00 00
                                        nopl 0x0(\%rax,\%rax,1)
 4005d8:
                5d
                                      %rbp
                                pop
 4005d9:
                c3
                                retq
                66 0f 1f 44 00 00
 4005da:
                                        nopw 0x0(\%rax,\%rax,1)
0000000004005e0 <register_tm_clones>:
 4005e0:
                be e0 10 60 00
                                              $0x6010e0,%esi
                                        mov
                                push %rbp
 4005e5:
                55
                                        sub
 4005e6:
                48 81 ee e0 10 60 00
                                             $0x6010e0,%rsi
 4005ed:
                48 89 e5
                                mov
                                      %rsp,%rbp
 4005f0:
                48 c1 fe 03
                                     $0x3,%rsi
                                sar
                48 89 f0
 4005f4:
                                mov
                                      %rsi,%rax
                48 c1 e8 3f
 4005f7:
                                shr
                                     $0x3f,%rax
 4005fb:
                48 01 c6
                                add
                                     %rax,%rsi
 4005fe:
                48 d1 fe
                                     %rsi
                                sar
 400601:
                74 15
                                    400618 < register tm clones + 0x38 >
                                je
                ь8 00 00 00 00
                                        mov $0x0,%eax
 400603:
 400608:
                48 85 c0
                                test %rax,%rax
                74 0b
                                    400618 <register_tm_clones+0x38>
 40060b:
                                je
                                     %rbp
 40060d:
                5d
                                pop
                bf e0 10 60 00
 40060e:
                                        mov
                                              $0x6010e0,%edi
                                      *%rax
 400613:
                ff e0
                                jmpq
 400615:
                0f 1f 00
                                nopl
                                      (%rax)
 400618:
                5d
                                      %rbp
                                pop
 400619:
                c3
                                retq
                66 0f 1f 44 00 00
 40061a:
                                        nopw 0x0(\%rax,\%rax,1)
000000000400620 < __do_global_dtors_aux>:
 400620:
                80 3d b9 0a 20 00 00
                                        cmpb $0x0,0x200ab9(%rip)
                                                                        # 6010e0 <__TMC_END__>
                75 17
                                     400640 < __do_global_dtors_aux+0x20>
 400627:
                                jne
 400629:
                55
                                push %rbp
 40062a:
                48 89 e5
                                mov
                                      %rsp,%rbp
 40062d:
                e8 7e ff ff ff
                                callq 4005b0 <deregister tm clones>
                c6 05 a7 0a 20 00 01
                                                                        # 6010e0 <__TMC_END__>
 400632:
                                        movb $0x1,0x200aa7(%rip)
 400639:
                5d
                                      %rbp
                                pop
 40063a:
                c3
                                retq
 40063b:
                0f 1f 44 00 00
                                        nopl 0x0(\%rax,\%rax,1)
 400640:
                f3 c3
                                repz retq
                0f 1f 40 00
 400642:
                                nopl 0x0(%rax)
                66 2e 0f 1f 84 00 00
                                        nopw %cs:0x0(%rax,%rax,1)
 400646:
 40064d:
                00 00 00
000000000400650 <frame_dummy>:
                                      %rbp
 400650:
                55
                                push
 400651:
                48 89 e5
                                      %rsp,%rbp
                                mov
 400654:
                5d
                                      %rbp
                                pop
 400655:
                                      4005e0 <register_tm_clones>
                eb 89
                                jmp
```

```
0000000000400657 <main>:
 400657:
                55
                                 push %rbp
 400658:
                48 89 e5
                                 mov
                                       %rsp,%rbp
 40065b:
                48 8d 3d c6 01 00 00
                                             0x1c6(%rip),%rdi
                                                                   # 400828 < IO stdin used+0x8>
                                         lea
 400662:
                e8 a9 fe ff ff
                                 callg
                                      400510 <puts@plt>
 400667:
                48 8d 15 e9 ff ff ff
                                         lea
                                              -0x17(%rip),%rdx
                                                                   # 400657 <main>
 40066e:
                48 8d 35 c0 01 00 00
                                         lea
                                              0x1c0(%rip),%rsi
                                                                   # 400835 < IO stdin used+0x15>
                                                                   # 40084b <_IO_stdin_used+0x2b>
 400675:
                48 8d 3d cf 01 00 00
                                         lea
                                              0x1cf(%rip),%rdi
                ь8 00 00 00 00
                                               $0x0,%eax
 40067c:
                                         mov
 400681:
                e8 da fe ff ff
                                callq 400560 <printf@plt>
                48 8d 15 73 0a 20 00
                                              0x200a73(%rip),%rdx
                                                                       # 601100 <a>
 400686:
                                         lea
                                                                   # 400858 <_IO_stdin_used+0x38>
 40068d:
                48 8d 35 c4 01 00 00
                                         lea
                                              0x1c4(%rip),%rsi
 400694:
                48 8d 3d b0 01 00 00
                                         lea
                                              0x1b0(%rip),%rdi
                                                                   # 40084b < IO stdin used+0x2b>
 40069b:
                ь8 00 00 00 00
                                         mov
                                               $0x0,%eax
                                callq 400560 <printf@plt>
 4006a0:
                e8 bb fe ff ff
 4006a5:
                48 8d 15 b4 09 20 00
                                              0x2009b4(%rip),%rdx
                                                                       # 601060 <b>
                                         lea
                48 8d 35 cd 01 00 00
 4006ac:
                                         lea
                                              0x1cd(%rip),%rsi
                                                                   # 400880 <_IO_stdin_used+0x60>
                48 8d 3d 91 01 00 00
                                              0x191(%rip),%rdi
                                                                   # 40084b < IO stdin used+0x2b>
 4006b3:
                                         lea
                ь8 00 00 00 00
                                               $0x0,%eax
 4006ba:
                                         mov
                                 callq 400560 <printf@plt>
 4006bf:
                e8 9c fe ff ff
 4006c4:
                48 c7 c0 76 07 40 00
                                         mov
                                               $0x400776,%rax
 4006cb:
                48 89 c2
                                       %rax,%rdx
                                 mov
                48 8d 35 ca 01 00 00
                                              0x1ca(%rip),%rsi
                                                                   # 40089f < IO stdin used+0x7f>
 4006ce:
                                         lea
 4006d5:
                48 8d 3d 6f 01 00 00
                                         lea
                                              0x16f(%rip),%rdi
                                                                   # 40084b <_IO_stdin_used+0x2b>
 4006dc:
                b8 00 00 00 00
                                         mov
                                               $0x0,%eax
 4006e1:
                e8 7a fe ff ff
                                 callq 400560 <printf@plt>
                48 8b 05 fb 08 20 00
                                               0x2008fb(%rip),%rax
                                                                        # 600fe8 <printf@GLIBC_2.2.5>
 4006e6:
                                         mov
 4006ed:
                48 89 c2
                                 mov
                                       %rax,%rdx
 4006f0:
                48 8d 35 c4 01 00 00
                                         lea
                                              0x1c4(%rip),%rsi
                                                                   # 4008bb <_IO_stdin_used+0x9b>
 4006f7:
                48 8d 3d 4d 01 00 00
                                         lea
                                              0x14d(%rip),%rdi
                                                                   # 40084b <_IO_stdin_used+0x2b>
                ь8 00 00 00 00
                                               $0x0,%eax
 4006fe:
                                         mov
                                 callq 400560 <printf@plt>
 400703:
                e8 58 fe ff ff
 400708:
                e8 13 fe ff ff
                                 callq 400520 <getpid@plt>
                                       %eax,%edx
                89 c2
 40070d:
                                 mov
                                                                   # 4008cf <_IO_stdin_used+0xaf>
 40070f:
                48 8d 35 b9 01 00 00
                                         lea
                                              0x1b9(%rip),%rsi
                                                                   # 4008d5 < IO stdin used+0xb5>
 400716:
                48 8d 3d b8 01 00 00
                                         lea
                                              0x1b8(%rip),%rdi
 40071d:
                b8 00 00 00 00
                                         mov
                                               $0x0,%eax
 400722:
                e8 39 fe ff ff
                                 callq 400560 <printf@plt>
 400727:
                e8 f4 fd ff ff
                                 callq 400520 <getpid@plt>
 40072c:
                89 c1
                                       %eax,%ecx
                                 mov
                48 8d 15 a6 01 00 00
 40072e:
                                         lea
                                              0x1a6(%rip),%rdx
                                                                    # 4008db < IO stdin used+0xbb>
 400735:
                48 8d 35 a8 01 00 00
                                              0x1a8(%rip),%rsi
                                                                   # 4008e4 <_IO_stdin_used+0xc4>
                                         lea
 40073c:
                                              0x20091d(%rip),%rdi
                48 8d 3d 1d 09 20 00
                                                                       # 601060 <b>
                                         lea
 400743:
                b8 00 00 00 00
                                               $0x0,%eax
                                         mov
 400748:
                e8 03 fe ff ff
                                 callq 400550 <sprintf@plt>
 40074d:
                48 8d 3d 0c 09 20 00
                                         lea 0x20090c(%rip),%rdi
                                                                       # 601060 <b>
 400754:
                e8 b7 fd ff ff
                                 callq 400510 <puts@plt>
                                                                       # 601060 <b>
 400759:
                48 8d 3d 00 09 20 00
                                         lea
                                              0x200900(%rip),%rdi
 400760:
                e8 cb fd ff ff
                                 callq 400530 <system@plt>
 400765:
                ь8 00 00 00 00
                                         mov
                                               $0x0,%eax
 40076a:
                e8 07 00 00 00
                                         callq 400776 <waitForUserInput>
 40076f:
                ь8 00 00 00 00
                                         mov
                                               $0x0,%eax
 400774:
                5d
                                      %rbp
                                 pop
 400775:
                c3
                                 retq
0000000000400776 <waitForUserInput>:
 400776:
                                 push
                55
                                       %rbp
                48 89 e5
 400777:
                                       %rsp,%rbp
                                 mov
 40077a:
                48 83 ec 10
                                         sub $0x10,%rsp
                e8 bd fd ff ff
 40077e:
                                 callq 400540 <getchar@plt>
 400783:
                88 45 ff
                                       %al,-0x1(%rbp)
                                 mov
 400786:
                eb 08
                                      400790 <waitForUserInput+0x1a>
                                 jmp
```

```
400788:
                e8 b3 fd ff ff
                                callq 400540 <getchar@plt>
 40078d:
                88 45 ff
                                mov
                                      %al,-0x1(%rbp)
 400790:
                80 7d ff 6e
                                cmpb $0x6e,-0x1(%rbp)
 400794:
                75 f2
                                jne
                                    400788 <waitForUserInput+0x12>
 400796:
                90
                                nop
 400797:
                c9
                                leaveg
 400798:
                с3
                                retq
                0f 1f 80 00 00 00 00
 400799:
                                        nopl 0x0(%rax)
0000000004007a0 <__libc_csu_init>:
                41 57
                                push %r15
 4007a0:
 4007a2:
                41 56
                                      %r14
                                push
                                      %rdx,%r15
 4007a4:
                49 89 d7
                                mov
 4007a7:
                41 55
                                push
                                      %r13
 4007a9:
                41 54
                                push
                                      %r12
 4007ab:
                4c 8d 25 56 06 20 00
                                        lea
                                             0x200656(%rip),%r12
                                                                       # 600e08
<__frame_dummy_init_array_entry>
 4007b2:
                                push %rbp
                55
 4007b3:
                48 8d 2d 56 06 20 00
                                        lea
                                             0x200656(%rip),%rbp
                                                                       # 600e10 <__init_array_end>
 4007ba:
                53
                                      %rbx
                                push
                                      %edi,%r13d
 4007bb:
                41 89 fd
                                mov
                49 89 f6
 4007be:
                                mov
                                      %rsi,%r14
 4007c1:
                4c 29 e5
                                     %r12,%rbp
                                sub
 4007c4:
                48 83 ec 08
                                        sub $0x8,%rsp
                                sar $0x3,%rbp
 4007c8:
                48 c1 fd 03
 4007cc:
                e8 17 fd ff ff
                                callq 4004e8 <_init>
                                test %rbp,%rbp
 4007d1:
                48 85 ed
                74 20
                                je
                                     4007f6 < \_libc_csu_init+0x56 >
 4007d4:
 4007d6:
                31 db
                                xor
                                     %ebx,%ebx
 4007d8:
                0f 1f 84 00 00 00 00
                                        nopl 0x0(\%rax,\%rax,1)
 4007df:
                00
 4007e0:
                4c 89 fa
                                      %r15,%rdx
                                mov
                4c 89 f6
                                      %r14,%rsi
 4007e3:
                                mov
 4007e6:
                44 89 ef
                                mov
                                      %r13d,%edi
                                callq *(%r12,%rbx,8)
 4007e9:
                41 ff 14 dc
 4007ed:
                48 83 c3 01
                                        add $0x1,%rbx
                                      %rbx,%rbp
 4007f1:
                48 39 dd
                                cmp
 4007f4:
                75 ea
                                jne
                                     4007e0 <__libc_csu_init+0x40>
 4007f6:
                48 83 c4 08
                                        add
                                             $0x8,%rsp
 4007fa:
                5b
                                      %rbx
                                pop
 4007fb:
                5d
                                      %rbp
                                pop
 4007fc:
                41 5c
                                pop
                                      %r12
 4007fe:
                41 5d
                                      %r13
                                pop
 400800:
                41 5e
                                      %r14
                                pop
 400802:
                41 5f
                                      %r15
                                pop
 400804:
                c3
                                retq
 400805:
                90
                                nop
 400806:
                66 2e 0f 1f 84 00 00
                                        nopw %cs:0x0(%rax,%rax,1)
 40080d:
                00 00 00
0000000000400810 < __libc_csu_fini>:
 400810:
                f3 c3
                                repz retq
Disassembly of section .fini:
0000000000400814 <_fini>:
                48 83 ec 08
 400814:
                                        sub
                                              $0x8,%rsp
 400818:
                48 83 c4 08
                                              $0x8,%rsp
                                        add
 40081c:
                c3
                                retq
```

All addresses used in program are highlighted in output. We can see the assembly instructions for implementations of main and userInputWait function. We can also see the usage of data in program. The addresses displayed in pmap output and program output are correlating.

#### objdump -dx module1.o

module1.o: file format elf64-x86-64

module1.o

architecture: i386:x86-64, flags 0x00000011:

HAS\_RELOC, HAS\_SYMS

start address 0x00000000000000000

Sections:					
Idx Name	Size	VMA	LMA	File off Algn	
0 .text	0000011f	00000000	00000000 00	0000000000000 000000	40 2**0
	CONTENTS	S, ALLOC	, LOAD, REL	OC, READONLY, CODE	
1 .data	00000000	0000000	000000000 00	000000000000000 000001	15f 2**0
	CONTENTS	S, ALLOC	, LOAD, DAT	Α	
2 .bss	00000000	00000000	000000000 00	00000000000000 000001	5f 2**0
	ALLOC				
3 .rodata	00000c	1 0000000	000000000 0	00000000000000 00000	160 2**3
	CONTENTS	S, ALLOC	, LOAD, REA	DONLY, DATA	
4 .comme	ent 00000	02a 00000	00000000000	000000000000000 000	00221 2**0
	CONTENTS	S, READC	NLY		
5 .note.G	NU-stack 00	000000 00	000000000000000000000000000000000000000	000000000000000000000000000000000000000	0000024b 2**0
	CONTENTS	S, READC	NLY		
6 .eh_frar	ne 000000	00000 38	0000000000	000000000000000000000000000000000000000	00250 2**3
	CONTENTS	S, ALLOC	, LOAD, REL	OC, READONLY, DATA	
SYMBOL	TABLE:				
000000000	1 0000000	$Af * \Lambda DC *$	00000000	0000000 modulo1 c	

```
00000000000000000001
                              0000000000000000 module1.c
                   df *ABS*
00000000000000000001
                   d .text
                              00000000000000 .text
00000000000000000001
                              000000000000000 .data
                   d .data
0000000000000000001
                              000000000000000 .bss
                   d .bss
00000000000000000001
                   d .rodata
                              000000000000000 .rodata
                   d .note.GNU-stack 00000000000000 .note.GNU-stack
000000000000000001
00000000000000000001
                   d .eh frame 00000000000000 .eh frame
00000000000000000001
                   d .comment 00000000000000 .comment
00000000000000000 g
                              00000000000011f main
                    F.text
0000000000000000
                              *UND*
0000000000000000
                              0000000000000000 puts
                    *UND*
                              000000000000000 printf
0000000000000000
                    *UND*
                              0000000000000000 a
0000000000000000
                    *UND*
                              0000000000000000 b
0000000000000000
                    *UND*
                              0000000000000000 waitForUserInput
0000000000000000
                    *UND*
0000000000000000
                    *UND*
                              0000000000000000 getpid
0000000000000000
                    *UND*
                              0000000000000000 sprintf
0000000000000000
                              0000000000000000 system
                    *UND*
```

Disassembly of section .text:

0000000000000000 <main>:

```
48 89 e5
                         mov
1:
                               %rsp,%rbp
4:
     48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
                                                # b <main+0xb>
                  7: R X86 64 PC32 .rodata-0x4
     e8 00 00 00 00
                         callq 10 < main + 0x10 >
b:
                  c: R X86 64 PLT32 puts-0x4
10:
     48 8d 15 00 00 00 00 lea 0x0(%rip),%rdx
                                                 # 17 < main + 0x17 >
                  13: R X86 64 PC32 main-0x4
     48 8d 35 00 00 00 00 lea 0x0(%rip),%rsi
17:
                                                # 1e <main+0x1e>
                  1a: R_X86_64_PC32 .rodata+0x9
     48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
1e:
                                                # 25 < main + 0x25 >
                  21: R X86 64 PC32 .rodata+0x1f
25:
     ь8 00 00 00 00
                         mov $0x0,%eax
                         callq 2f <main+0x2f>
2a:
     e8 00 00 00 00
                  2b: R_X86_64_PLT32
                                             printf-0x4
2f:
     48 8d 15 00 00 00 00 lea 0x0(%rip),%rdx
                                                 # 36 <main+0x36>
                  32: R_X86_64_PC32 a-0x4
36:
     48 8d 35 00 00 00 00 lea 0x0(%rip),%rsi
                                                # 3d <main+0x3d>
                  39: R X86 64 PC32 .rodata+0x2c
                                                # 44 <main+0x44>
3d:
     48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
                  40: R X86 64 PC32 .rodata+0x1f
     ь8 00 00 00 00
44:
                         mov $0x0,%eax
49:
     e8 00 00 00 00
                         callq 4e <main+0x4e>
                  4a: R_X86_64_PLT32
                                             printf-0x4
     48 8d 15 00 00 00 00 lea 0x0(%rip),%rdx
                                                 # 55 <main+0x55>
4e:
                  51: R X86 64 PC32 b-0x4
55:
     48 8d 35 00 00 00 00 lea 0x0(%rip),%rsi
                                                # 5c <main+0x5c>
                  58: R X86 64 PC32 .rodata+0x54
     48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
                                                # 63 <main+0x63>
5c:
                  5f: R_X86_64_PC32 .rodata+0x1f
     ь8 00 00 00 00
63:
                         mov $0x0,%eax
     e8 00 00 00 00
                         callq 6d <main+0x6d>
68:
                  69: R_X86_64_PLT32
                                             printf-0x4
6d:
     48 8b 05 00 00 00 00 mov 0x0(%rip),%rax
                                                  # 74 <main+0x74>
                  70: R_X86_64_REX_GOTPCRELX
                                                          waitForUserInput-0x4
74:
     48 89 c2
                         mov %rax,%rdx
77:
     48 8d 35 00 00 00 00 lea 0x0(%rip),%rsi
                                                # 7e <main+0x7e>
                  7a: R X86 64 PC32 .rodata+0x73
7e:
     48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
                                                # 85 <main+0x85>
                  81: R_X86_64_PC32 .rodata+0x1f
85:
     ь8 00 00 00 00
                         mov $0x0,%eax
8a:
     e8 00 00 00 00
                         callq 8f <main+0x8f>
                  8b: R X86 64 PLT32
                                             printf-0x4
8f:
     48 8b 05 00 00 00 00 mov 0x0(%rip),%rax
                                                  # 96 <main+0x96>
                  92: R_X86_64_REX_GOTPCRELX
                                                          printf-0x4
96:
     48 89 c2
                         mov %rax,%rdx
99:
     48 8d 35 00 00 00 00 lea 0x0(%rip),%rsi
                                                # a0 <main+0xa0>
                  9c: R_X86_64_PC32 .rodata+0x8f
     48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
                                                # a7 < main + 0xa7 >
a0:
                  a3: R_X86_64_PC32 .rodata+0x1f
a7:
     b8 00 00 00 00 
00
                         mov $0x0,%eax
     e8 00 00 00 00
                         callq b1 <main+0xb1>
ac:
```

0:

55

push %rbp

```
ad: R X86 64 PLT32
                                              printf-0x4
      e8 00 00 00 00
                          callq b6 <main+0xb6>
b1:
                   b2: R X86 64 PLT32
                                              getpid-0x4
b6:
      89 c2
                          mov %eax,%edx
 b8:
      48 8d 35 00 00 00 00 lea 0x0(%rip),%rsi
                                                 # bf <main+0xbf>
                   bb: R X86 64 PC32 .rodata+0xa3
bf:
      48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
                                                  # c6 <main+0xc6>
                   c2: R X86 64 PC32 .rodata+0xa9
 c6:
      b8 00 00 00 00
                          mov $0x0,%eax
      e8 00 00 00 00
                          callq d0 <main+0xd0>
 cb:
                   cc: R_X86_64_PLT32
                                              printf-0x4
 d0:
      e8 00 00 00 00
                          callq d5 <main+0xd5>
                   d1: R X86 64 PLT32
                                              getpid-0x4
 d5:
      89 c1
                          mov
                                %eax,%ecx
      48 8d 15 00 00 00 00 lea 0x0(%rip),%rdx
 d7:
                                                  # de <main+0xde>
                   da: R X86 64 PC32 .rodata+0xaf
 de:
      48 8d 35 00 00 00 00 lea 0x0(%rip),%rsi
                                                 # e5 <main+0xe5>
                   e1: R X86 64 PC32 .rodata+0xb8
      48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
 e5:
                                                  # ec <main+0xec>
                   e8: R X86 64 PC32 b-0x4
      ь8 00 00 00 00
                          mov $0x0,%eax
 ec:
 f1:
      e8 00 00 00 00
                          callq f6 <main+0xf6>
                   f2: R X86 64 PLT32
                                              sprintf-0x4
 f6:
      48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
                                                  # fd <main+0xfd>
                   f9: R_X86_64_PC32 b-0x4
 fd:
      e8 00 00 00 00
                          callq 102 <main+0x102>
                   fe: R X86 64 PLT32
                                              puts-0x4
      48 8d 3d 00 00 00 00 lea 0x0(%rip),%rdi
102:
                                                 # 109 <main+0x109>
                   105: R_X86_64_PC32
                                              b-0x4
109:
      e8 00 00 00 00
                          callq 10e <main+0x10e>
                    10a: R X86 64 PLT32
                                              system-0x4
      b8 00 00 00 00
                          mov $0x0,%eax
10e:
113:
      e8 00 00 00 00
                          callq 118 <main+0x118>
                    114: R_X86_64_PLT32
                                              waitForUserInput-0x4
      ь8 00 00 00 00
                                $0x0,%eax
118:
                          mov
11d:
      5d
                         %rbp
                   pop
      c3
11e:
                   retq
objdump -dx module2.o
module2.o:
            file format elf64-x86-64
module2.o
architecture: i386:x86-64, flags 0x00000010:
HAS SYMS
start address 0x0000000000000000
Sections:
```

#### **SYMBOL TABLE:**

0000000000000000 l df \*ABS\* 000000000000000 module2.c 000000000000000 l d.text 000000000000000 .text 000000000000000 l d.data 000000000000000 l d.bss 00000000000000 .bss

000000000000000 l d .note.GNU-stack 00000000000000 .note.GNU-stack

0000000000000000 l d .comment 000000000000000 .comment

0000000000004000 O \*COM\* 0000000000000020 a 00000000000000 g O .data 00000000000000000 b

#### objdump -dx module3.o

module3.o: file format elf64-x86-64

module3.o

architecture: i386:x86-64, flags 0x00000011:

HAS\_RELOC, HAS\_SYMS

start address 0x00000000000000000

#### Sections:

Idx Name Size VMA LMA File off Algn

3 .comment 0000002a 00000000000000 0000000000000 00000063 2\*\*0 CONTENTS, READONLY

#### SYMBOL TABLE:

0000000000000000 l df \*ABS\* 000000000000000 module3.c 00000000000000 l d .text 0000000000000 .text

0000000000000000 l d .data 0000000000000000 .data 00000000000000 l d .bss 000000000000000 .bss

000000000000000 l d .note.GNU-stack 00000000000000 .note.GNU-stack

000000000000000 l d .eh\_frame 00000000000000 .eh\_frame 000000000000000 l d .comment 00000000000000 .comment

000000000000000 g F .text 00000000000023 waitForUserInput

00000000000000 \*UND\* 0000000000000 GLOBAL\_OFFSET\_TABLE\_

000000000000000 \*UND\* 00000000000000 getchar

Disassembly of section .text:

```
0000000000000000 <waitForUserInput>:
```

```
0:
     55
                   push %rbp
                                %rsp,%rbp
1:
     48 89 e5
                          mov
     48 83 ec 10
                               $0x10,%rsp
4:
                          sub
8:
     e8 00 00 00 00
                          callq d <waitForUserInput+0xd>
                   9: R X86 64 PLT32 getchar-0x4
                                %al,-0x1(%rbp)
d:
     88 45 ff
                          mov
     eb 08
                               1a <waitForUserInput+0x1a>
10:
                          jmp
     e8 00 00 00 00
                          callq 17 <waitForUserInput+0x17>
12:
                   13: R X86 64 PLT32
                                              getchar-0x4
17:
     88 45 ff
                          mov \%al,-0x1(\%rbp)
1a:
     80 7d ff 6e
                          cmpb $0x6e,-0x1(%rbp)
     75 f2
                          jne 12 <waitForUserInput+0x12>
1e:
     90
20:
                   nop
21:
     c9
                   leaveg
22:
     c3
                   retq
```

## **Discussion:**

In these outputs we can observe the offset, machine code and assembly code of the functions. To reference the difference between relocatable object module and executable object module: The object modules are made from assembly code by the assembler, and linker forms executable object files by using these object modules. The data in executable object module is used when progam runs by getting into the RAM. Also we can see the .data and .text sections for each module.o

In symbol table, data in my program being a and b, are represented as

```
0000000000004000
                    O *COM*
                               00000000000000020 a
00000000000000000 g
                               000000000000000000 b
                     O .data
in module2.o and
0000000000000000
                      *UND*
                               0000000000000000 a
0000000000000000
                               0000000000000000 b
```

\*UND\*

in module1.o. We can see that it is not allocated in memory in module1 usage, but initialized data b is allocated to .data section in module2.0 # b <main+0xb> is how b is referenced in main also, a0 <main+0xa0> is how a is referenced in main, as an example.

Printf is used in main. printf-0x4 is how it is referenced in module1 0000000000000000 \*UND\* 000000000000000 printf The address of printf in the program is: 7f4833296e80

oguztuzun@oguztuzun-Lenovo-ideapad-330-17IKB:/proc\$ ls								
1	1376	18	1991	27708	36	59	9010	interrupts
10	14	1801	2	2778	378	5913	902	iomem
1037	1421	1805	20	27790	38	595	9024	ioports
1058	1459	1809	200	278	3801	6	9034	irq
1070	1499	181	2009	27803	385	60	907	kallsyms
11	15	182	2018	27806	388	61	909	kcore
1117	1509	1833	20270	27829	39	6112	9094	keys
1118	1510	1838	2033	27854	396	612	9100	key-users
1129	1524	18421	2063	27857	397	62	912	kmsg
1131	1528	1843	21	27868	398	63	913	kpagecgroup
1133	1530	1847	21342	27878	4	64	914	kpagecount
1133	15374	1849	219	27888	40	65	915	kpageflags
1167	1586	1850	22	279	402	66	917	loadavg
1188	1589	1851	22800	27929	41	6679	9203	locks
12	159	1852	22819	27936	42	6687	9208	mdstat
1204	16	1854	23	27953	420	6731	9225	meminfo
1209	160	1862	23840	27961	423	6869	923	misc
1211	161	1869	23888	28	424	6882	9305	modules
1215	163	1870	24	283	4243	7026	940	mounts
1216	16330	1881	2487	29	4244	704	945	mtrr
1258	164	1882	2502	3	425	7085	946	net
1261	165	1888	25338	30	426	751	947	pagetypeinfo
1263	166	189	25685	306	427	752	948	partitions
1266	167	1891	26	308	428	7995	949	pressure
1274	1684	1893	26036	309	44	8006	950	sched_debug
13	1687	1894	26279	310	45	8007	953	schedstat
1306	169	1901	26440	312	454	8148	957	scsi
1312	1692	1908	26621	3143	455	8159	958	self
1314	1694	1930	26636	3144	456	8160	966	slabinfo
1334	17	1948	26687	3158	457	871	986	softirqs
1335	1713	1949	26741	3159	458	8799	acpi	stat
1336	1720	19530	26977	3160	459	8801	asound	swaps
1339	1725	19621	26978	3161	46	8819	buddyinfo	sys
1341	1736	19696	27	3162	460	8821	bus	sysrq-trigger
1344	1753	19703	27051	3163	461	8823	cgroups	sysvipc
1346	1755	19704		3164	462	8829	cmdline	thread-self
1348	1758	19707	27126	3165	463	8835	consoles	timer_list
1349	176	19708	27144	3166	47	8865	cpuinfo	tty
1350	1763	19711	27305	3167	48	888	crypto	uptime
1354	1765	1972	27404	32	50	8885	devices	version
1355	1767	19732	27405	33	51	890	diskstats	version_signature
1356	177	19735	27474	34	52	8971	dma	vmallocinfo
1359	1778	1978	27527	340	53	9	driver	vmstat
1361	178	19800	27572	341	54	9001	execdomains	zoneinfo
1367	1786	19826	276	346	56	9002	fb	
1371	1792	19849	27634	35	57	9004	filesystems	
1375	1796	19856	277	3536	58	9006	fs	

Directories that are related to memory management include process ids, meminfo, cpuinfo and filesystems. Meminfo gives information about memory used in buffers and cached, also had total memory and free memory parts. Cpuinfo directory has information about processor such as its cpu family, model, cpu MHz and cache size. Filesystems directory lists the supported file systems.

```
STEP 2
oguztuzun@oguztuzun-Lenovo-ldeapad-330-1/1KB:~/DesKtop/sem2/US/osp35 ./app
Address of main fnc: 400617
Address of uninitialized array: 601120
Address of initialized array: 601060
Address of user input fnc: 400774
Address of printf: 7f5959ad8e80
PID: 28995
---STEP 2---
Address of dynamically allocated data 1: 1ab7a80
Address of dynamically allocated data 2: 1ad62d0
pmap -x 28995
28995: ./app
                      RSS Dirty Mode Mapping
Address
             Kbytes
0000000000400000
                      4
                           4
                                0 r-x-- app
0000000000400000
                     0
                           0
                                0 r-x-- app
0000000000600000
                      4
                           4
                                4 r---- app
0000000000600000
                      0
                           0
                                0 r---- app
0000000000601000
                      4
                           4
                                4 rw--- app
0000000000601000
                     0
                           0
                                0 rw--- app
0000000000602000
                     16
                           0
                                0 rw--- [ anon ]
0000000000602000
                     0
                           0
                                0 rw--- [ anon ]
                    376
                           12
                                 12 rw--- [ anon ]
0000000001ab7000
                                0 rw--- [ anon ]
0000000001ab7000
                     0
                          0
00007f5959a74000
                    1948
                          1248
                                   0 r-x-- libc-2.27.so
00007f5959a74000
                     0
                          0
                               0 r-x-- libc-2.27.so
                   2048
                            0
                                 0 ---- libc-2.27.so
00007f5959c5b000
                          0
00007f5959c5b000
                               0 ---- libc-2.27.so
                     0
                                16 r---- libc-2.27.so
                          16
00007f5959e5b000
                     16
00007f5959e5b000
                     0
                          0
                               0 r---- libc-2.27.so
                          8
00007f5959e5f000
                     8
                               8 rw--- libc-2.27.so
                          0
                               0 rw--- libc-2.27.so
00007f5959e5f000
                     0
00007f5959e61000
                     16
                          12
                                12 rw--- [ anon ]
                               0 rw--- [ anon ]
00007f5959e61000
                     0
                          0
00007f5959e65000
                    156
                          156
                                 0 r-x-- ld-2.27.so
00007f5959e65000
                          0
                               0 r-x-- ld-2.27.so
                     0
00007f595a06d000
                     8
                          8
                               8 rw--- [ anon ]
00007f595a06d000
                     0
                          0
                               0 rw--- [ anon ]
                               4 r---- ld-2.27.so
00007f595a08c000
                     4
                          4
                          0
                     0
                               0 r---- ld-2.27.so
00007f595a08c000
00007f595a08d000
                     4
                          4
                               4 rw--- ld-2.27.so
                     0
                          0
                               0 rw--- ld-2.27.so
00007f595a08d000
                     4
                               4 rw--- [ anon ]
00007f595a08e000
                          4
00007f595a08e000
                     0
                          0
                               0 rw--- [ anon ]
00007fff8b044000
                   132
                          12
                                12 rw--- [ stack ]
00007fff8b044000
                    0
                          0
                               0 rw--- [ stack ]
00007fff8b124000
                    12
                          0
                               0 r---- [ anon ]
00007fff8b124000
                          0
                               0 r---- [ anon ]
                    0
```

00007fff8b127000

00007fff8b127000

4

0

4

0

0 r-x-- [ anon ]

0 r-x-- [ anon ]

```
fffffffff600000 4 0 0 --x-- [ anon ] ffffffffff600000 0 0 0 --x-- [ anon ] ------ total kB 4768 1500 88
```

Here we see an increase in size of virtural memory due to 2MB of dynamic memory allocation made in step 2. We can see the start address of dynamically allocated data as 1ab7000 they are mapped as [anon]. Apart from that, as in step 1, I can see the virtual memory starting addresses in the first column of pmap output, which are corresponding to the addresses I have found as the addresses of the data and functions used in the program. In the second column we can see virtual size of each mapping, which correspond to the data sizes used in my program being 4Kbytes and 16Kbytes, and It can be seen that these values are mapped to app, which is the name of the program. The printf function used in the program is mapped to libc.

#### ps aux --sort -rss

USER	PID %CPU %N	MEM VSZ	RSS TTY	STA	T START	TIME (	COMMAND
oguztuz+	28995 0.0 0.0	4764	720 pts/0	S+	Mav01	0:00	app /

## **Discussion:**

We can see that the program is not heavy on CPU. It doesn't use memory in this part, as all is done in virtual memory segment. RSS size is 720 which is memory taken up on RAM, it is relatively low compared to other processes running.

## STEP 3:

```
oguztuzun@oguztuzun-Lenovo-ideapad-330-17IKB:~/Desktop/sem2/OS/osp3$ ./app
---STEP 1---
Address of main fnc: 400617
Address of uninitialized array: 601120
Address of initialized array: 601060
Address of user input fnc: 40089b
Address of printf: 7fb1282b2e80
PID: 31979
---STEP 2---
Address of dynamically allocated data 1: eb6a80
Address of dynamically allocated data 2: ed52d0
---STEP 3---
Address of main fnc: 400617
Address of uninitialized array: 601120
Address of initialized array: 601060
Address of user input fnc: 40089b
Address of printf: 7fb1282b2e80
Address of dynamically allocated data 1: eb6a80
Address of dynamically allocated data 2: ed52d0
Address of recursive fnc: 4008be
```

# pmap -x 31979

31979: ./app			
Address Kbyte	es RS	S Di	rty Mode Mapping
0000000000400000	4	4	0 r-x app
0000000000400000	0	0	0 r-x app
0000000000000000	4	4	4 r app
0000000000000000	0	0	0 r app
0000000000601000	4	4	4 rw app
0000000000601000	0	0	0 rw app
0000000000602000	16	0	0 rw [ anon ]
0000000000602000	0	0	0 rw [ anon ]
0000000000eb6000	376	12	12 rw [ anon ]
0000000000eb6000	0	0	0 rw [ anon ]
00007fb12824e000	1948	1272	2 0 r-x libc-2.27.so
00007fb12824e000	0	0	0 r-x libc-2.27.so
00007fb128435000	2048	0	0 libc-2.27.so
00007fb128435000	0	0	0 libc-2.27.so
00007fb128635000	16	16	16 r libc-2.27.so
00007fb128635000	0	0	0 r libc-2.27.so
00007fb128639000	8	8	8 rw libc-2.27.so
00007fb128639000	0	0	0 rw libc-2.27.so
00007fb12863b000	16	12	12 rw [ anon ]
00007fb12863b000	0	0	0 rw [ anon ]
00007fb12863f000	156	156	0 r-x ld-2.27.so
00007fb12863f000	0	0	0 r-x ld-2.27.so
00007fb128847000	8	8	8 rw [ anon ]
00007fb128847000	0	0	0 rw [ anon ]
00007fb128866000	4	4	4 r ld-2.27.so
00007fb128866000	0	0	0 r ld-2.27.so
00007fb128867000	4	4	4 rw ld-2.27.so
00007fb128867000	0	0	0 rw ld-2.27.so

```
00007fb128868000
                      4
                           4
                                4 rw--- [ anon ]
00007fb128868000
                      0
                                0 rw--- [ anon ]
                           0
                    400
                           400
                                 400 rw--- [ stack ]
00007ffc85666000
                                0 rw--- [ stack ]
00007ffc85666000
                     0
                           0
                                0 r---- [ anon ]
00007ffc856e1000
                     12
                           0
00007ffc856e1000
                          0
                                0 r---- [ anon ]
                     0
00007ffc856e4000
                     4
                          4
                                0 r-x-- [ anon ]
00007ffc856e4000
                     0
                          0
                                0 r-x-- [ anon ]
ffffffff600000
                  4
                       0
                            0 --x-- [ anon ]
fffffffff600000
                  0
                       0
                             0 --x-- [ anon ]
total kB
              5036 1912
                             476
```

We see an expansion in stack size, in previous steps pmap output, the Kbytes and RSS corresponding to stack allocation were 132 and 12 respectively. However in this pmap output we see Kbytes and RSS to be 400. In this command -x version of pmap is used in order to get extensive information on virtual memory allocation of the program.

#### STEP 4:

```
oquztuzun@oquztuzun-Lenovo-ideapad-330-17IKB:~/Desktop/sem2/0S/osp3$ ./app
--STEP 1---
Address of main fnc: 400667
Address of uninitialized array: 601120
Address of initialized array: 601060
Address of user input fnc: 40097b
Address of printf: 7f7980474e80
PID: 605
---STEP 2---
Address of dynamically allocated data 1: c87a80
Address of dynamically allocated data 2: ca62d0
---STEP 3---
Address of main fnc: 400667
Address of uninitialized array: 601120
Address of initialized array: 601060
Address of user input fnc: 40097b
Address of printf: 7f7980474e80
Address of dynamically allocated data 1: c87a80
Address of dynamically allocated data 2: ca62d0
Address of recursive fnc: 40099e
---STEP 4---
Address of start address: 7f79809cb000
```

#### pmap -x 605

```
605: ./app
Address
              Kbytes
                       RSS Dirty Mode Mapping
0000000000400000
                      4
                            4
                                 0 r-x-- app
0000000000400000
                      0
                            0
                                 0 r-x-- app
0000000000600000
                      4
                            4
                                 4 r---- app
0000000000600000
                      0
                            0
                                 0 r---- app
                                 4 rw--- app
0000000000601000
                      4
                            4
0000000000601000
                      0
                            0
                                 0 rw--- app
                                 4 rw--- [ anon ]
0000000000602000
                      16
                            4
                                 0 rw--- [ anon ]
0000000000602000
                      0
                            0
                            12
0000000000c87000
                     376
                                  12 rw--- [ anon ]
                           0
                                 0 rw--- [ anon ]
0000000000c87000
                      0
00007f7980410000
                    1948
                           1328
                                    0 r-x-- libc-2.27.so
00007f7980410000
                      0
                           0
                                0 r-x-- libc-2.27.so
00007f79805f7000
                    2048
                            0
                                  0 ---- libc-2.27.so
                                0 ---- libc-2.27.so
00007f79805f7000
                      0
                           0
00007f79807f7000
                           16
                                 16 r---- libc-2.27.so
                     16
                                0 r---- libc-2.27.so
00007f79807f7000
                      0
                           0
                                8 rw--- libc-2.27.so
00007f79807fb000
                      8
                           8
                                0 rw--- libc-2.27.so
00007f79807fb000
                      0
                           0
00007f79807fd000
                     16
                           12
                                 12 rw--- [ anon ]
                                0 rw--- [ anon ]
00007f79807fd000
                     0
                           0
                     156
                           156
                                   0 r-x-- ld-2.27.so
00007f7980801000
                                0 r-x-- ld-2.27.so
00007f7980801000
                      0
                           0
00007f79809cb000
                     248
                           0
                                 0 rw-s- zero (deleted)
00007f79809cb000
                                0 rw-s- zero (deleted)
                      0
                           0
```

```
00007f7980a09000
                      8
                            8
                                 8 rw--- [ anon ]
00007f7980a09000
                      0
                            0
                                 0 rw--- [ anon ]
00007f7980a28000
                      4
                            4
                                 4 r---- ld-2.27.so
00007f7980a28000
                      0
                            0
                                 0 r---- ld-2.27.so
00007f7980a29000
                      4
                            4
                                 4 rw--- ld-2.27.so
                                 0 rw--- ld-2.27.so
00007f7980a29000
                      0
                            0
00007f7980a2a000
                      4
                            4
                                 4 rw--- [ anon ]
00007f7980a2a000
                      0
                            0
                                 0 rw--- [ anon ]
                                 400 rw--- [ stack ]
00007fff769eb000
                    404
                           400
                                0 rw--- [ stack ]
00007fff769eb000
                      0
                           0
00007fff76bd0000
                                 0 r---- [ anon ]
                     12
                           0
                                0 r---- [ anon ]
00007fff76bd0000
                      0
                           0
                                0 r-x-- [ anon ]
00007fff76bd3000
                      4
                           4
00007fff76bd3000
                      0
                           0
                                0 r-x-- [ anon ]
ffffffff600000
                        0
                             0 --x-- [ anon ]
                   4
fffffffff600000
                             0 --x-- [ anon ]
                   0
                        0
total kB
              5288
                     1972
                             480
```

The output for memory mapped file is highligted, being the start adress of start pointer to the mapped region of data. We can observe that Kbytes are higher than RSS, which is memory taken up on RAM, maybe it indicated the mapping of file to virtual memory.

#### ps aux --sort -pid

```
USER PID %CPU %MEM VSZ RSS TTY STAT START TIME COMMAND oguztuz+ 605 0.0 0.0 5284 1764 pts/0 S+ 00:56 0:00 ./app
```

#### **Discussion:**

When physical memory is investigated, we see that RSS has increased compared to previous steps outputs, due to heavier use of data, however the %CPU %MEM are still 0 meaning, the data worked with and CPU usage is relatively light when compared to other ongoing processes. When we look at VSZ being virtual memory size, on previous step it used to be 720. In this output we observe that It increased to 5284. mmap systemcall utilization increased it as it mapped data to virtual memory.

```
STEP 5:
```

```
oguztuzun@oguztuzun-Lenovo-ideapad-330-17IKB:~/Desktop/sem2/0S/osp3$ ./app
---STEP 1---
Address of main fnc: 400667
Address of uninitialized array: 602120
Address of initialized array: 602060
Address of user input fnc: 400a9b
Address of printf: 7fcaec028e80
PID: 3140
---STEP 2---
Address of dynamically allocated data 1: e48a80
Address of dynamically allocated data 2: e672d0
---STEP 3---
Address of main fnc: 400667
Address of uninitialized array: 602120
Address of initialized array: 602060
Address of user input fnc: 400a9b
Address of printf: 7fcaec028e80
Address of dynamically allocated data 1: e48a80
Address of dynamically allocated data 2: e672d0
Address of recursive fnc: 400abe
---STEP 4---
Address of start address: 7fcaec57f000
---STEP 5---
data read: 123
data read: 456
data read: 789
Adrs of data read from memory mapped region: 7b
Adrs of data read from memory mapped region: 1c8
Adrs of data read from memory mapped region: 315
```

#### ps aux --sort -pid

USER PID %CPU %MEM VSZ RSS TTY STAT START TIME COMMAND oguztuz+ 3140 0.0 0.0 5284 1684 pts/0 S+ 01:26 0:00 ./app

#### pmap -x 3140

```
3140: ./app
                      RSS Dirty Mode Mapping
Address
             Kbvtes
0000000000400000
                     4
                          4
                               0 r-x-- app
0000000000400000
                     0
                          0
                               0 r-x-- app
0000000000601000
                     4
                          4
                               4 r---- app
                     0
0000000000601000
                          0
                               0 r---- app
0000000000602000
                     4
                          4
                               4 rw--- app
                     0
                          0
                               0 rw--- app
0000000000602000
0000000000603000
                     16
                          4
                               4 rw--- [ anon ]
                               0 rw--- [ anon ]
0000000000603000
                     0
                          0
                    376
0000000000e48000
                         12
                               12 rw--- [ anon ]
                               0 rw--- [ anon ]
0000000000e48000
                    0
                          0
00007fcaebfc4000 1948
                        1248
                                 0 r-x-- libc-2.27.so
00007fcaebfc4000
                         0
                              0 r-x-- libc-2.27.so
                    0
```

```
00007fcaec1ab000
                    2048
                             0
                                   0 ---- libc-2.27.so
                            0
00007fcaec1ab000
                      0
                                 0 ---- libc-2.27.so
00007fcaec3ab000
                      16
                            16
                                  16 r---- libc-2.27.so
00007fcaec3ab000
                      0
                            0
                                 0 r---- libc-2.27.so
00007fcaec3af000
                      8
                           8
                                 8 rw--- libc-2.27.so
                                 0 rw--- libc-2.27.so
00007fcaec3af000
                      0
                           0
00007fcaec3b1000
                      16
                            12
                                  12 rw--- [ anon ]
00007fcaec3b1000
                                 0 rw--- [ anon ]
                      0
                            0
00007fcaec3b5000
                     156
                            156
                                    0 r-x-- ld-2.27.so
                                 0 r-x-- ld-2.27.so
00007fcaec3b5000
                      0
                            0
00007fcaec57f000
                            4
                                  4 rw-s- zero (deleted)
                     248
                                 0 rw-s- zero (deleted)
00007fcaec57f000
                            0
                      0
00007fcaec5bd000
                                 8 rw--- [ anon ]
                            8
                      8
00007fcaec5bd000
                      0
                            0
                                 0 rw--- [ anon ]
                                 4 r---- ld-2.27.so
00007fcaec5dc000
                      4
                            4
00007fcaec5dc000
                            0
                                 0 r---- ld-2.27.so
                      0
00007fcaec5dd000
                      4
                            4
                                 4 rw--- ld-2.27.so
00007fcaec5dd000
                      0
                            0
                                 0 rw--- ld-2.27.so
00007fcaec5de000
                      4
                            4
                                 4 rw--- [ anon ]
00007fcaec5de000
                      0
                            0
                                 0 rw--- [ anon ]
                           400
00007ffecbf6a000
                    404
                                  400 rw--- [ stack ]
                                 0 rw--- [ stack ]
00007ffecbf6a000
                      0
                           0
00007ffecbfdd000
                     12
                            0
                                 0 r---- [ anon ]
00007ffecbfdd000
                                 0 r---- [ anon ]
                      0
                           0
00007ffecbfe0000
                      4
                           4
                                0 r-x-- [ anon ]
00007ffecbfe0000
                      0
                           0
                                0 r-x-- [ anon ]
ffffffff600000
                              0 --x-- [ anon ]
                   4
                        0
ffffffff600000
                              0 --x-- [ anon ]
                   0
                        0
total kB
               5288
                      1896
                              484
```

Kernel's memory map is displayed by pmap command for pid of our program. We have address segment that specifies the start adress of the map, Kbytes segment is the size of map, RSS is memory taken up on RAM, Dirty is dirty pages, Mode specifies the user permissions, Mapping segment specifies where the memory is allocated. 5288 Kbytes is total mapped data size.

#### getconf PAGESIZE

4096

So 5288 / 4096 = 1.29 pages is total code size.

## STEP 6:

\* some parts arts to be compared to objdump output are screenshoted. \*

```
400667 -> 55
400668 -> 48
400669 -> ffffff89
40066a -> ffffffe5
40066b -> 48
40066c -> ffffff83
40066d -> ffffffec
40066e -> 10
40066f -> 48
400670 -> ffffff8d
|400671 -> 3d
400672 -> 72
400673 -> 05
400674 -> 00
400675 -> 00
400676 -> ffffffe8
400677 -> ffffffa5
400678 -> fffffffe
400679 -> ffffffff
40067a -> ffffffff
40067b -> 48
40067c -> ffffff8d
40067d -> 15
40067e -> ffffffe5
40067f -> ffffffff
400680 -> ffffffff
400681 -> ffffffff
400682 -> 48
400683 -> ffffff8d
400684 -> 35
400685 -> 6c
400686 -> 05
400687 -> 00
400688 -> 00
400689 -> 48
40068a -> ffffff8d
40068b -> 3d
40068c -> 7b
40068d -> 05
40068e -> 00
40068f -> 00
400690 -> ffffffb8
400691 -> 00
400692 -> 00
400693 -> 00
400694 -> 00
400695 -> ffffffe8
400696 -> ffffffd6
400697 -> fffffffe
400698 -> ffffffff
400699 -> ffffffff
40069a -> 48
40069b -> ffffff8d
```

## objdump -dx app \* main part \*

```
0000000000400667 <main>:
 400667:
             55
                           push %rbp
 400668:
             48 89 e5
                                        %rsp,%rbp
                                  mov
 40066b:
             48 83 ec 10
                                  sub
                                       $0x10,%rsp
                                       0x572(%rip),%rdi
                                                             # 400be8 < IO stdin used+0x8>
 40066f:
             48 8d 3d 72 05 00 00 lea
             e8 a5 fe ff ff
                                  callq 400520 <puts@plt>
 400676:
 40067b:
             48 8d 15 e5 ff ff ff
                                  lea
                                       -0x1b(%rip),%rdx
                                                             # 400667 <main>
                                       0x56c(%rip),%rsi
                                                            # 400bf5 < IO stdin used+0x15>
 400682:
             48 8d 35 6c 05 00 00 lea
             48 8d 3d 7b 05 00 00 lea
                                       0x57b(%rip),%rdi
                                                             # 400c0b
 400689:
<_IO_stdin_used+0x2b>
 400690:
             ь8 00 00 00 00
                                        $0x0,%eax
                                  mov
 400695:
                                  callq 400570 <printf@plt>
             e8 d6 fe ff ff
                                       0x201a7f(%rip),%rdx
 40069a:
             48 8d 15 7f 1a 20 00 lea
                                                                # 602120 <a>
                                                            # 400c18 <_IO_stdin_used+0x38>
 4006a1:
             48 8d 35 70 05 00 00 lea
                                       0x570(%rip),%rsi
 4006a8:
             48 8d 3d 5c 05 00 00 lea
                                       0x55c(%rip),%rdi
                                                            # 400c0b <_IO_stdin_used+0x2b>
 4006af:
             b8 00 00 00 00
                                        $0x0,%eax
                                  mov
 4006b4:
             e8 b7 fe ff ff
                                  callq 400570 <printf@plt>
 4006b9:
             48 8d 15 a0 19 20 00 lea
                                       0x2019a0(%rip),%rdx
                                                                # 602060 <b>
 4006c0:
             48 8d 35 79 05 00 00 lea
                                       0x579(%rip),%rsi
                                                            # 400c40 <_IO_stdin_used+0x60>
 4006c7:
             48 8d 3d 3d 05 00 00 lea
                                       0x53d(%rip),%rdi
                                                             # 400c0b
<_IO_stdin_used+0x2b>
             ь8 00 00 00 00
                                        $0x0,%eax
 4006ce:
                                  mov
 4006d3:
             e8 98 fe ff ff
                                  callq 400570 <printf@plt>
             48 c7 c0 13 0b 40 00 mov
                                        $0x400b13,%rax
 4006d8:
             48 89 c2
                                        %rax,%rdx
 4006df:
                                  mov
             48 8d 35 76 05 00 00 lea
                                       0x576(%rip),%rsi
 4006e2:
                                                            # 400c5f <_IO_stdin_used+0x7f>
 4006e9:
             48 8d 3d 1b 05 00 00 lea
                                       0x51b(%rip),%rdi
                                                             # 400c0b
< IO stdin used+0x2b>
 4006f0:
             ь8 00 00 00 00
                                        $0x0,%eax
                                  mov
 4006f5:
             e8 76 fe ff ff
                                  callq 400570 <printf@plt>
 4006fa:
             48 8b 05 e7 18 20 00 mov
                                        0x2018e7(%rip),%rax
                                                                  #601fe8
<printf@GLIBC_2.2.5>
 400701:
             48 89 c2
                                  mov
                                        %rax,%rdx
             48 8d 35 70 05 00 00 lea
 400704:
                                       0x570(%rip),%rsi
                                                            # 400c7b <_IO_stdin_used+0x9b>
                                       0x4f9(%rip),%rdi
                                                            \#400c0b < IO stdin used+0x2b>
 40070b:
             48 8d 3d f9 04 00 00 lea
                                        $0x0,%eax
 400712:
             ь8 00 00 00 00
                                  mov
                                  callq 400570 <printf@plt>
 400717:
             e8 54 fe ff ff
             e8 Of fe ff ff
                                  callq 400530 <getpid@plt>
 40071c:
 400721:
             89 c2
                                  mov
                                        %eax,%edx
 400723:
             48 8d 35 65 05 00 00 lea
                                       0x565(%rip),%rsi
                                                            # 400c8f < IO stdin used+0xaf>
                                                             # 400c95
 40072a:
             48 8d 3d 64 05 00 00 lea
                                       0x564(%rip),%rdi
<_IO_stdin_used+0xb5>
                                        $0x0,%eax
 400731:
             ь8 00 00 00 00
                                  mov
                                  callq 400570 <printf@plt>
 400736:
             e8 35 fe ff ff
 40073b:
                                        $0x0,%eax
             b8 00 00 00 00
                                  mov
                                  callq 400b13 <waitForUserInput>
 400740:
             e8 ce 03 00 00
                                      0x54f(%rip),%rdi
                                                            # 400c9b < IO stdin used+0xbb>
 400745:
             48 8d 3d 4f 05 00 00 lea
 40074c:
             e8 cf fd ff ff
                                  callq 400520 <puts@plt>
                                        $0x1e848,%edi
 400751:
             bf 48 e8 01 00
                                  mov
```

```
400756:
             e8 05 fe ff ff
                                 calla 400560 <malloc@plt>
40075b:
             48 89 05 a6 19 20 00 mov
                                        %rax,0x2019a6(%rip)
                                                                 # 602108 <c>
400762:
             bf 48 e8 01 00
                                 mov
                                        $0x1e848,%edi
400767:
             e8 f4 fd ff ff
                                  callq 400560 <malloc@plt>
40076c:
             48 89 05 8d 19 20 00 mov
                                        %rax,0x20198d(%rip)
                                                                 # 602100 <d>
                                        0x20198e(%rip),%rax
400773:
             48 8b 05 8e 19 20 00 mov
                                                                 # 602108 <c>
40077a:
             48 89 c2
                                 mov
                                        %rax,%rdx
40077d:
             48 8d 35 24 05 00 00 lea
                                      0x524(%rip),%rsi
                                                            # 400ca8 < IO stdin used+0xc8>
400784:
             48 8d 3d 80 04 00 00 lea
                                      0x480(%rip),%rdi
                                                            # 400c0b
<_IO_stdin_used+0x2b>
40078b:
             ь8 00 00 00 00
                                        $0x0,%eax
                                 mov
400790:
             e8 db fd ff ff
                                 callq 400570 <printf@plt>
400795:
             48 8b 05 64 19 20 00 mov
                                        0x201964(%rip),%rax
                                                                 # 602100 <d>
40079c:
             48 89 c2
                                        %rax,%rdx
                                  mov
40079f:
                                      0x532(%rip),%rsi
             48 8d 35 32 05 00 00 lea
                                                            # 400cd8 <_IO_stdin_used+0xf8>
             48 8d 3d 5e 04 00 00 lea
                                      0x45e(%rip),%rdi
                                                            # 400c0b < IO stdin used+0x2b>
4007a6:
4007ad:
             ь8 00 00 00 00
                                 mov
                                        $0x0,%eax
4007b2:
             e8 b9 fd ff ff
                                 callq 400570 <printf@plt>
                                        $0x0,%eax
4007b7:
             b8 00 00 00 00
                                 mov
4007bc:
             e8 52 03 00 00
                                  callq 400b13 <waitForUserInput>
4007c1:
             48 8d 3d 3a 05 00 00 lea
                                      0x53a(%rip),%rdi
                                                            # 400d02
<_IO_stdin_used+0x122>
4007c8:
             e8 53 fd ff ff
                                  callq 400520 <puts@plt>
4007cd:
             bf d4 30 00 00
                                        $0x30d4.%edi
                                  callq 400b36 < recursiveFnc>
             e8 5f 03 00 00
4007d2:
4007d7:
             48 8d 15 89 fe ff ff
                                 lea
                                      -0x177(\%rip),\%rdx
                                                              # 400667 <main>
                                      0x410(%rip),%rsi
4007de:
             48 8d 35 10 04 00 00 lea
                                                            # 400bf5 < IO stdin used+0x15>
             48 8d 3d 1f 04 00 00 lea
                                      0x41f(%rip),%rdi
                                                            # 400c0b < IO stdin used+0x2b>
4007e5:
             ь8 00 00 00 00
                                        $0x0,%eax
4007ec:
                                 mov
4007f1:
             e8 7a fd ff ff
                                  callq 400570 <printf@plt>
             48 8d 15 23 19 20 00 lea
                                      0x201923(%rip),%rdx
                                                                # 602120 <a>
4007f6:
4007fd:
             48 8d 35 14 04 00 00 lea
                                      0x414(%rip),%rsi
                                                            # 400c18 <_IO_stdin_used+0x38>
400804:
             48 8d 3d 00 04 00 00 lea
                                      0x400(%rip),%rdi
                                                            # 400c0b
<_IO_stdin_used+0x2b>
40080b:
             b8 00 00 00 00
                                        $0x0,%eax
                                 mov
400810:
             e8 5b fd ff ff
                                 callq 400570 <printf@plt>
                                      0x201844(%rip),%rdx
400815:
             48 8d 15 44 18 20 00 lea
                                                                # 602060 <b>
             48 8d 35 1d 04 00 00 lea
                                      0x41d(%rip),%rsi
                                                            # 400c40 < IO stdin used+0x60>
40081c:
                                      0x3e1(%rip),%rdi
                                                            # 400c0b < IO stdin used+0x2b>
400823:
             48 8d 3d e1 03 00 00 lea
             ь8 00 00 00 00
                                        $0x0,%eax
40082a:
                                 mov
40082f:
             e8 3c fd ff ff
                                 callq 400570 <printf@plt>
                                        $0x400b13,%rax
400834:
             48 c7 c0 13 0b 40 00 mov
40083b:
             48 89 c2
                                        %rax,%rdx
                                  mov
             48 8d 35 1a 04 00 00 lea
                                      0x41a(%rip),%rsi
                                                            # 400c5f <_IO_stdin_used+0x7f>
40083e:
400845:
             48 8d 3d bf 03 00 00 lea
                                      0x3bf(%rip),%rdi
                                                            # 400c0b <_IO_stdin_used+0x2b>
                                        $0x0,%eax
40084c:
             b8 00 00 00 00
                                 mov
                                 callq 400570 <printf@plt>
400851:
             e8 1a fd ff ff
             48 8b 05 8b 17 20 00 mov
                                        0x20178b(%rip),%rax
                                                                 # 601fe8
400856:
<printf@GLIBC_2.2.5>
40085d:
                                        %rax,%rdx
             48 89 c2
                                  mov
400860:
             48 8d 35 14 04 00 00 lea
                                      0x414(%rip),%rsi
                                                            #400c7b < IO stdin used+0x9b>
```

```
400867:
             48 8d 3d 9d 03 00 00 lea
                                      0x39d(%rip),%rdi
                                                            # 400c0b
< IO stdin used+0x2b>
40086e:
             b8 00 00 00 00
                                 mov
                                        $0x0,%eax
400873:
             e8 f8 fc ff ff
                                 callq 400570 <printf@plt>
                                        0x201889(%rip),%rax
400878:
             48 8b 05 89 18 20 00 mov
                                                                 # 602108 <c>
                                        %rax,%rdx
40087f:
             48 89 c2
                                 mov
400882:
             48 8d 35 1f 04 00 00 lea
                                      0x41f(%rip),%rsi
                                                           # 400ca8 <_IO_stdin_used+0xc8>
400889:
             48 8d 3d 7b 03 00 00 lea
                                      0x37b(%rip),%rdi
                                                            # 400c0b
< IO stdin used+0x2b>
             ь8 00 00 00 00
                                        $0x0,%eax
400890:
                                 mov
400895:
             e8 d6 fc ff ff
                                 callq 400570 <printf@plt>
40089a:
             48 8b 05 5f 18 20 00 mov
                                        0x20185f(%rip),%rax
                                                                 # 602100 <d>
                                        %rax,%rdx
4008a1:
             48 89 c2
                                 mov
4008a4:
             48 8d 35 2d 04 00 00 lea
                                      0x42d(%rip),%rsi
                                                           # 400cd8 <_IO_stdin_used+0xf8>
             48 8d 3d 59 03 00 00 lea
                                      0x359(%rip),%rdi
                                                            # 400c0b
4008ab:
<_IO_stdin_used+0x2b>
             ь8 00 00 00 00
4008b2:
                                 mov
                                        $0x0,%eax
                                 callq 400570 <printf@plt>
4008b7:
             e8 b4 fc ff ff
                                        $0x400b36,%rax
4008bc:
             48 c7 c0 36 0b 40 00 mov
4008c3:
             48 89 c2
                                 mov
                                        %rax,%rdx
4008c6:
             48 8d 35 42 04 00 00 lea
                                      0x442(%rip),%rsi
                                                           # 400d0f
<_IO_stdin_used+0x12f>
4008cd:
             48 8d 3d 37 03 00 00 lea
                                      0x337(%rip),%rdi
                                                            # 400c0b
<_IO_stdin_used+0x2b>
4008d4:
             ь8 00 00 00 00
                                        $0x0,%eax
                                 mov
4008d9:
             e8 92 fc ff ff
                                 callq 400570 <printf@plt>
4008de:
             ь8 00 00 00 00
                                        $0x0,%eax
                                 mov
             e8 2b 02 00 00
                                 callq 400b13 <waitForUserInput>
4008e3:
             48 8d 3d 3b 04 00 00 lea
                                      0x43b(%rip),%rdi
                                                            # 400d2a
4008e8:
<_IO_stdin_used+0x14a>
             e8 2c fc ff ff
                                 callq 400520 <puts@plt>
4008ef:
4008f4:
             41 b9 00 00 00 00
                                        $0x0,%r9d
                                 mov
4008fa:
             41 b8 00 00 00 00
                                 mov
                                        $0x0,%r8d
400900:
             b9 21 00 00 00
                                        $0x21,%ecx
                                 mov
             ba 03 00 00 00
                                        $0x3,%edx
400905:
                                 mov
40090a:
             be 90 d0 03 00
                                 mov
                                        $0x3d090,%esi
40090f:
             bf 00 00 00 00
                                        $0x0,%edi
                                 mov
400914:
             e8 27 fc ff ff
                                 callq 400540 <mmap@plt>
400919:
             48 89 05 00 58 20 00 mov
                                        %rax,0x205800(%rip)
                                                                 # 606120
<pointerToSharedMemory>
400920:
             48 8b 05 f9 57 20 00 mov
                                        0x2057f9(%rip),%rax
                                                                 # 606120
<pointerToSharedMemory>
                                        %rax,%rdx
400927:
             48 89 c2
                                 mov
40092a:
             48 8d 35 06 04 00 00 lea
                                      0x406(%rip),%rsi
                                                           # 400d37
<_IO_stdin_used+0x157>
400931:
             48 8d 3d d3 02 00 00 lea
                                      0x2d3(%rip),%rdi
                                                            # 400c0b
<_IO_stdin_used+0x2b>
400938:
             ь8 00 00 00 00
                                        $0x0,%eax
                                 mov
40093d:
             e8 2e fc ff ff
                                 callq 400570 <printf@plt>
                                        $0x0,%eax
400942:
             b8 00 00 00 00
                                 mov
400947:
             e8 c7 01 00 00
                                 callq 400b13 <waitForUserInput>
```

```
40094c:
             48 8d 3d ff 03 00 00 lea 0x3ff(%rip),%rdi
                                                          # 400d52
< IO stdin used+0x172>
400953:
             e8 c8 fb ff ff
                                 callq 400520 <puts@plt>
400958:
             48 8b 05 c1 57 20 00 mov
                                       0x2057c1(%rip),%rax
                                                                # 606120
<pointerToSharedMemory>
             48 c7 00 7b 00 00 00 movg $0x7b,(%rax)
40095f:
400966:
             48 8b 05 b3 57 20 00 mov
                                       0x2057b3(%rip),%rax
                                                                # 606120
<pointerToSharedMemory>
40096d:
             48 83 c0 08
                                      $0x8,%rax
                                 add
400971:
             48 c7 00 c8 01 00 00 movq $0x1c8,(%rax)
400978:
             48 8b 05 a1 57 20 00 mov
                                       0x2057a1(%rip),%rax
                                                                # 606120
<pointerToSharedMemory>
40097f:
             48 83 c0 10
                                 add
                                      $0x10,%rax
             48 c7 00 15 03 00 00 movg $0x315,(%rax)
400983:
             48 8b 05 8f 57 20 00 mov
                                       0x20578f(%rip),%rax
40098a:
                                                                # 606120
<pointerToSharedMemory>
400991:
             48 8b 00
                                       (%rax),%rax
                                 mov
400994:
             48 89 c2
                                       %rax,%rdx
                                 mov
400997:
             48 8d 35 c1 03 00 00 lea
                                     0x3c1(%rip),%rsi
                                                           # 400d5f
< IO stdin used+0x17f>
40099e:
             48 8d 3d f0 02 00 00 lea
                                      0x2f0(%rip),%rdi
                                                           # 400c95 < IO stdin used+0xb5>
                                       $0x0,%eax
4009a5:
             b8 00 00 00 00
                                 mov
4009aa:
             e8 c1 fb ff ff
                                 callq 400570 <printf@plt>
             48 8b 05 6a 57 20 00 mov
                                       0x20576a(%rip),%rax
                                                                # 606120
4009af:
<pointerToSharedMemory>
4009b6:
             48 83 c0 08
                                 add
                                       $0x8,%rax
4009ba:
             48 8b 00
                                       (%rax),%rax
                                 mov
4009bd:
             48 89 c2
                                       %rax,%rdx
                                 mov
             48 8d 35 98 03 00 00 lea
                                      0x398(%rip),%rsi
                                                           # 400d5f
4009c0:
<_IO_stdin_used+0x17f>
             48 8d 3d c7 02 00 00 lea
                                      0x2c7(%rip),%rdi
                                                           # 400c95 < IO stdin used+0xb5>
4009c7:
4009ce:
             b8 00 00 00 00
                                       $0x0,%eax
                                 mov
4009d3:
             e8 98 fb ff ff
                                 callq 400570 <printf@plt>
4009d8:
             48 8b 05 41 57 20 00 mov
                                       0x205741(%rip),%rax
                                                                # 606120
<pointerToSharedMemory>
4009df:
             48 83 c0 10
                                 add
                                      $0x10,%rax
             48 8b 00
4009e3:
                                       (%rax),%rax
                                 mov
                                       %rax.%rdx
4009e6:
             48 89 c2
                                 mov
4009e9:
             48 8d 35 6f 03 00 00 lea
                                      0x36f(%rip),%rsi
                                                          # 400d5f < IO stdin used+0x17f>
             48 8d 3d 9e 02 00 00 lea
                                      0x29e(%rip),%rdi
                                                           # 400c95 <_IO_stdin_used+0xb5>
4009f0:
4009f7:
             ь8 00 00 00 00
                                       $0x0,%eax
                                 mov
4009fc:
             e8 6f fb ff ff
                                 callq 400570 <printf@plt>
                                       0x205718(%rip),%rax
400a01:
             48 8b 05 18 57 20 00 mov
                                                                # 606120
<pointerToSharedMemory>
400a08:
             48 8b 00
                                 mov
                                       (%rax),%rax
                                       %rax.%rdx
400a0b:
             48 89 c2
                                 mov
400a0e:
             48 8d 35 5b 03 00 00 lea
                                      0x35b(%rip),%rsi
                                                           # 400d70
<_IO_stdin_used+0x190>
             48 8d 3d ef 01 00 00 lea
                                      0x1ef(%rip),%rdi
                                                           # 400c0b <_IO_stdin_used+0x2b>
400a15:
             ь8 00 00 00 00
                                       $0x0,%eax
400a1c:
                                 mov
400a21:
             e8 4a fb ff ff
                                 callq 400570 <printf@plt>
```

```
400a26:
             48 8b 05 f3 56 20 00 mov
                                       0x2056f3(%rip),%rax
                                                                 # 606120
<pointerToSharedMemory>
400a2d:
             48 83 c0 08
                                 add
                                       $0x8,%rax
400a31:
             48 8b 00
                                       (%rax),%rax
                                 mov
400a34:
             48 89 c2
                                        %rax,%rdx
                                 mov
400a37:
             48 8d 35 32 03 00 00 lea
                                      0x332(%rip),%rsi
                                                           # 400d70
<_IO_stdin_used+0x190>
             48 8d 3d c6 01 00 00 lea
                                      0x1c6(%rip),%rdi
                                                           # 400c0b < IO stdin used+0x2b>
400a3e:
400a45:
             b8 00 00 00 00
                                        $0x0,%eax
                                 mov
                                 callq 400570 <printf@plt>
400a4a:
             e8 21 fb ff ff
             48 8b 05 ca 56 20 00 mov
                                       0x2056ca(%rip),%rax
                                                                 # 606120
400a4f:
<pointerToSharedMemory>
400a56:
             48 83 c0 10
                                 add
                                       $0x10,%rax
             48 8b 00
400a5a:
                                        (%rax),%rax
                                 mov
                                        %rax,%rdx
400a5d:
             48 89 c2
                                 mov
                                      0x309(%rip),%rsi
400a60:
             48 8d 35 09 03 00 00 lea
                                                           # 400d70
<_IO_stdin_used+0x190>
400a67:
             48 8d 3d 9d 01 00 00 lea
                                      0x19d(%rip),%rdi
                                                            # 400c0b
< IO stdin used+0x2b>
400a6e:
             ь8 00 00 00 00
                                 mov
                                       $0x0,%eax
400a73:
             e8 f8 fa ff ff
                                 callq 400570 <printf@plt>
                                        $0x0,%eax
400a78:
             b8 00 00 00 00
                                 mov
                                 callq 400b13 <waitForUserInput>
400a7d:
             e8 91 00 00 00
             48 8d 3d 15 03 00 00 lea 0x315(%rip),%rdi
                                                            # 400d9e
400a82:
< IO stdin used+0x1be>
400a89:
             e8 92 fa ff ff
                                 callq 400520 <puts@plt>
                                      -0x42e(%rip),%rax
             48 8d 05 d2 fb ff ff
                                 lea
                                                             # 400667 <main>
400a8e:
             48 25 00 f0 ff ff
                                       $0xffffffffff000,%rax
400a95:
                                 and
             48 89 05 86 56 20 00 mov
400a9b:
                                        %rax,0x205686(%rip)
                                                                 # 606128 <mainPtr>
400aa2:
             c7 45 fc 00 00 00 00 movl $0x0,-0x4(%rbp)
                                       400aed <main+0x486>
400aa9:
             eb 42
                                 jmp
             48 8b 15 76 56 20 00 mov
                                       0x205676(%rip),%rdx
                                                                 # 606128 <mainPtr>
400aab:
400ab2:
             8b 45 fc
                                 mov
                                       -0x4(%rbp),%eax
400ab5:
             48 98
                                 cltq
             48 01 d0
                                       %rdx,%rax
400ab7:
                                 add
400aba:
             0f b6 00
                                 movzbl (%rax),%eax
             0f be c0
                                 movsbl %al,%eax
400abd:
400ac0:
             48 8b 0d 61 56 20 00 mov
                                       0x205661(%rip),%rcx
                                                                 # 606128 <mainPtr>
400ac7:
             8b 55 fc
                                        -0x4(%rbp), %edx
                                 mov
                                 movslq %edx,%rdx
400aca:
             48 63 d2
             48 01 ca
                                       %rcx,%rdx
400acd:
                                 add
400ad0:
             48 89 d1
                                 mov
                                        %rdx,%rcx
400ad3:
             89 c2
                                        %eax,%edx
                                 mov
400ad5:
             48 89 ce
                                        %rcx,%rsi
                                 mov
400ad8:
             48 8d 3d cc 02 00 00 lea
                                      0x2cc(%rip),%rdi
                                                           # 400dab
< IO stdin used+0x1cb>
                                        $0x0,%eax
400adf:
             b8 00 00 00 00
                                 mov
             e8 87 fa ff ff
                                 callq 400570 <printf@plt>
400ae4:
             83 45 fc 01
                                 addl $0x1,-0x4(%rbp)
400ae9:
             81 7d fc ff 0f 00 00
                                 cmpl $0xfff,-0x4(\%rbp)
400aed:
             7e b5
                                      400aab <main+0x444>
400af4:
             ь8 00 00 00 00
                                        $0x0,%eax
400af6:
                                 mov
```

```
400afb:
             e8 13 00 00 00
                                 callq 400b13 <waitForUserInput>
             48 8d 3d b1 02 00 00 lea 0x2b1(%rip),%rdi
400b00:
                                                           # 400db8
< IO stdin used+0x1d8>
400b07:
             e8 14 fa ff ff
                                 callq 400520 <puts@plt>
                                       $0x0,%eax
400b0c:
             ь8 00 00 00 00
                                 mov
400b11:
             c9
                          leaveg
             c3
 400b12:
                                 retq
```

The output of the objdump displays the content of main as hexadecimal instructions. In the printf output, we can see that in the addresses that are in the the page, which main is in, each address and its corresponding content is matching. In my output I formatted the output to be 02x in order to get hexadecimal output of the page content.

#### usrbin/time -v ./app

Maximum resident set size (kbytes): 1100

### with compilation using -static option of gcc

Maximum resident set size (kbytes): 1828

## **Discussion:**

By using static label of gcc compilation, -pie which produces dynamically linking is prevented. For the program to run the libraries that the program requires must be on the .o fies to access them. The C Libraries must be on the .o file statically to be utilized any yhtis is why the maximum resident size This is why the new objdump output is so crowded when compared to the compilation with dynamic linking. This is also the reason the size in disk is lower for sstatic compiled program.

#### objdump -dx app FOR STATIC

```
489396:
            4c 8b 95 70 ff ff ff
                                       -0x90(%rbp),%r10
                                mov
48939d:
                                       %r13d,%ecx
            44 39 e9
                                cmp
            0f 86 de 05 00 00
                                     489984 < _dl_map_object_deps+0xf24>
4893a0:
                                jbe
4893a6:
            8d 51 fe
                                lea
                                     -0x2(\%rcx),\%edx
4893a9:
            48 8b bd 48 ff ff ff
                                mov
                                       -0xb8(%rbp),%rdi
                                       %r13d,%esi
4893b0:
            44 89 ee
                                mov
4893b3:
            49 8d 04 f4
                                lea
                                     (%r12,%rsi,8),%rax
4893b7:
            29 da
                                sub
                                      %ebx,%edx
                                      %rsi,%rdx
4893b9:
            48 01 f2
                                add
4893bc:
            89 de
                                mov
                                       %ebx,%esi
                                     (%rdi,%rdx,8),%rdi
4893be:
            48 8d 3c d7
4893c2:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
4893c8:
            48 8b 10
                                mov
                                       (%rax),%rdx
4893cb:
            f6 82 14 03 00 00 60 testb $0x60,0x314(%rdx)
            75 0b
                                     4893df <_dl_map_object_deps+0x97f>
4893d2:
                                ine
4893d4:
            41 89 f0
                                mov
                                       %esi,%r8d
4893d7:
            83 c6 01
                                      $0x1,%esi
                                add
                                      %rdx,0x8(%r10,%r8,8)
4893da:
            4b 89 54 c2 08
                                mov
                                      $0x8,%rax
4893df:
            48 83 c0 08
                                add
4893e3:
            48 39 c7
                                      %rax,%rdi
                                cmp
```

```
75 e0
4893e6:
                                      4893c8 < dl map object deps+0x968>
                                 ine
4893e8:
            46 8d 4c 29 ff
                                      -0x1(%rcx,%r13,1),%r9d
                                 lea
4893ed:
            41 29 d9
                                 sub
                                      %ebx,%r9d
4893f0:
            45 89 cd
                                       %r9d,%r13d
                                 mov
4893f3:
            41 89 32
                                       %esi,(%r10)
                                 mov
4893f6:
            41 83 c5 01
                                      $0x1,%r13d
                                 add
4893fa:
            41 8b 36
                                 mov
                                       (%r14),%esi
4893fd:
            e9 9e fc ff ff
                                 jmpg 4890a0 < dl map object deps+0x640>
489402:
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
            48 83 b8 b8 03 00 00 cmpq $0x0,0x3b8(%rax)
489408:
48940f:
            00
            0f 85 c7 f7 ff ff
                                      488bdd <_dl_map_object_deps+0x17d>
489410:
                                       %rax.-0xc8(%rbp)
489416:
            48 39 85 38 ff ff ff
                                 cmp
48941d:
            0f 84 ba f7 ff ff
                                     488bdd <_dl_map_object_deps+0x17d>
                                 ie
            0f b7 80 b2 02 00 00 movzwl 0x2b2(%rax),%eax
489423:
                                 test %ax.%ax
48942a:
            66 85 c0
48942d:
            0f 84 aa f7 ff ff
                                 je
                                     488bdd <_dl_map_object_deps+0x17d>
489433:
            48 c1 e0 03
                                 shl
                                     $0x3,%rax
                                       -0xe8(%rbp),%rax
489437:
            48 3b 85 18 ff ff ff
                                 cmp
48943e:
            48 8b 9d 20 ff ff ff
                                 mov
                                       -0xe0(%rbp),%rbx
489445:
            49 89 de
                                       %rbx,%r14
                                 mov
                                 jbe
                                      488bdd <_dl_map_object_deps+0x17d>
489448:
            0f 86 8f f7 ff ff
48944e:
            48 83 c0 0f
                                 add
                                      $0xf.%rax
489452:
            48 83 e0 f0
                                 and
                                      $0xffffffffffff0,%rax
489456:
            48 8d 50 1e
                                      0x1e(\%rax),\%rdx
                                 lea
48945a:
            81 e2 f0 ff 1f 00
                                 and
                                      $0x1ffff0,%edx
            48 29 d4
                                 sub
                                      %rdx,%rsp
489460:
                                      0xf(%rsp), %r14
489463:
            4c 8d 74 24 0f
                                 lea
                                      $0xffffffffffff0,%r14
489468:
            49 83 e6 f0
                                 and
48946c:
            49 8d 14 06
                                      (%r14,%rax,1),%rdx
                                 lea
            48 39 d3
489470:
                                       %rdx,%rbx
                                 cmp
            0f 84 b6 06 00 00
                                     489b2f <_dl_map_object_deps+0x10cf>
489473:
                                 je
489479:
            48 89 85 18 ff ff ff
                                 mov
                                       %rax,-0xe8(%rbp)
489480:
            4c 89 b5 20 ff ff ff
                                       %r14,-0xe0(%rbp)
                                 mov
            e9 51 f7 ff ff
                                 jmpq 488bdd <_dl_map_object_deps+0x17d>
489487:
48948c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
            44 8b 00
                                       (%rax),%r8d
489490:
                                 mov
489493:
            45 85 c0
                                 test %r8d.%r8d
489496:
            0f 84 ef 04 00 00
                                     48998b <_dl_map_object_deps+0xf2b>
                                 ie
                                       0x10(%rax),%rax
48949c:
            48 8b 40 10
                                 mov
4894a0:
            48 85 c0
                                 test %rax,%rax
4894a3:
            75 eb
                                ine
                                      489490 <_dl_map_object_deps+0xa30>
4894a5:
            44 8b a5 58 ff ff ff
                                       -0xa8(%rbp),%r12d
                                 mov
                                       -0xd8(%rbp),%r14
4894ac:
            4c 8b b5 28 ff ff ff
                                 mov
4894b3:
            45 31 c0
                                 xor
                                      %r8d,%r8d
            4c 8b bd 38 ff ff ff
4894b6:
                                       -0xc8(%rbp),%r15
                                 mov
                                 jmpq 488f28 <_dl_map_object_deps+0x4c8>
4894bd:
            e9 66 fa ff ff
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
4894c2:
            49 83 bf b8 02 00 00 cmpq $0x0,0x2b8(%r15)
4894c8:
4894cf:
            00
            0f 84 9f fa ff ff
                                     488f75 < dl map object deps+0x515>
4894d0:
                                je
```

```
4894d6:
             48 8d 0d c3 1f 02 00 lea
                                      0x21fc3(%rip),%rcx
                                                              # 4ab4a0
< PRETTY FUNCTION .9646>
 4894dd:
             48 8d 35 04 1e 02 00 lea
                                      0x21e04(%rip),%rsi
                                                              # 4ab2e8
<__PRETTY_FUNCTION .10969+0x28>
 4894e4:
             48 8d 3d 05 1f 02 00 lea
                                      0x21f05(%rip),%rdi
                                                              # 4ab3f0
< PRETTY FUNCTION .10969+0x130>
 4894eb:
             ba d4 01 00 00
                                 mov
                                        $0x1d4,%edx
 4894f0:
             e8 7b 8a f7 ff
                                 callq 401f70 < assert fail>
 4894f5:
             0f 1f 00
                                 nopl (%rax)
                                 movq $0x0,-0x90(%rbp)
 4894f8:
             48 c7 85 70 ff ff ff
             00 00 00 00
 4894ff:
             e9 14 fc ff ff
                                 jmpq 48911c <_dl_map_object_deps+0x6bc>
 489503:
                                        %rax,%rdi
 489508:
             48 89 c7
                                 mov
 48950b:
             e8 90 ea fe ff
                                 callq 477fa0 <_dl_dst_count>
                                 test %rax,%rax
 489510:
             48 85 c0
                                        %rax,%r13
 489513:
             49 89 c5
                                 mov
 489516:
             48 8b 8d 10 ff ff ff
                                 mov
                                        -0xf0(%rbp),%rcx
             0f 84 24 f8 ff ff
                                      488d47 <_dl_map_object_deps+0x2e7>
 48951d:
                                 ie
                                        0x23058e(%rip),%r9d
489523:
             44 8b 0d 8e 05 23 00 mov
                                                                 # 6b9ab8
<__libc_enable_secure>
 48952a:
             45 85 c9
                                 test %r9d,%r9d
                                      489c23 <_dl_map_object_deps+0x11c3>
 48952d:
             0f 85 f0 06 00 00
                                 ine
 489533:
             48 89 cf
                                 mov
                                        %rcx,%rdi
             48 89 8d 08 ff ff ff
                                        %rcx,-0xf8(%rbp)
 489536:
                                 mov
                                 callq 4004c0 <.plt+0xa8>
 48953d:
             e8 7e 6f f7 ff
 489542:
             48 89 85 10 ff ff ff
                                 mov
                                        %rax,-0xf0(%rbp)
 489549:
             48 8b 85 60 ff ff ff
                                        -0xa0(%rbp),%rax
                                 mov
             48 8b 8d 08 ff ff ff
                                        -0xf8(%rbp),%rcx
 489550:
                                 mov
                                        0x338(%rax),%rdi
 489557:
             48 8b b8 38 03 00 00 mov
 48955e:
             48 85 ff
                                 test %rdi,%rdi
             0f 84 71 05 00 00
                                      489ad8 < dl map object deps+0x1078>
 489561:
                                 je
             48 83 ff ff
                                        $0xfffffffffffff,%rdi
 489567:
                                 cmp
 48956b:
             0f 84 16 05 00 00
                                 je
                                      489a87 <_dl_map_object_deps+0x1027>
 489571:
             48 89 8d 08 ff ff ff
                                        %rcx,-0xf8(%rbp)
                                 mov
                                 callq 4004c0 <.plt+0xa8>
 489578:
             e8 43 6f f7 ff
 48957d:
             48 8b 8d 08 ff ff ff
                                 mov
                                        -0xf8(\%rbp),\%rcx
 489584:
             48 83 3d 64 83 23 00 cmpq $0x14,0x238364(%rip)
                                                                  #6c18f0
< dl platformlen>
 48958b:
             14
 48958c:
             ba 14 00 00 00
                                        $0x14,%edx
                                 mov
 489591:
             48 8b bd 10 ff ff ff
                                        -0xf0(%rbp),%rdi
                                 mov
 489598:
             48 0f 43 15 50 83 23 cmovae 0x238350(%rip),%rdx
                                                                   # 6c18f0
< dl platformlen>
 48959f:
             00
 4895a0:
             48 89 ce
                                 mov
                                        %rcx,%rsi
 4895a3:
             48 89 8d 10 ff ff ff
                                        %rcx,-0xf0(%rbp)
                                 mov
 4895aa:
             48 39 c2
                                        %rax,%rdx
                                 cmp
             48 0f 43 c2
                                 cmovae %rdx,%rax
 4895ad:
             48 83 e8 04
                                       $0x4,%rax
 4895b1:
                                 sub
             49 Of af c5
                                 imul %r13,%rax
 4895b5:
             48 8d 44 07 1e
                                      0x1e(%rdi,%rax,1),%rax
 4895b9:
                                 lea
                                        -0xa0(%rbp),%rdi
 4895be:
             48 8b bd 60 ff ff ff
                                 mov
```

```
4895c5:
             48 83 e0 f0
                                      $0xfffffffffff0.%rax
                                 and
             48 29 c4
4895c9:
                                      %rax,%rsp
                                 sub
                                 lea
4895cc:
             48 8d 54 24 0f
                                      0xf(%rsp), %rdx
4895d1:
             48 83 e2 f0
                                 and $0xffffffffffff0,%rdx
4895d5:
             e8 76 ec fe ff
                                 callq 478250 <_dl_dst_substitute>
4895da:
             80 38 00
                                 cmpb $0x0,(%rax)
4895dd:
             0f 85 9c 04 00 00
                                 jne 489a7f <_dl_map_object_deps+0x101f>
4895e3:
             48 81 3b fd ff ff 7f
                                 cmpq $0x7ffffffd,(%rbx)
4895ea:
             48 8b 8d 10 ff ff ff
                                 mov -0xf0(%rbp), %rcx
                                     489c39 <_dl_map_object_deps+0x11d9>
4895f1:
             0f 84 42 06 00 00
                                 je
             f6 05 fa 82 23 00 01 testb $0x1,0x2382fa(%rip)
                                                              #6c18f8 < dl debug mask>
4895f7:
4895fe:
             0f 84 f2 f6 ff ff
                                      488cf6 < dl map object deps+0x296>
                                 ie
             48 8d 3d 1d 1d 02 00 lea
489604:
                                      0x21d1d(%rip),%rdi
                                                             # 4ab328
< PRETTY FUNCTION .10969+0x68>
48960b:
             48 89 ce
                                       %rcx,%rsi
                                 mov
             31 c0
                                      %eax,%eax
48960e:
                                 xor
489610:
             e8 8b 51 ff ff
                                 callq 47e7a0 <_dl_debug_printf>
             e9 dc f6 ff ff
                                 jmpq 488cf6 <_dl_map_object_deps+0x296>
489615:
                                 nopw 0x0(\%rax,\%rax,1)
48961a:
             66 0f 1f 44 00 00
489620:
             48 8b 85 60 ff ff ff
                                 mov
                                       -0xa0(%rbp),%rax
489627:
             48 8b 50 08
                                       0x8(%rax),%rdx
                                 mov
                                 cmpb $0x0,(%rdx)
48962b:
             80 3a 00
48962e:
             0f 84 63 03 00 00
                                 ie
                                     489997 < dl map object deps+0xf37>
                                      0x21d65(%rip),%rdi
             48 8d 3d 65 1d 02 00 lea
                                                             # 4ab3a0
489634:
< PRETTY FUNCTION .10969+0xe0>
48963b:
             48 89 ce
                                 mov
                                       %rcx,%rsi
48963e:
             31 c0
                                      %eax,%eax
                                 xor
             e8 5b 51 ff ff
                                 callq 47e7a0 < dl debug printf>
489640:
                                 jmpq 488d58 <_dl_map_object_deps+0x2f8>
489645:
             e9 0e f7 ff ff
48964a:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
                                 xor %eax,%eax
489650:
             31 c0
                                 jmpq 4892d4 <_dl_map_object_deps+0x874>
489652:
             e9 7d fc ff ff
489657:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48965e:
             00 00
             48 89 ce
                                       %rcx.%rsi
489660:
                                 mov
489663:
             eb 10
                                 jmp
                                       489675 <_dl_map_object_deps+0xc15>
             0f 1f 00
                                 nopl (%rax)
489665:
                                       0x8(%rdx),%rax
489668:
             48 3b 42 08
                                 cmp
                                     48975b <_dl_map_object_deps+0xcfb>
48966c:
             0f 84 e9 00 00 00
                                 ie
489672:
             48 89 d6
                                       %rdx,%rsi
                                 mov
489675:
             48 8b 56 10
                                       0x10(%rsi),%rdx
                                 mov
489679:
             48 85 d2
                                 test %rdx,%rdx
48967c:
             75 ea
                                      489668 <_dl_map_object_deps+0xc08>
                                 ine
             48 8b bd 40 ff ff ff
                                       -0xc0(%rbp),%rdi
48967e:
                                 mov
489685:
             66 0f 6f 01
                                 movdqa (%rcx),%xmm0
                                 movups %xmm0,(%rdi)
489689:
             0f 11 07
48968c:
             48 8b 41 10
                                 mov
                                       0x10(%rcx),%rax
             48 89 47 10
                                       %rax,0x10(%rdi)
489690:
                                 mov
             e9 5d f6 ff ff
                                 jmpq 488cf6 <_dl_map_object_deps+0x296>
489694:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
489699:
             f6 05 51 82 23 00 01 testb $0x1,0x238251(%rip)
                                                               #6c18f8 < dl debug mask>
4896a0:
             0f 84 49 f6 ff ff
                                     488cf6 <_dl_map_object_deps+0x296>
4896a7:
                                 ie
```

```
4896ad:
             48 8d 3d 74 1c 02 00 lea 0x21c74(%rip),%rdi
                                                               # 4ab328
< PRETTY FUNCTION .10969+0x68>
4896b4:
             4c 89 ee
                                  mov
                                        %r13,%rsi
4896b7:
             31 c0
                                       %eax.%eax
                                  xor
                                  callq 47e7a0 <_dl_debug_printf>
4896b9:
             e8 e2 50 ff ff
                                  jmpg 488cf6 < dl map object deps+0x296>
4896be:
             e9 33 f6 ff ff
4896c3:
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
             48 89 bd 60 ff ff ff
                                        %rdi,-0xa0(%rbp)
4896c8:
                                  mov
4896cf:
             4c 89 85 78 ff ff ff
                                        %r8,-0x88(%rbp)
                                  mov
4896d6:
             41 bc 01 00 00 00
                                  mov
                                        $0x1,%r12d
                                        %r8,%rax
4896dc:
             4c 89 c0
                                  mov
             e9 68 f4 ff ff
                                  jmpq 488b4c <_dl_map_object_deps+0xec>
4896df:
4896e4:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
4896e8:
             48 8b 40 08
                                        0x8(%rax),%rax
                                  mov
                                  cmpb $0x0,(%rax)
4896ec:
             80 38 00
                                       489ca4 < dl map object deps+0x1244>
4896ef:
             0f 85 af 05 00 00
                                  ine
4896f5:
             48 89 b5 08 ff ff ff
                                  mov
                                        %rsi,-0xf8(%rbp)
4896fc:
             4c 89 85 10 ff ff ff
                                        %r8,-0xf0(%rbp)
                                  mov
489703:
             e8 d8 66 ff ff
                                  callq 47fde0 < dl get origin>
489708:
             48 8b 8d 60 ff ff ff
                                  mov
                                        -0xa0(%rbp),%rcx
48970f:
             48 8d 50 ff
                                       -0x1(%rax),%rdx
                                  lea
489713:
             4c 8b 85 10 ff ff ff
                                  mov
                                        -0xf0(%rbp), %r8
48971a:
             48 8b b5 08 ff ff ff
                                  mov
                                        -0xf8(%rbp),%rsi
                                        $0xfffffffffffd,%rdx
489721:
             48 83 fa fd
                                  cmp
             48 89 81 38 03 00 00 mov
489725:
                                        %rax,0x338(%rcx)
48972c:
             Of 87 1e ff ff ff
                                      489650 <_dl_map_object_deps+0xbf0>
                                  ja
             48 89 c7
                                        %rax,%rdi
489732:
                                  mov
489735:
             48 89 b5 08 ff ff ff
                                        %rsi,-0xf8(%rbp)
                                  mov
                                        %r8,-0xf0(%rbp)
48973c:
             4c 89 85 10 ff ff ff
                                  mov
489743:
             e8 78 6d f7 ff
                                  callq 4004c0 <.plt+0xa8>
489748:
             4c 8b 85 10 ff ff ff
                                  mov
                                        -0xf0(%rbp), %r8
48974f:
             48 8b b5 08 ff ff ff
                                        -0xf8(%rbp),%rsi
                                  mov
489756:
             e9 79 fb ff ff
                                  jmpq
                                        4892d4 <_dl_map_object_deps+0x874>
48975b:
             48 8b bd 40 ff ff ff
                                        -0xc0(%rbp),%rdi
                                  mov
489762:
             48 89 4f 10
                                  mov
                                        %rcx,0x10(%rdi)
489766:
             48 8b bd 78 ff ff ff
                                  mov
                                        -0x88(%rbp),%rdi
48976d:
             48 8b 56 10
                                        0x10(%rsi),%rdx
                                  mov
489771:
             48 39 d7
                                        %rdx,%rdi
                                  cmp
489774:
             48 8b 52 10
                                        0x10(%rdx), %rdx
                                  mov
489778:
             48 0f 44 fe
                                  cmove %rsi,%rdi
48977c:
             48 89 bd 78 ff ff ff
                                        %rdi,-0x88(%rbp)
                                  mov
489783:
             48 89 56 10
                                  mov
                                        %rdx,0x10(%rsi)
489787:
             48 8b 70 20
                                        0x20(%rax),%rsi
                                  mov
48978b:
             48 8b 50 18
                                        0x18(%rax),%rdx
                                  mov
48978f:
             48 85 f6
                                  test %rsi,%rsi
489792:
             0f 85 65 f6 ff ff
                                       488dfd < dl map object deps+0x39d>
                                  ine
489798:
             e9 68 f6 ff ff
                                  jmpq 488e05 <_dl_map_object_deps+0x3a5>
48979d:
             0f 1f 00
                                  nopl (%rax)
             48 89 8d 40 ff ff ff
                                        %rcx,-0xc0(%rbp)
4897a0:
                                  mov
             48 89 8d 78 ff ff ff
                                        %rcx,-0x88(%rbp)
4897a7:
                                  mov
             e9 43 f5 ff ff
                                  impg 488cf6 < dl map object deps+0x296>
4897ae:
             85 f6
                                  test %esi,%esi
4897b3:
```

```
4897b5:
            0f 85 ac f8 ff ff
                                     489067 < dl map object deps+0x607>
4897bb:
            e9 7c f9 ff ff
                                impg 48913c < dl map object deps+0x6dc>
4897c0:
            48 8b 05 19 1b 23 00 mov
                                      0x231b19(%rip),%rax
                                                               # 6bb2e0 < dl ns>
4897c7:
            4c 39 f8
                                      %r15,%rax
                                cmp
4897ca:
            48 89 85 48 ff ff ff
                                      %rax,-0xb8(%rbp)
                                mov
                                     488fff <_dl_map_object_deps+0x59f>
4897d1:
            0f 85 28 f8 ff ff
                                ine
4897d7:
            85 db
                                test %ebx,%ebx
4897d9:
            0f 84 20 f8 ff ff
                                     488fff < dl map object deps+0x59f>
                                je
4897df:
            8d 43 ff
                                    -0x1(%rbx),%eax
                                lea
            4c 8b b5 78 ff ff ff
4897e2:
                                mov
                                      -0x88(%rbp),%r14
            89 9d 50 ff ff ff
                                      %ebx,-0xb0(%rbp)
4897e9:
                                mov
4897ef:
            45 31 ed
                                     %r13d,%r13d
                                xor
            44 89 85 40 ff ff ff
4897f2:
                                      %r8d,-0xc0(%rbp)
                                mov
4897f9:
            48 8d 04 c5 08 00 00 lea
                                     0x8(,%rax,8),%rax
489800:
            00
            48 89 85 70 ff ff ff
                                      %rax,-0x90(%rbp)
489801:
                                mov
489808:
            49 8d 46 08
                                lea
                                     0x8(%r14),%rax
48980c:
            48 89 c3
                                      %rax,%rbx
                                mov
48980f:
            90
                         nop
489810:
            49 8b 87 b8 02 00 00 mov
                                      0x2b8(%r15),%rax
489817:
            4e 8b 24 28
                                      (%rax,%r13,1),%r12
                                mov
48981b:
            4d 39 e7
                                cmp
                                      %r12,%r15
48981e:
            0f 84 2f 01 00 00
                                je
                                     489953 < dl map object deps+0xef3>
            49 8b 84 24 88 03 00 mov
                                      0x388(%r12),%rax
489824:
48982b:
            00
48982c:
            48 85 c0
                                test %rax,%rax
            74 0b
                                     48983c < dl map object deps+0xddc>
48982f:
            8b 48 08
                                mov 0x8(\%rax),\%ecx
489831:
                                test %ecx,%ecx
489834:
            85 c9
                                     489953 <_dl_map_object_deps+0xef3>
489836:
            0f 85 17 01 00 00
                                jne
            49 83 bc 24 e0 01 00 cmpg $0x0,0x1e0(%r12)
48983c:
            00 00
489843:
489845:
            0f 85 04 04 00 00
                                jne 489c4f <_dl_map_object_deps+0x11ef>
            49 83 bc 24 d0 01 00 cmpq $0x0,0x1d0(%r12)
48984b:
489852:
            00 00
489854:
            0f 85 f5 03 00 00
                                     489c4f < dl map object deps+0x11ef>
                                mov %r12,(%r14)
48985a:
            4d 89 26
            41 0f b6 84 24 14 03 movzbl 0x314(%r12),%eax
48985d:
489864:
            00 00
            48 89 d9
                                      %rbx,%rcx
489866:
                                mov
            4d 8b 84 24 b8 03 00 mov
                                      0x3b8(%r12),%r8
489869:
489870:
            00
                                     $0xffffff9f,%eax
489871:
            83 e0 9f
                                and
                                     $0x20,%eax
489874:
            83 c8 20
                                or
489877:
            4d 85 c0
                                test %r8,%r8
48987a:
            41 88 84 24 14 03 00 mov
                                      %al,0x314(%r12)
489881:
            00
            74 26
                                     4898aa <_dl_map_object_deps+0xe4a>
489882:
                                je
            49 8b 40 08
                                mov 0x8(%r8),%rax
489884:
                                test %rax,%rax
489888:
            48 85 c0
            74 1d
                                     4898aa <_dl_map_object_deps+0xe4a>
48988b:
                                je
48988d:
            49 83 c0 08
                                add
                                     $0x8,%r8
```

```
489891:
            f6 80 14 03 00 00 60 testb $0x60.0x314(%rax)
489898:
            0f 84 42 01 00 00
                                     4899e0 <_dl_map_object_deps+0xf80>
                                 je
                                      $0x8,%r8
48989e:
            49 83 c0 08
                                 add
4898a2:
            49 8b 00
                                       (%r8),%rax
                                 mov
4898a5:
            48 85 c0
                                 test %rax,%rax
4898a8:
            75 e7
                                      489891 < dl map object deps+0xe31>
                                 ine
4898aa:
            4c 29 f1
                                 sub
                                      %r14,%rcx
4898ad:
            48 c1 f9 03
                                      $0x3.%rcx
                                 sar
4898b1:
            3b 8d 50 ff ff ff
                                       -0xb0(%rbp),%ecx
                                 cmp
4898b7:
            89 cf
                                       %ecx,%edi
                                 mov
                                     489c04 <_dl_map_object_deps+0x11a4>
4898b9:
            0f 87 45 03 00 00
                                 ja
                                 test %ecx.%ecx
4898bf:
            85 c9
4898c1:
            74 3b
                                     4898fe < dl map object deps+0xe9e>
                                 ie
4898c3:
            49 8b 06
                                       (%r14),%rax
                                 mov
                                      %edx,%edx
4898c6:
            31 d2
                                 xor
            80 a0 14 03 00 00 9f andb $0x9f,0x314(%rax)
4898c8:
4898cf:
            48 89 d8
                                 mov
                                       %rbx,%rax
                                       4898f7 <_dl_map_object_deps+0xe97>
4898d2:
            eb 23
                                 jmp
4898d4:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
4898d8:
            48 8b 30
                                 mov
                                       (%rax),%rsi
4898db:
            80 a6 14 03 00 00 9f andb $0x9f,0x314(%rsi)
4898e2:
            48 8b 30
                                 mov
                                       (%rax),%rsi
4898e5:
            48 83 be c0 00 00 00 cmpg $0x0,0xc0(\%rsi)
4898ec:
            00
            0f 85 d5 00 00 00
4898ed:
                                      4899c8 < _dl_map_object_deps+0xf68>
                                 ine
4898f3:
            48 83 c0 08
                                 add
                                      $0x8,%rax
                                      $0x1,%edx
4898f7:
            83 c2 01
                                 add
4898fa:
            39 d7
                                       %edx,%edi
                                 cmp
                                      4898d8 <_dl_map_object_deps+0xe78>
4898fc:
            75 da
                                 ine
4898fe:
            89 c8
                                       %ecx,%eax
                                 mov
            48 89 8d 58 ff ff ff
489900:
                                 mov
                                       %rcx,-0xa8(%rbp)
            48 8d 14 c5 10 00 00 lea
                                     0x10(,%rax,8),%rdx
489907:
48990e:
            00
48990f:
            48 89 d7
                                       %rdx,%rdi
                                 mov
            48 89 95 60 ff ff ff
                                       %rdx,-0xa0(%rbp)
489912:
                                 mov
489919:
            e8 72 62 f9 ff
                                 callq 41fb90 < libc malloc>
48991e:
            48 85 c0
                                     %rax,%rax
                                 test
489921:
            49 89 84 24 88 03 00 mov
                                       %rax,0x388(%r12)
489928:
            00
            48 8b 95 60 ff ff ff
                                       -0xa0(%rbp),%rdx
489929:
                                 mov
489930:
            48 8b 8d 58 ff ff ff
                                       -0xa8(%rbp),%rcx
                                 mov
489937:
            0f 84 99 02 00 00
                                 ie
                                     489bd6 <_dl_map_object_deps+0x1176>
48993d:
            48 8d 78 10
                                     0x10(%rax),%rdi
                                 lea
            89 48 08
489941:
                                 mov
                                       %ecx,0x8(%rax)
489944:
            48 83 ea 10
                                 sub
                                      $0x10,%rdx
489948:
            4c 89 f6
                                       %r14,%rsi
                                 mov
48994b:
            48 89 38
                                       %rdi,(%rax)
                                 mov
            e8 e5 6a f7 ff
                                 cally 400438 < .plt + 0x20 >
48994e:
489953:
            49 83 c5 08
                                      $0x8,%r13
                                 add
            4c 39 ad 70 ff ff ff
489957:
                                       %r13,-0x90(%rbp)
                                 cmp
48995e:
            Of 85 ac fe ff ff
                                      489810 <_dl_map_object_deps+0xdb0>
                                 ine
            48 8b 85 48 ff ff ff
                                       -0xb8(%rbp),%rax
489964:
                                 mov
```

```
48996b:
             8b 9d 50 ff ff ff
                                       -0xb0(%rbp),%ebx
                                 mov
489971:
             44 8b 85 40 ff ff ff
                                       -0xc0(%rbp),%r8d
                                 mov
489978:
             4c 8b a8 b8 02 00 00 mov
                                       0x2b8(%rax),%r13
48997f:
             e9 7b f6 ff ff
                                       488fff < dl map object deps+0x59f>
                                 impa
489984:
             89 de
                                        %ebx,%esi
                                 mov
489986:
             e9 68 fa ff ff
                                       4893f3 < dl map object deps+0x993>
                                 jmpq
48998b:
             48 89 85 50 ff ff ff
                                        %rax,-0xb0(%rbp)
                                 mov
             e9 49 f5 ff ff
                                       488ee0 < dl map object deps+0x480 >
489992:
                                 jmpg
489997:
             48 8b 05 0a 01 23 00 mov
                                        0x23010a(%rip),%rax
                                                                # 6b9aa8 < dl argv>
48999e:
             48 8b 10
                                 mov
                                       (%rax),%rdx
4899a1:
             48 8d 05 ff ab 01 00 lea
                                      0x1abff(%rip),%rax
                                                             # 4a45a7
< PRETTY FUNCTION .9658+0xb7>
4899a8:
             48 85 d2
                                 test %rdx,%rdx
4899ab:
             48 0f 44 d0
                                 cmove %rax,%rdx
                                 jmpq 489634 <_dl_map_object_deps+0xbd4>
4899af:
             e9 80 fc ff ff
             48 8b bd 70 ff ff ff
                                       -0x90(%rbp),%rdi
4899b4:
                                 mov
4899bb:
             e8 f0 77 ff ff
                                 callq 4811b0 <_dl_exception_free>
4899c0:
             e9 31 f3 ff ff
                                 jmpq 488cf6 <_dl_map_object_deps+0x296>
4899c5:
             0f 1f 00
                                 nopl (%rax)
4899c8:
             41 80 8c 24 15 03 00 orb
                                      $0x80,0x315(%r12)
4899cf:
             00 80
4899d1:
             e9 1d ff ff ff
                                 jmpq 4898f3 <_dl_map_object_deps+0xe93>
4899d6:
             66 2e 0f 1f 84 00 00
                                nopw %cs:0x0(%rax,%rax,1)
4899dd:
             00 00 00
                                        %rax,(%rcx)
4899e0:
             48 89 01
                                 mov
4899e3:
             0f b6 90 14 03 00 00 movzbl 0x314(%rax),%edx
                                       $0x8,%rcx
4899ea:
             48 83 c1 08
                                 add
             4c 8b 88 b8 03 00 00 mov
                                       0x3b8(%rax),%r9
4899ee:
                                       $0xffffff9f,%edx
4899f5:
             83 e2 9f
                                 and
4899f8:
             83 ca 20
                                      $0x20,%edx
                                 or
4899fb:
             4d 85 c9
                                 test %r9,%r9
             88 90 14 03 00 00
4899fe:
                                 mov
                                       %dl,0x314(%rax)
489a04:
             0f 84 94 fe ff ff
                                 je
                                      48989e <_dl_map_object_deps+0xe3e>
489a0a:
             49 8b 41 08
                                       0x8(%r9),%rax
                                 mov
                                 test %rax,%rax
489a0e:
             48 85 c0
489a11:
             0f 84 87 fe ff ff
                                 je
                                      48989e <_dl_map_object_deps+0xe3e>
             49 83 c1 08
                                 add $0x8,%r9
489a17:
             f6 80 14 03 00 00 60 testb $0x60,0x314(%rax)
489a1b:
489a22:
             74 11
                                      489a35 <_dl_map_object_deps+0xfd5>
                                 je
489a24:
             49 83 c1 08
                                 add
                                      $0x8,%r9
             49 8b 01
                                 mov (%r9),%rax
489a28:
489a2b:
             48 85 c0
                                 test %rax,%rax
489a2e:
             75 eb
                                      489a1b <_dl_map_object_deps+0xfbb>
                                 ine
                                 jmpq 48989e <_dl_map_object_deps+0xe3e>
489a30:
             e9 69 fe ff ff
489a35:
             48 89 01
                                 mov
                                       %rax,(%rcx)
489a38:
             0f b6 90 14 03 00 00 movzbl 0x314(%rax),%edx
489a3f:
             48 83 c1 08
                                 add
                                       $0x8,%rcx
             4c 8b 90 b8 03 00 00 mov
489a43:
                                       0x3b8(%rax),%r10
             83 e2 9f
                                       $0xffffff9f,%edx
489a4a:
                                 and
                                      $0x20,%edx
489a4d:
             83 ca 20
                                 or
                                      %r10,%r10
489a50:
             4d 85 d2
                                 test
489a53:
             88 90 14 03 00 00
                                       %dl,0x314(%rax)
                                 mov
```

```
74 c9
489a59:
                                     489a24 < dl map object deps+0xfc4>
489a5b:
            49 8b 42 08
                                       0x8(%r10),%rax
                                mov
489a5f:
            48 85 c0
                                test %rax,%rax
489a62:
            74 c0
                                     489a24 < dl map object deps+0xfc4>
                                ie
            49 83 c2 08
                                     $0x8,%r10
489a64:
                                add
489a68:
            f6 80 14 03 00 00 60 testb $0x60,0x314(%rax)
489a6f:
            74 1d
                                     489a8e <_dl_map_object_deps+0x102e>
                                je
            49 83 c2 08
                                      $0x8,%r10
489a71:
                                add
                                      (%r10),%rax
            49 8b 02
489a75:
                                mov
489a78:
            48 85 c0
                                test %rax,%rax
                                     489a68 < dl map object deps+0x1008>
489a7b:
            75 eb
                                ine
            eb a5
                                      489a24 < _dl_map_object_deps+0xfc4>
489a7d:
                                imp
489a7f:
            48 89 c1
                                       %rax.%rcx
                                mov
489a82:
            e9 c0 f2 ff ff
                                jmpq 488d47 <_dl_map_object_deps+0x2e7>
                                      %eax,%eax
489a87:
            31 c0
                                xor
            e9 f6 fa ff ff
                                jmpg 489584 < dl map object deps+0xb24>
489a89:
489a8e:
            48 89 01
                                mov
                                       %rax,(%rcx)
489a91:
            0f b6 90 14 03 00 00 movzbl 0x314(%rax),%edx
489a98:
            48 83 c1 08
                                add
                                      $0x8,%rcx
489a9c:
            83 e2 9f
                                and
                                      $0xffffff9f,%edx
489a9f:
            83 ca 20
                                     $0x20,%edx
                                or
489aa2:
            88 90 14 03 00 00
                                mov
                                       %dl,0x314(%rax)
489aa8:
            48 8b 90 b8 03 00 00 mov
                                      0x3b8(\%rax),\%rdx
            48 85 d2
                                test %rdx,%rdx
489aaf:
489ab2:
            74 bd
                                     489a71 <_dl_map_object_deps+0x1011>
                                je
489ab4:
            48 8b 42 08
                                mov 0x8(\%rdx),\%rax
                                test %rax,%rax
489ab8:
            48 85 c0
            74 b4
489abb:
                                     489a71 < dl map object deps+0x1011>
                                je
                                      $0x8,%rdx
489abd:
            48 83 c2 08
                                add
489ac1:
            f6 80 14 03 00 00 60 testb $0x60,0x314(%rax)
                                     489b42 < dl map object deps+0x10e2>
489ac8:
            74 78
                                ie
                                add $0x8,%rdx
489aca:
            48 83 c2 08
                                      (%rdx),%rax
489ace:
            48 8b 02
                                mov
489ad1:
            48 85 c0
                                test %rax,%rax
                                     489ac1 < dl_map_object_deps+0x1061 >
489ad4:
            75 eb
                                ine
489ad6:
            eb 99
                                jmp
                                      489a71 < dl map object deps+0x1011>
                                mov 0x8(%rax),%rax
            48 8b 40 08
489ad8:
                                cmpb $0x0,(%rax)
489adc:
            80 38 00
489adf:
            0f 85 de 01 00 00
                                     489cc3 <_dl_map_object_deps+0x1263>
                                ine
                                       %rcx,-0xf8(%rbp)
489ae5:
            48 89 8d 08 ff ff ff
                                mov
489aec:
            e8 ef 62 ff ff
                                callq 47fde0 <_dl_get_origin>
489af1:
            48 8b 8d 60 ff ff ff
                                mov
                                       -0xa0(%rbp),%rcx
489af8:
            48 8d 50 ff
                                     -0x1(%rax),%rdx
                                lea
                                       $0xfffffffffffd,%rdx
489afc:
            48 83 fa fd
                                cmp
489b00:
            48 89 81 38 03 00 00 mov
                                       %rax,0x338(%rcx)
489b07:
            48 8b 8d 08 ff ff ff
                                       -0xf8(%rbp),%rcx
                                mov
489b0e:
            0f 87 73 ff ff ff
                                     489a87 <_dl_map_object_deps+0x1027>
                                ja
            48 89 c7
                                       %rax,%rdi
489b14:
                                mov
            48 89 8d 08 ff ff ff
                                       %rcx,-0xf8(%rbp)
489b17:
                                mov
489b1e:
            e8 9d 69 f7 ff
                                callq 4004c0 <.plt+0xa8>
            48 8b 8d 08 ff ff ff
                                       -0xf8(%rbp), %rcx
489b23:
                                mov
489b2a:
            e9 55 fa ff ff
                                jmpq
                                       489584 <_dl_map_object_deps+0xb24>
```

```
489b2f:
             48 01 85 18 ff ff ff
                                 add
                                       %rax.-0xe8(%rbp)
489b36:
             4c 89 b5 20 ff ff ff
                                        %r14,-0xe0(%rbp)
                                 mov
489b3d:
             e9 9b f0 ff ff
                                 impq 488bdd < dl map object deps+0x17d>
489b42:
             48 89 01
                                 mov
                                        %rax,(%rcx)
489b45:
             0f b6 b0 14 03 00 00 movzbl 0x314(%rax),%esi
489b4c:
             48 83 c1 08
                                 add
                                       $0x8,%rcx
489b50:
             4c 8b 98 b8 03 00 00 mov
                                        0x3b8(%rax),%r11
             83 e6 9f
                                       $0xffffff9f.%esi
489b57:
                                 and
             83 ce 20
                                      $0x20,%esi
489b5a:
                                 or
489b5d:
             4d 85 db
                                 test %r11,%r11
             40 88 b0 14 03 00 00 mov
489b60:
                                       %sil,0x314(%rax)
             0f 84 5d ff ff ff
                                      489aca <_dl_map_object_deps+0x106a>
489b67:
                                 ie
489b6d:
             49 8b 73 08
                                 mov 0x8(%r11),%rsi
489b71:
             48 85 f6
                                 test %rsi,%rsi
489b74:
             0f 84 50 ff ff ff
                                      489aca <_dl_map_object_deps+0x106a>
                                 je
                                       $0x8,%r11
489b7a:
             49 83 c3 08
                                 add
489b7e:
             f6 86 14 03 00 00 60 testb $0x60,0x314(%rsi)
489b85:
             74 11
                                      489b98 <_dl_map_object_deps+0x1138>
                                 je
489b87:
             49 83 c3 08
                                 add
                                       $0x8,%r11
                                        (%r11),%rsi
489b8b:
             49 8b 33
                                 mov
489b8e:
             48 85 f6
                                 test %rsi,%rsi
                                      489b7e <_dl_map_object_deps+0x111e>
489b91:
             75 eb
                                 ine
489b93:
             e9 32 ff ff ff
                                 jmpg 489aca < dl map object deps+0x106a>
             48 89 cf
                                        %rcx,%rdi
489b98:
                                 mov
             48 89 95 60 ff ff ff
489b9b:
                                        %rdx,-0xa0(%rbp)
                                 mov
489ba2:
             e8 c9 ed ff ff
                                 callq 488970 < dl build local scope>
             49 83 c3 08
                                 add
                                       $0x8,%r11
489ba7:
                                        (%r11),%rsi
489bab:
             49 8b 33
                                 mov
                                      (%rcx,%rax,8),%rcx
489bae:
             48 8d 0c c1
                                 lea
489bb2:
             48 8b 95 60 ff ff ff
                                       -0xa0(%rbp),%rdx
                                 mov
                                 test %rsi,%rsi
489bb9:
             48 85 f6
                                      489b7e <_dl_map_object_deps+0x111e>
489bbc:
             75 c0
                                 ine
489bbe:
             e9 07 ff ff ff
                                 jmpq 489aca <_dl_map_object_deps+0x106a>
489bc3:
             48 8d 0d 36 17 02 00 lea
                                      0x21736(%rip),%rcx
                                                               # 4ab300
<__PRETTY_FUNCTION___.10969+0x40>
489bca:
             31 d2
                                 xor
                                       %edx,%edx
489bcc:
             4c 89 ee
                                        %r13,%rsi
                                 mov
489bcf:
             31 ff
                                %edi.%edi
                           xor
489bd1:
             e8 da 8c ff ff
                                 callq 4828b0 < dl signal error>
489bd6:
             49 8b 77 08
                                 mov
                                        0x8(%r15),%rsi
489bda:
             48 8d 0d 37 18 02 00 lea
                                      0x21837(%rip),%rcx
                                                               # 4ab418
< PRETTY FUNCTION .10969+0x158>
                                       %edx,%edx
489be1:
             31 d2
                                 xor
             bf 0c 00 00 00
                                        $0xc,%edi
489be3:
                                 mov
489be8:
             e8 c3 8c ff ff
                                 callq 4828b0 <_dl_signal_error>
489bed:
             41 83 f8 ff
                                        $0xfffffffff.%r8d
                                 cmp
489bf1:
             75 03
                                       489bf6 <_dl_map_object_deps+0x1196>
                                 jne
489bf3:
             45 31 c0
                                       %r8d,%r8d
                                 xor
             48 8d 75 80
                                      -0x80(%rbp),%rsi
489bf6:
                                 lea
             31 d2
                                       %edx,%edx
489bfa:
                                 xor
             44 89 c7
                                       %r8d,%edi
489bfc:
                                 mov
489bff:
             e8 5c 8c ff ff
                                 callq 482860 <_dl_signal_exception>
```

```
489c04:
            48 8d 0d 95 18 02 00 lea 0x21895(%rip),%rcx
                                                            # 4ab4a0
< PRETTY FUNCTION .9646>
489c0b:
            48 8d 35 d6 16 02 00 lea
                                    0x216d6(%rip),%rsi
                                                           # 4ab2e8
<__PRETTY_FUNCTION .10969+0x28>
489c12:
            48 8d 3d d9 16 02 00 lea 0x216d9(%rip),%rdi
                                                           # 4ab2f2
< PRETTY FUNCTION .10969+0x32>
489c19:
            ba 0c 02 00 00
                                mov
                                      $0x20c,%edx
489c1e:
            e8 4d 83 f7 ff
                                callq 401f70 < assert fail>
489c23:
            49 89 c8
                                      %rcx,%r8
                                mov
489c26:
            48 8d 0d d3 16 02 00 lea
                                    0x216d3(%rip),%rcx
                                                            # 4ab300
<__PRETTY_FUNCTION__.10969+0x40>
                                     %edx,%edx
489c2d:
            31 d2
                                xor
489c2f:
            4c 89 c6
                                      %r8,%rsi
                                mov
489c32:
            31 ff
                              %edi,%edi
                         xor
489c34:
            e8 77 8c ff ff
                                callq 4828b0 <_dl_signal_error>
                                      %rcx,%r8
489c39:
            49 89 c8
                                mov
489c3c:
            48 8d 0d 35 17 02 00 lea
                                    0x21735(%rip),%rcx
                                                            # 4ab378
< PRETTY FUNCTION .10969+0xb8>
489c43:
            31 d2
                                     %edx,%edx
                                xor
489c45:
            4c 89 c6
                                mov
                                      %r8,%rsi
489c48:
            31 ff
                              %edi,%edi
                         xor
489c4a:
            e8 61 8c ff ff
                                callq 4828b0 <_dl_signal_error>
489c4f:
            49 8b 74 24 08
                                mov 0x8(%r12),%rsi
            48 8d 0d e5 17 02 00 lea
489c54:
                                    0x217e5(%rip),%rcx
                                                           # 4ab440
< PRETTY FUNCTION .10969+0x180>
489c5b:
            31 d2
                                     %edx,%edx
                                xor
489c5d:
            bf 16 00 00 00
                                      $0x16,%edi
                                mov
489c62:
                                callq 4828b0 < dl signal error>
            e8 49 8c ff ff
            48 8d 0d 32 18 02 00 lea 0x21832(%rip),%rcx
489c67:
                                                            # 4ab4a0
<__PRETTY_FUNCTION__.9646>
            48 8d 35 73 16 02 00 lea 0x21673(%rip),%rsi
489c6e:
                                                           # 4ab2e8
<__PRETTY_FUNCTION___.10969+0x28>
489c75:
            48 8d 3d f4 17 02 00 lea 0x217f4(%rip),%rdi
                                                           # 4ab470
<__PRETTY_FUNCTION___.10969+0x1b0>
            ba 25 02 00 00
                                      $0x225,%edx
489c7c:
                                mov
489c81:
            e8 ea 82 f7 ff
                                callq 401f70 < assert fail>
                                      -0xc8(%rbp), %r15
            4c 8b bd 38 ff ff ff
                                mov
489c86:
                                    0x2173c(%rip),%rcx
            48 8d 0d 3c 17 02 00 lea
                                                            # 4ab3d0
489c8d:
<__PRETTY_FUNCTION__.10969+0x110>
489c94:
            31 d2
                                xor
                                     %edx,%edx
489c96:
            bf 0c 00 00 00
                                      $0xc,%edi
                                mov
489c9b:
            49 8b 77 08
                                mov
                                      0x8(%r15),%rsi
489c9f:
            e8 0c 8c ff ff
                                callq 4828b0 < dl signal error>
            48 8d 0d f5 17 02 00 lea 0x217f5(%rip),%rcx
489ca4:
                                                           # 4ab4a0
<__PRETTY_FUNCTION__.9646>
            48 8d 35 36 16 02 00 lea
                                    0x21636(%rip),%rsi
                                                           # 4ab2e8
489cab:
<__PRETTY_FUNCTION__.10969+0x28>
            48 8d 3d 57 ae 01 00 lea
                                    0x1ae57(%rip),%rdi
489cb2:
                                                           # 4a4b10
<__PRETTY_FUNCTION___.9658+0x620>
                                      $0xf5,%edx
489cb9:
            ba f5 00 00 00
                                mov
489cbe:
                                callq 401f70 < assert fail>
            e8 ad 82 f7 ff
```

```
489cc3:
             48 8d 0d d6 17 02 00 lea
                                      0x217d6(%rip),%rcx
                                                              # 4ab4a0
< PRETTY FUNCTION .9646>
 489cca:
             48 8d 35 17 16 02 00 lea
                                      0x21617(%rip),%rsi
                                                             # 4ab2e8
<__PRETTY_FUNCTION .10969+0x28>
 489cd1:
             48 8d 3d 38 ae 01 00 lea
                                      0x1ae38(%rip),%rdi
                                                             # 4a4b10
< PRETTY FUNCTION .9658+0x620>
 489cd8:
             ba 21 01 00 00
                                 mov
                                       $0x121,%edx
489cdd:
                                 callq 401f70 <__assert_fail>
             e8 8e 82 f7 ff
 489ce2:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 489ce9:
             00 00 00
             0f 1f 40 00
                                 nopl 0x0(\%rax)
 489cec:
0000000000489cf0 < dl init>:
 489cf0:
             41 57
                                 push %r15
 489cf2:
             41 56
                                       %r14
                                 push
             49 89 ff
                                       %rdi,%r15
 489cf4:
                                 mov
 489cf7:
             41 55
                                 push
                                       %r13
489cf9:
             41 54
                                       %r12
                                 push
 489cfb:
             49 89 cd
                                 mov
                                       %rcx,%r13
 489cfe:
             55
                          push %rbp
 489cff:
             53
                          push
                                %rbx
 489d00:
             89 f5
                                 mov
                                       %esi,%ebp
 489d02:
             49 89 d4
                                       %rdx,%r12
                                 mov
                                      $0x18,%rsp
 489d05:
             48 83 ec 18
                                 sub
                                       0x237c80(%rip),%rbx
 489d09:
             48 8b 1d 80 7c 23 00 mov
                                                                # 6c1990 <_dl_initfirst>
 489d10:
             4c 8b b7 40 01 00 00 mov
                                       0x140(%rdi),%r14
             4c 8b 87 48 01 00 00 mov
                                       0x148(%rdi),%r8
 489d17:
             48 85 db
                                 test %rbx,%rbx
 489d1e:
             0f 85 c1 01 00 00
                                      489ee8 <_dl_init+0x1f8>
 489d21:
                                 jne
 489d27:
             4d 85 f6
                                      %r14,%r14
                                 test
             74 09
                                      489d35 < dl init+0x45>
 489d2a:
                                 je
                                 test %r8,%r8
 489d2c:
             4d 85 c0
 489d2f:
             0f 85 4b 01 00 00
                                 ine
                                      489e80 <_dl_init+0x190>
 489d35:
             41 8b 9f c0 02 00 00 mov
                                       0x2c0(%r15),%ebx
 489d3c:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
 489d40:
             83 eb 01
                                 sub
                                      $0x1,%ebx
 489d43:
             83 fb ff
                                       $0xffffffff,%ebx
                                 cmp
 489d46:
             0f 84 bd 00 00 00
                                      489e09 < dl init+0x119>
                                 je
 489d4c:
             49 8b 97 b8 03 00 00 mov
                                       0x3b8(%r15),%rdx
             89 d8
                                       %ebx,%eax
 489d53:
                                 mov
 489d55:
             4c 8b 34 c2
                                       (%rdx,%rax,8),%r14
                                 mov
 489d59:
             41 0f b6 86 14 03 00 movzbl 0x314(%r14),%eax
 489d60:
             00
             a8 08
 489d61:
                                 test $0x8,%al
 489d63:
             75 db
                                 jne
                                      489d40 <_dl_init+0x50>
 489d65:
             49 8b 76 08
                                       0x8(%r14),%rsi
                                 mov
 489d69:
             83 c8 08
                                      $0x8,%eax
                                 or
             41 88 86 14 03 00 00 mov
                                       %al,0x314(%r14)
 489d6c:
             0f b6 16
                                 movzbl (%rsi),%edx
 489d73:
             84 d2
                                 test %dl,%dl
 489d76:
             0f 84 5a 01 00 00
                                      489ed8 < dl init+0x1e8>
 489d78:
                                 je
                                       0xa0(%r14),%rax
 489d7e:
             49 8b 86 a0 00 00 00 mov
```

```
489d85:
            48 85 c0
                                 test %rax,%rax
489d88:
            0f 84 92 00 00 00
                                      489e20 < dl init+0x130 >
                                 ie
489d8e:
            f6 05 63 7b 23 00 02 testb $0x2,0x237b63(%rip)
                                                                #6c18f8 < dl debug mask>
489d95:
            0f 85 a5 00 00 00
                                      489e40 < dl init+0x150 >
                                 ine
489d9b:
            48 8b 40 08
                                       0x8(%rax),%rax
                                 mov
489d9f:
            49 03 06
                                       (%r14),%rax
                                 add
489da2:
            4c 89 ea
                                        %r13,%rdx
                                 mov
            4c 89 e6
                                        %r12.%rsi
489da5:
                                 mov
489da8:
            89 ef
                                       %ebp,%edi
                                 mov
489daa:
            ff d0
                          callq *%rax
            49 8b 8e 08 01 00 00 mov
489dac:
                                       0x108(%r14),%rcx
            48 85 c9
                                      %rcx.%rcx
489db3:
                                 test
489db6:
            74 88
                                      489d40 < dl init + 0x50 >
                                 je
489db8:
            49 8b 86 18 01 00 00 mov
                                       0x118(%r14),%rax
489dbf:
            48 8b 50 08
                                       0x8(%rax),%rdx
                                 mov
489dc3:
            49 8b 06
                                       (%r14),%rax
                                 mov
489dc6:
            48 03 41 08
                                 add
                                       0x8(%rcx),%rax
489dca:
            48 c1 ea 03
                                      $0x3,%rdx
                                 shr
489dce:
            85 d2
                                 test %edx,%edx
489dd0:
            49 89 c6
                                 mov
                                       %rax,%r14
489dd3:
            0f 84 67 ff ff ff
                                      489d40 < dl init+0x50 >
                                 je
489dd9:
            83 ea 01
                                 sub
                                       $0x1,%edx
489ddc:
            48 8d 44 d0 08
                                 lea
                                      0x8(%rax,%rdx,8),%rax
            48 89 04 24
489de1:
                                 mov
                                       %rax,(%rsp)
489de5:
            0f 1f 00
                                 nopl
                                       (%rax)
489de8:
            4c 89 ea
                                       %r13,%rdx
                                 mov
            4c 89 e6
                                       %r12,%rsi
489deb:
                                 mov
489dee:
            89 ef
                                       %ebp,%edi
                                 mov
489df0:
            41 ff 16
                                 callq *(%r14)
489df3:
            49 83 c6 08
                                       $0x8,%r14
                                 add
489df7:
            4c 3b 34 24
                                       (%rsp),%r14
                                 cmp
                                      489de8 <_dl_init+0xf8>
489dfb:
            75 eb
                                 jne
489dfd:
            83 eb 01
                                 sub
                                       $0x1,%ebx
489e00:
            83 fb ff
                                       $0xffffffff,%ebx
                                 cmp
489e03:
            0f 85 43 ff ff ff
                                 ine
                                      489d4c < dl init+0x5c>
489e09:
            48 83 c4 18
                                 add
                                       $0x18,%rsp
                                %rbx
489e0d:
            5b
                          pop
489e0e:
            5d
                                %rbp
                          pop
489e0f:
            41 5c
                                       %r12
                                 DOD
            41 5d
                                       %r13
489e11:
                                 pop
            41 5e
                                       %r14
489e13:
                                 pop
489e15:
            41 5f
                                       %r15
                                 pop
489e17:
            c3
                          retq
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
489e18:
489e1f:
489e20:
            49 8b 8e 08 01 00 00 mov
                                       0x108(%r14),%rcx
489e27:
            48 85 c9
                                 test %rcx,%rcx
            0f 84 10 ff ff ff
                                      489d40 <_dl_init+0x50>
489e2a:
                                 je
            f6 05 c1 7a 23 00 02 testb $0x2,0x237ac1(%rip)
489e30:
                                                                # 6c18f8 <_dl_debug_mask>
            0f 84 7b ff ff ff
                                      489db8 < dl init+0xc8>
489e37:
                                 ie
489e3d:
            0f 1f 00
                                 nopl (%rax)
                                 test %dl,%dl
489e40:
            84 d2
```

```
489e42:
             75 18
                                       489e5c < dl init+0x16c >
489e44:
             48 8b 05 5d fc 22 00 mov
                                        0x22fc5d(%rip),%rax
                                                                 # 6b9aa8 <_dl_argv>
489e4b:
             48 8b 30
                                  mov
                                        (%rax),%rsi
489e4e:
             48 8d 05 52 a7 01 00 lea
                                      0x1a752(%rip),%rax
                                                               # 4a45a7
<__PRETTY_FUNCTION__.9658+0xb7>
489e55:
             48 85 f6
                                  test %rsi,%rsi
489e58:
             48 0f 44 f0
                                  cmove %rax,%rsi
             48 8d 3d 51 16 02 00 lea
                                       0x21651(%rip),%rdi
489e5c:
                                                               # 4ab4b4
<__PRETTY_FUNCTION___.9646+0x14>
                                       %eax,%eax
489e63:
             31 c0
                                  xor
             e8 36 49 ff ff
                                  callq 47e7a0 < dl debug printf>
489e65:
             49 8b 86 a0 00 00 00 mov
                                        0xa0(%r14),%rax
489e6a:
                                  test %rax,%rax
489e71:
             48 85 c0
489e74:
             0f 85 21 ff ff ff
                                       489d9b < dl init+0xab >
                                  ine
             e9 2d ff ff ff
                                  jmpq 489dac <_dl_init+0xbc>
489e7a:
489e7f:
             90
                           nop
489e80:
             49 8b 58 08
                                        0x8(%r8),%rbx
                                  mov
             48 c1 eb 03
                                       $0x3,%rbx
489e84:
                                  shr
489e88:
             85 db
                                  test %ebx,%ebx
489e8a:
             0f 84 a5 fe ff ff
                                      489d35 <_dl_init+0x45>
                                  je
489e90:
             f6 05 61 7a 23 00 02 testb $0x2,0x237a61(%rip)
                                                                #6c18f8 < dl debug mask>
489e97:
             0f 85 45 01 00 00
                                  jne
                                       489fe2 <_dl_init+0x2f2>
489e9d:
             49.8b.07
                                  mov
                                        (%r15),%rax
             49 03 46 08
                                       0x8(%r14),%rax
489ea0:
                                  add
             8d 53 ff
                                       -0x1(\%rbx),\%edx
489ea4:
                                  lea
489ea7:
             48 8d 58 08
                                  lea
                                      0x8(%rax),%rbx
             4c 8d 34 d3
                                      (%rbx,%rdx,8),%r14
489eab:
                                  lea
489eaf:
             eb 0b
                                       489ebc < dl init+0x1cc>
                                  jmp
             0f 1f 80 00 00 00 00
                                 nopl 0x0(\%rax)
489eb1:
489eb8:
             48 83 c3 08
                                  add
                                       $0x8,%rbx
             4c 89 ea
489ebc:
                                        %r13,%rdx
                                  mov
             4c 89 e6
                                        %r12,%rsi
489ebf:
                                  mov
489ec2:
             89 ef
                                  mov
                                        %ebp,%edi
489ec4:
             ff 10
                           callq *(%rax)
                                        %rbx,%r14
489ec6:
             49 39 de
                                  cmp
489ec9:
             48 89 d8
                                  mov
                                        %rbx.%rax
489ecc:
             75 ea
                                      489eb8 <_dl_init+0x1c8>
                                  ine
                                 impg 489d35 < dl init+0x45>
489ece:
             e9 62 fe ff ff
                                  nopl 0x0(\%rax,\%rax,1)
489ed3:
             0f 1f 44 00 00
489ed8:
             a8 03
                                  test $0x3,%al
489eda:
             Of 85 9e fe ff ff
                                      489d7e <_dl_init+0x8e>
                                  ine
489ee0:
             e9 5b fe ff ff
                                 jmpq 489d40 <_dl_init+0x50>
                                  nopl (%rax)
489ee5:
             0f 1f 00
             0f b6 83 14 03 00 00 movzbl 0x314(%rbx),%eax
489ee8:
489eef:
             a8 08
                                  test $0x8,%al
                                      489f03 <_dl_init+0x213>
489ef1:
             74 10
                                  je
             48 c7 05 92 7a 23 00 movq $0x0,0x237a92(%rip)
489ef3:
                                                                  # 6c1990 <_dl_initfirst>
             00 00 00 00
489efa:
             e9 24 fe ff ff
                                 jmpq 489d27 <_dl_init+0x37>
489efe:
                                        0x8(%rbx),%rsi
489f03:
             48 8b 73 08
                                  mov
                                      $0x8,%eax
489f07:
             83 c8 08
                                  or
                                        %al,0x314(%rbx)
489f0a:
             88 83 14 03 00 00
                                  mov
```

```
489f10:
            0f b6 16
                                  movzbl (%rsi),%edx
489f13:
            84 d2
                                  test %dl,%dl
489f15:
            0f 84 ba 00 00 00
                                  je
                                       489fd5 < dl init+0x2e5>
489f1b:
            48 8b 83 a0 00 00 00 mov
                                        0xa0(\%rbx),\%rax
489f22:
            48 85 c0
                                  test %rax,%rax
489f25:
            0f 84 8a 00 00 00
                                       489 \text{fb5} < \text{dl init} + 0 \times 2 \times 2 \times 5 > 0
                                  je
489f2b:
            f6 05 c6 79 23 00 02 testb $0x2,0x2379c6(%rip)
                                                                 # 6c18f8 <_dl_debug_mask>
                                       48a016 < dl init+0x326>
489f32:
            0f 85 de 00 00 00
                                  ine
489f38:
            48 8b 40 08
                                        0x8(%rax),%rax
                                  mov
489f3c:
            48 03 03
                                  add
                                       (%rbx),%rax
489f3f:
            4c 89 ea
                                  mov
                                        %r13,%rdx
            4c 89 04 24
489f42:
                                  mov
                                        %r8,(%rsp)
            4c 89 e6
                                        %r12,%rsi
489f46:
                                  mov
489f49:
            89 ef
                                        %ebp,%edi
                                  mov
489f4b:
            ff d0
                           callq *%rax
            4c 8b 04 24
489f4d:
                                        (%rsp),%r8
                                  mov
489f51:
            48 8b 93 08 01 00 00 mov
                                        0x108(%rbx),%rdx
489f58:
            48 85 d2
                                  test %rdx,%rdx
489f5b:
            74 96
                                       489ef3 < dl init+0x203>
                                  ie
489f5d:
            48 8b 83 18 01 00 00 mov
                                        0x118(%rbx),%rax
489f64:
            48 8b 0b
                                        (%rbx),%rcx
                                  mov
489f67:
            48 03 4a 08
                                  add
                                        0x8(%rdx),%rcx
489f6b:
            48 8b 40 08
                                        0x8(%rax),%rax
                                  mov
489f6f:
            48 c1 e8 03
                                  shr
                                       $0x3,%rax
            85 c0
                                  test %eax,%eax
489f73:
489f75:
            0f 84 78 ff ff ff
                                  je
                                       489ef3 < dl init+0x203>
                                  lea
489f7b:
            8d 50 ff
                                       -0x1(%rax),%edx
            48 8d 59 08
489f7e:
                                  lea
                                       0x8(\%rcx),\%rbx
489f82:
            48 8d 04 d3
                                  lea
                                       (%rbx,%rdx,8),%rax
489f86:
            48 89 44 24 08
                                        %rax,0x8(%rsp)
                                  mov
489f8b:
            eb 07
                                        489f94 < dl init+0x2a4>
                                  jmp
            0f 1f 00
489f8d:
                                  nopl (%rax)
489f90:
            48 83 c3 08
                                  add
                                        $0x8,%rbx
489f94:
            4c 89 04 24
                                        %r8,(%rsp)
                                  mov
489f98:
            4c 89 ea
                                        %r13,%rdx
                                  mov
489f9b:
            4c 89 e6
                                        %r12,%rsi
                                  mov
            89 ef
                                        %ebp,%edi
489f9e:
                                  mov
489fa0:
            ff 11
                           callq *(%rcx)
489fa2:
            48 39 5c 24 08
                                  cmp
                                        %rbx,0x8(%rsp)
489fa7:
            48 89 d9
                                        %rbx,%rcx
                                  mov
489faa:
            4c 8b 04 24
                                        (%rsp),%r8
                                  mov
489fae:
            75 e0
                                  ine
                                       489f90 <_dl_init+0x2a0>
489fb0:
            e9 3e ff ff ff
                                  jmpg 489ef3 < dl init+0x203>
489fb5:
            48 83 bb 08 01 00 00 cmpq $0x0,0x108(%rbx)
489fbc:
            00
489fbd:
            0f 84 30 ff ff ff
                                  je
                                       489ef3 < dl init+0x203>
489fc3:
            f6 05 2e 79 23 00 02 testb $0x2,0x23792e(%rip)
                                                                 # 6c18f8 <_dl_debug_mask>
489fca:
                                  jne
                                       48a016 <_dl_init+0x326>
            48 8b 93 08 01 00 00 mov
                                        0x108(%rbx),%rdx
489fcc:
                                        489f5d <_dl_init+0x26d>
            eb 88
489fd3:
                                  jmp
            a8 03
489fd5:
                                  test
                                       $0x3,%al
489fd7:
            Of 85 3e ff ff ff
                                  ine
                                       489f1b <_dl_init+0x22b>
```

```
489fdd:
             e9 11 ff ff ff
                                 jmpq 489ef3 < dl init+0x203>
489fe2:
             49 8b 77 08
                                       0x8(%r15),%rsi
                                 mov
             80 3e 00
 489fe6:
                                 cmpb $0x0,(%rsi)
 489fe9:
             75 18
                                      48a003 < dl init+0x313>
                                 ine
             48 8b 05 b6 fa 22 00 mov
                                       0x22fab6(%rip),%rax
                                                                # 6b9aa8 < dl argv>
 489feb:
 489ff2:
             48 8b 30
                                       (%rax),%rsi
                                 mov
 489ff5:
             48 8d 05 ab a5 01 00 lea
                                      0x1a5ab(\%rip),\%rax
                                                              # 4a45a7
< PRETTY FUNCTION .9658+0xb7>
 489ffc:
             48 85 f6
                                 test %rsi,%rsi
 489fff:
             48 0f 44 f0
                                 cmove %rax,%rsi
             48 8d 3d be 14 02 00 lea
 48a003:
                                      0x214be(%rip),%rdi
                                                             # 4ab4c8
< PRETTY FUNCTION .9646+0x28>
 48a00a:
             31 c0
                                      %eax,%eax
                                 xor
 48a00c:
             e8 8f 47 ff ff
                                 callq 47e7a0 < dl debug printf>
             e9 87 fe ff ff
 48a011:
                                 jmpq 489e9d < dl_init+0x1ad>
                                 test %dl,%dl
 48a016:
             84 d2
 48a018:
             75 18
                                 ine
                                      48a032 <_dl_init+0x342>
             48 8b 05 87 fa 22 00 mov
                                       0x22fa87(%rip),%rax
                                                                # 6b9aa8 <_dl_argv>
 48a01a:
 48a021:
             48 8b 30
                                       (%rax),%rsi
                                 mov
 48a024:
             48 8d 05 7c a5 01 00 lea
                                      0x1a57c(%rip),%rax
                                                              # 4a45a7
< PRETTY FUNCTION .9658+0xb7>
 48a02b:
             48 85 f6
                                 test %rsi,%rsi
 48a02e:
             48 0f 44 f0
                                 cmove %rax,%rsi
             48 8d 3d 7b 14 02 00 lea
 48a032:
                                      0x2147b(%rip),%rdi
                                                             # 4ab4b4
< PRETTY FUNCTION .9646+0x14>
 48a039:
             31 c0
                                      %eax,%eax
                                 xor
 48a03b:
             4c 89 04 24
                                       %r8,(%rsp)
                                 mov
             e8 5c 47 ff ff
                                 callq 47e7a0 < dl debug printf>
 48a03f:
             48 8b 83 a0 00 00 00 mov
                                       0xa0(%rbx),%rax
 48a044:
 48a04b:
             4c 8b 04 24
                                       (%rsp),%r8
                                 mov
                                 test %rax,%rax
 48a04f:
             48 85 c0
             Of 85 e0 fe ff ff
 48a052:
                                 ine
                                     489f38 <_dl_init+0x248>
 48a058:
             e9 f4 fe ff ff
                                 jmpq 489f51 <_dl_init+0x261>
 48a05d:
             0f 1f 00
                                 nopl (%rax)
00000000048a060 <_dl_check_map_versions>:
 48a060:
             48 8b 47 68
                                       0x68(%rdi),%rax
                                 mov
 48a064:
             48 85 c0
                                 test %rax,%rax
 48a067:
             0f 84 b3 05 00 00
                                      48a620 <_dl_check_map_versions+0x5c0>
                                 ie
                                 push %r15
 48a06d:
             41 57
                                 push %r14
             41 56
 48a06f:
 48a071:
             41 55
                                 push %r13
 48a073:
             41 54
                                 push %r12
                          push %rbp
 48a075:
             55
 48a076:
             53
                          push %rbx
 48a077:
             48 89 fd
                                       %rdi,%rbp
                                 mov
 48a07a:
             48 81 ec 98 00 00 00 sub
                                       $0x98,%rsp
 48a081:
             4c 8b 78 08
                                 mov
                                       0x8(\%rax),\%r15
                                       0x158(%rdi),%rax
 48a085:
             48 8b 87 58 01 00 00 mov
             48 8b bf 68 01 00 00 mov
                                       0x168(%rdi),%rdi
 48a08c:
             89 54 24 40
                                       %edx,0x40(%rsp)
 48a093:
                                 mov
 48a097:
             89 74 24 44
                                       %esi,0x44(%rsp)
                                 mov
```

```
48a09b:
            48 85 c0
                                test %rax,%rax
48a09e:
            48 89 44 24 48
                                       %rax,0x48(%rsp)
                                mov
48a0a3:
            48 89 7c 24 38
                                mov
                                       %rdi,0x38(%rsp)
48a0a8:
            0f 84 a2 02 00 00
                                     48a350 < dl check map versions+0x2f0>
                                ie
48a0ae:
            48 8b 40 08
                                      0x8(%rax),%rax
                                mov
48a0b2:
            48 03 45 00
                                add
                                      0x0(\%rbp),\%rax
48a0b6:
            45 31 f6
                                      %r14d,%r14d
                                xor
48a0b9:
            66 83 38 01
                                cmpw $0x1,(%rax)
48a0bd:
            48 89 44 24 20
                                       %rax,0x20(%rsp)
                                mov
                                     48a4c0 <_dl_check_map_versions+0x460>
48a0c2:
            0f 85 f8 03 00 00
                                ine
            4c 89 7c 24 10
                                       %r15,0x10(%rsp)
48a0c8:
                                mov
            45 89 f7
                                       %r14d,%r15d
48a0cd:
                                mov
48a0d0:
            44 8b 60 04
                                      0x4(%rax),%r12d
                                mov
48a0d4:
            48 8b 45 30
                                      0x30(%rbp),%rax
                                mov
            48 8d 3d 01 12 23 00 lea
                                     0x231201(%rip),%rdi
48a0d8:
                                                              # 6bb2e0 <_dl_ns>
            4c 03 64 24 10
                                      0x10(\%rsp),\%r12
48a0df:
                                add
48a0e4:
            48 8d 04 c0
                                lea
                                     (%rax,%rax,8),%rax
48a0e8:
            48 c1 e0 04
                                shl
                                     $0x4,%rax
                                      (%rdi,%rax,1),%rbx
48a0ec:
            48 8b 1c 07
                                mov
48a0f0:
            48 85 db
                                test %rbx,%rbx
48a0f3:
            75 18
                                     48a10d < dl check map versions+0xad>
                                ine
48a0f5:
            e9 a6 01 00 00
                                jmpq 48a2a0 <_dl_check_map_versions+0x240>
48a0fa:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax.\%rax.1)
            48 8b 5b 18
                                      0x18(%rbx),%rbx
48a100:
                                mov
48a104:
            48 85 db
                                test %rbx,%rbx
48a107:
            0f 84 93 01 00 00
                                je
                                     48a2a0 <_dl_check_map_versions+0x240>
48a10d:
            48 89 de
                                       %rbx,%rsi
                                mov
            4c 89 e7
                                      %r12,%rdi
48a110:
                                mov
            e8 88 48 ff ff
                                callq 47e9a0 <_dl_name_match_p>
48a113:
48a118:
            85 c0
                                test %eax,%eax
                                     48a100 < dl check map versions+0xa0>
48a11a:
            74 e4
                                je
            8b 4c 24 40
                                      0x40(\%rsp),\%ecx
48a11c:
                                mov
48a120:
            85 c9
                                test %ecx,%ecx
48a122:
            0f 85 f8 01 00 00
                                     48a320 <_dl_check_map_versions+0x2c0>
                                jne
48a128:
            48 8b 44 24 20
                                mov
                                      0x20(%rsp),%rax
48a12d:
            48 89 5c 24 18
                                mov
                                      %rbx,0x18(%rsp)
                                      0x8(%rax),%r12d
48a132:
            44 8b 60 08
                                mov
                                      %rax,%r12
48a136:
            49 01 c4
                                add
48a139:
            41 0f b7 44 24 04
                                movzwl 0x4(%r12),%eax
            4c 8b 75 08
                                      0x8(%rbp),%r14
48a13f:
                                mov
48a143:
            41 8b 1c 24
                                       (%r12),%ebx
                                mov
48a147:
            66 89 44 24 2e
                                mov
                                       %ax,0x2e(%rsp)
48a14c:
            48 8b 44 24 18
                                       0x18(\%rsp),\%rax
                                mov
            4c 8b 68 28
                                      0x28(%rax),%r13
48a151:
                                mov
48a155:
            41 8b 44 24 08
                                mov
                                      0x8(\%r12),\%eax
                                      0x10(%rsp), %rax
48a15a:
            48 03 44 24 10
                                add
                                cmpb $0x0,(%r14)
48a15f:
            41 80 3e 00
            48 89 04 24
                                       %rax,(%rsp)
48a163:
                                mov
48a167:
            75 18
                                     48a181 <_dl_check_map_versions+0x121>
                                jne
                                       0x22f938(%rip),%rax
            48 8b 05 38 f9 22 00 mov
                                                               # 6b9aa8 < dl argv>
48a169:
48a170:
            4c 8b 30
                                       (%rax),%r14
                                mov
```

```
48a173:
             48 8d 05 2d a4 01 00 lea 0x1a42d(%rip),%rax
                                                             # 4a45a7
< PRETTY FUNCTION .9658+0xb7>
48a17a:
             4d 85 f6
                                 test %r14,%r14
48a17d:
             4c 0f 44 f0
                                 cmove %rax.%r14
             49 8b 45 68
                                      0x68(%r13),%rax
48a181:
                                 mov
48a185:
             f6 05 6c 77 23 00 10 testb $0x10,0x23776c(%rip)
                                                               # 6c18f8
<_dl_debug_mask>
             48 8b 40 08
                                       0x8(%rax),%rax
48a18c:
                                 mov
48a190:
             48 89 44 24 08
                                       %rax,0x8(%rsp)
                                 mov
                                     48a570 < _dl_check_map_versions+0x510>
48a195:
             0f 85 d5 03 00 00
                                 ine
             49 8b 85 68 01 00 00 mov 0x168(%r13),%rax
48a19b:
                                 test %rax,%rax
48a1a2:
             48 85 c0
                                     48a520 < dl check map versions+0x4c0>
             0f 84 75 03 00 00
48a1a5:
                                 ie
48a1ab:
             48 8b 50 08
                                      0x8(\%rax),\%rdx
                                 mov
                                 test %rdx,%rdx
48a1af:
             48 85 d2
                                     48a6de < dl check map versions+0x67e>
48a1b2:
             0f 84 26 05 00 00
                                 je
48a1b8:
             49 03 55 00
                                 add 0x0(\%r13),\%rdx
             66 83 3a 01
                                 cmpw $0x1,(%rdx)
48a1bc:
48a1c0:
             75 29
                                     48a1eb < dl check map versions+0x18b>
                                 ine
48a1c2:
             4c 89 74 24 30
                                 mov
                                       %r14,0x30(%rsp)
48a1c7:
             49 89 ee
                                       %rbp,%r14
                                 mov
48a1ca:
             89 dd
                                 mov
                                       %ebx,%ebp
48a1cc:
             48 89 d3
                                       %rdx,%rbx
                                 mov
48a1cf:
             3b 6b 08
                                 cmp
                                       0x8(\%rbx),\%ebp
                                     48a250 < _dl_check_map_versions+0x1f0>
48a1d2:
             74 7c
                                 ie
48a1d4:
             8b 43 10
                                 mov 0x10(%rbx),%eax
                                 test %eax,%eax
48a1d7:
             85 c0
             0f 84 d9 03 00 00
                                     48a5b8 < dl check map versions+0x558>
48a1d9:
                                 je
                                      %rax,%rbx
48a1df:
             48 01 c3
                                 add
48a1e2:
             66 83 3b 01
                                 cmpw $0x1,(%rbx)
                                     48a1cf < dl check map versions+0x16f>
48a1e6:
             74 e7
                                 ie
             48 89 da
                                       %rbx,%rdx
48a1e8:
                                 mov
                                 movb $0x0,0x63(\%rsp)
48a1eb:
             c6 44 24 63 00
48a1f0:
             0f b7 3a
                                 movzwl (%rdx),%edi
             48 8d 74 24 63
48a1f3:
                                     0x63(%rsp),%rsi
48a1f8:
             31 c9
                                 xor
                                      %ecx,%ecx
             ba 0a 00 00 00
                                      $0xa,%edx
48a1fa:
                                 mov
48a1ff:
             e8 8c a8 ff ff
                                 calla 484a90 < itoa word>
48a204:
             49 8b 75 08
                                       0x8(%r13),%rsi
                                 mov
                                 cmpb $0x0,(%rsi)
48a208:
             80 3e 00
48a20b:
             75 18
                                     48a225 <_dl_check_map_versions+0x1c5>
                                 jne
48a20d:
             48 8b 15 94 f8 22 00 mov
                                       0x22f894(%rip),%rdx
                                                               # 6b9aa8 <_dl_argv>
48a214:
             48 8b 32
                                       (%rdx),%rsi
                                 mov
             48 8d 15 89 a3 01 00 lea
48a217:
                                     0x1a389(%rip),%rdx
                                                             # 4a45a7
<__PRETTY_FUNCTION__.9658+0xb7>
48a21e:
             48 85 f6
                                 test %rsi,%rsi
48a221:
             48 0f 44 f2
                                 cmove %rdx,%rsi
48a225:
             48 8d 5c 24 70
                                 lea
                                     0x70(\%rsp),\%rbx
             48 8d 15 9f 13 02 00 lea
                                     0x2139f(%rip),%rdx
48a22a:
                                                             # 4ab5d0
< PRETTY FUNCTION .9646+0x130>
48a231:
             48 89 c1
                                       %rax,%rcx
                                 mov
48a234:
             31 c0
                                      %eax,%eax
                                 xor
```

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48a236:
             48 89 df
                                       %rbx,%rdi
                                 mov
48a239:
             e8 92 6c ff ff
                                 callq 480ed0 < dl exception create format>
48a23e:
             48 8d 15 c6 12 02 00 lea
                                     0x212c6(%rip),%rdx
                                                             # 4ab50b
< PRETTY FUNCTION .9646+0x6b>
                                 mov %rbx,%rsi
48a245:
             48 89 de
48a248:
             31 ff
                               %edi,%edi
                          xor
48a24a:
             e8 11 86 ff ff
                                 callq 482860 <_dl_signal_exception>
48a24f:
             90
                          nop
48a250:
             8b 43 0c
                                       0xc(%rbx),%eax
                                 mov
48a253:
             48 8b 3c 24
                                 mov
                                       (%rsp),%rdi
             8b 34 03
                                       (%rbx,%rax,1),%esi
48a257:
                                 mov
48a25a:
             48 03 74 24 08
                                 add 0x8(\%rsp),\%rsi
             e8 34 62 f7 ff
48a25f:
                                 cally 400498 < .plt + 0x80 >
48a264:
             85 c0
                                 test %eax,%eax
             0f 85 68 ff ff ff
48a266:
                                      48a1d4 <_dl_check_map_versions+0x174>
                                 ine
                                 mov %r14,%rbp
48a26c:
             4c 89 f5
48a26f:
             41 0f b7 44 24 06
                                 movzwl 0x6(%r12),%eax
48a275:
             25 ff 7f 00 00
                                      $0x7fff,%eax
                                 and
48a27a:
             41 39 c7
                                 cmp %eax,%r15d
48a27d:
             44 0f 42 f8
                                 cmovb %eax,%r15d
48a281:
             41 8b 44 24 0c
                                       0xc(%r12),%eax
                                 mov
48a286:
             85 c0
                                 test %eax,%eax
48a288:
             0f 84 a2 00 00 00
                                     48a330 < dl check map versions+0x2d0>
             49 01 c4
                                      %rax,%r12
48a28e:
                                 add
                                 impq 48a139 <_dl_check_map_versions+0xd9>
48a291:
             e9 a3 fe ff ff
48a296:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
48a29d:
             00 00 00
             8b b5 c0 02 00 00
48a2a0:
                                       0x2c0(\%rbp),\%esi
                                 mov
                                 test %esi,%esi
48a2a6:
             85 f6
48a2a8:
             74 4e
                                     48a2f8 <_dl_check_map_versions+0x298>
                                 je
             45 31 ed
48a2aa:
                                      %r13d,%r13d
                                 xor
                                      48a2bd <_dl_check_map_versions+0x25d>
48a2ad:
             eb 0e
                                 jmp
48a2af:
             90
                          nop
48a2b0:
             41 83 c5 01
                                 add
                                      $0x1,%r13d
             44 3b ad c0 02 00 00 cmp
                                       0x2c0(%rbp),%r13d
48a2b4:
48a2bb:
             73.3h
                                 jae
                                      48a2f8 < dl check map versions+0x298>
                                       0x2b8(%rbp),%rdx
             48 8b 95 b8 02 00 00 mov
48a2bd:
                                       %r13d.%eax
48a2c4:
             44 89 e8
                                 mov
48a2c7:
             4c 89 e7
                                       %r12,%rdi
                                 mov
             48 8d 1c c5 00 00 00 lea 0x0(,%rax,8),%rbx
48a2ca:
48a2d1:
             00
48a2d2:
             48 8b 34 c2
                                 mov (%rdx,%rax,8),%rsi
48a2d6:
             e8 c5 46 ff ff
                                 callq 47e9a0 < dl name match p>
                                 test %eax,%eax
48a2db:
             85 c0
48a2dd:
             74 d1
                                 je
                                     48a2b0 <_dl_check_map_versions+0x250>
                                       0x2b8(%rbp),%rax
48a2df:
             48 8b 85 b8 02 00 00 mov
                                 mov
48a2e6:
             48 8b 1c 18
                                       (%rax,%rbx,1),%rbx
             48 85 db
                                 test %rbx,%rbx
48a2ea:
             0f 85 29 fe ff ff
                                      48a11c <_dl_check_map_versions+0xbc>
48a2ed:
                                 jne
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48a2f3:
             48 8d 0d 91 13 02 00 lea
                                     0x21391(%rip),%rcx
48a2f8:
                                                             # 4ab690
<__PRETTY_FUNCTION___.8641>
```

```
48a2ff:
             48 8d 35 d9 11 02 00 lea 0x211d9(%rip),%rsi
                                                             # 4ab4df
< PRETTY FUNCTION .9646+0x3f>
48a306:
             48 8d 3d df 11 02 00 lea
                                     0x211df(%rip),%rdi
                                                            #4ab4ec
< PRETTY FUNCTION .9646+0x4c>
                                 mov $0xcd,%edx
48a30d:
             ba cd 00 00 00
                                 callq 401f70 < assert fail>
48a312:
             e8 59 7c f7 ff
48a317:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48a31e:
             00 00
48a320:
             f6 83 15 03 00 00 02 testb $0x2,0x315(%rbx)
             0f 84 fb fd ff ff
                                     48a128 <_dl_check_map_versions+0xc8>
48a327:
                                 ie
48a32d:
             0f 1f 00
                                 nopl (%rax)
                                       0x20(\%rsp),\%rcx
48a330:
             48 8b 4c 24 20
                                 mov
             8b 41 0c
48a335:
                                       0xc(%rcx),%eax
                                 mov
48a338:
             85 c0
                                 test %eax,%eax
             0f 84 00 03 00 00
48a33a:
                                     48a640 <_dl_check_map_versions+0x5e0>
                                      %rax,%rcx
48a340:
             48 01 c1
                                 add
48a343:
             48 89 4c 24 20
                                 mov
                                       %rcx,0x20(%rsp)
48a348:
             48 89 c8
                                       %rcx,%rax
                                 mov
48a34b:
             e9 80 fd ff ff
                                 impg 48a0d0 < dl check map versions+0x70>
48a350:
             45 31 f6
                                      %r14d,%r14d
                                 xor
48a353:
             48 83 7c 24 38 00
                                 cmpg $0x0,0x38(\%rsp)
                                     48a4ab <_dl_check_map_versions+0x44b>
48a359:
             0f 84 4c 01 00 00
                                 je
48a35f:
             48 8b 44 24 38
                                       0x38(%rsp),%rax
                                 mov
             48 8b 50 08
                                       0x8(%rax),%rdx
48a364:
                                 mov
                                      0x0(\%rbp),\%rdx
48a368:
             48 03 55 00
                                 add
48a36c:
             eb 05
                                      48a373 <_dl_check_map_versions+0x313>
                                 jmp
             66 90
                                 xchg %ax,%ax
48a36e:
                                      %rax,%rdx
48a370:
             48 01 c2
                                 add
                                 movzwl 0x4(%rdx),%eax
48a373:
             0f b7 42 04
48a377:
             25 ff 7f 00 00
                                      $0x7fff,%eax
                                 and
             41 39 c6
48a37c:
                                       %eax,%r14d
                                 cmp
             44 0f 42 f0
                                 cmovb %eax,%r14d
48a37f:
48a383:
             8b 42 10
                                 mov 0x10(%rdx),%eax
48a386:
             85 c0
                                 test %eax,%eax
                                     48a370 <_dl_check_map_versions+0x310>
48a388:
             75 e6
                                 ine
48a38a:
             45 85 f6
                                 test %r14d.%r14d
48a38d:
             0f 84 18 01 00 00
                                     48a4ab <_dl_check_map_versions+0x44b>
                                 ie
                                     0x1(%r14),%edi
48a393:
             41 8d 7e 01
                                 lea
48a397:
             be 18 00 00 00
                                 mov
                                       $0x18,%esi
             48 89 fb
                                       %rdi,%rbx
48a39c:
                                 mov
48a39f:
             e8 fc 85 f9 ff
                                 callq 4229a0 <__calloc>
48a3a4:
             48 85 c0
                                 test %rax,%rax
48a3a7:
             48 89 85 e0 02 00 00 mov
                                       %rax,0x2e0(%rbp)
                                     48a69f <_dl_check_map_versions+0x63f>
48a3ae:
             0f 84 eb 02 00 00
                                 je
48a3b4:
             48 8b 95 c8 01 00 00 mov
                                       0x1c8(%rbp),%rdx
48a3bb:
             48 8b 7c 24 48
                                       0x48(%rsp),%rdi
                                 mov
48a3c0:
             89 9d e8 02 00 00
                                       %ebx,0x2e8(%rbp)
                                 mov
             48 8b 52 08
                                       0x8(%rdx),%rdx
48a3c6:
                                 mov
             48 85 ff
                                 test %rdi,%rdi
48a3ca:
             48 89 95 30 03 00 00 mov
                                       %rdx,0x330(%rbp)
48a3cd:
             74 7a
                                     48a450 < dl check map versions+0x3f0>
48a3d4:
                                 je
             48 8b 7f 08
                                       0x8(%rdi),%rdi
48a3d6:
                                 mov
```

```
48a3da:
            48 03 7d 00
                                add
                                      0x0(%rbp),%rdi
            66 90
48a3de:
                                xchg %ax,%ax
                                      0x8(%rdi),%ecx
48a3e0:
            8b 4f 08
                                mov
48a3e3:
            48 01 f9
                                add
                                      %rdi.%rcx
48a3e6:
            eb 0b
                                      48a3f3 < dl check map versions+0x393>
                                imp
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48a3e8:
48a3ef:
            00
48a3f0:
            48 01 d1
                                      %rdx.%rcx
                                add
48a3f3:
            0f b7 51 06
                                movzwl 0x6(%rcx),%edx
48a3f7:
            89 d6
                                      %edx,%esi
            66 81 e6 ff 7f
48a3f9:
                                      $0x7fff,%si
48a3fe:
            44 0f b7 c6
                                movzwl %si,%r8d
48a402:
            44 39 c3
                                      %r8d,%ebx
                                cmp
                                     48a510 <_dl_check_map_versions+0x4b0>
48a405:
            0f 86 05 01 00 00
48a40b:
            0f b7 f6
                                movzwl %si,%esi
            66 81 e2 00 80
48a40e:
                                and
                                      $0x8000,%dx
48a413:
            44 8b 01
                                mov
                                      (%rcx),%r8d
48a416:
            48 8d 34 76
                                     (%rsi,%rsi,2),%rsi
                                lea
48a41a:
            0f b7 d2
                                movzwl %dx,%edx
48a41d:
            48 8d 34 f0
                                lea (%rax,%rsi,8),%rsi
48a421:
            89 56 0c
                                      %edx,0xc(%rsi)
                                mov
48a424:
            8b 51 08
                                mov
                                      0x8(\%rcx),\%edx
48a427:
            44 89 46 08
                                      %r8d.0x8(%rsi)
                                mov
                                      %r15,%rdx
48a42b:
            4c 01 fa
                                add
48a42e:
            48 89 16
                                      %rdx,(%rsi)
                                mov
48a431:
            8b 57 04
                                      0x4(%rdi),%edx
                                mov
48a434:
            4c 01 fa
                                      %r15,%rdx
                                add
            48 89 56 10
48a437:
                                      %rdx,0x10(%rsi)
                                mov
48a43b:
            8b 51 0c
                                      0xc(%rcx),%edx
                                mov
48a43e:
            85 d2
                                test %edx,%edx
                                     48a3f0 < dl check map versions+0x390>
48a440:
            75 ae
                                ine
48a442:
            8b 57 0c
                                      0xc(%rdi),%edx
                                mov
48a445:
            85 d2
                                test %edx,%edx
48a447:
            74 07
                                     48a450 <_dl_check_map_versions+0x3f0>
                                je
            48 01 d7
48a449:
                                add
                                      %rdx,%rdi
48a44c:
            eb 92
                                jmp
                                      48a3e0 <_dl_check_map_versions+0x380>
                                xchg %ax,%ax
            66 90
48a44e:
48a450:
            48 8b 7c 24 38
                                      0x38(%rsp),%rdi
                                mov
48a455:
            48 85 ff
                                test %rdi,%rdi
                                     48a4ab <_dl_check_map_versions+0x44b>
48a458:
            74 51
                                je
48a45a:
            48 8b 57 08
                                      0x8(%rdi),%rdx
                                mov
48a45e:
            48 03 55 00
                                add
                                      0x0(\%rbp),\%rdx
                                      48a49e < dl check map versions+0x43e>
48a462:
            eb 3a
                                jmp
48a464:
            0f 1f 40 00
                                nopl 0x0(\%rax)
48a468:
            8b 72 0c
                                mov
                                      0xc(%rdx),%esi
48a46b:
            0f b7 4a 04
                                movzwl 0x4(%rdx),%ecx
48a46f:
            8b 7a 08
                                mov
                                      0x8(%rdx),%edi
            8b 34 32
                                      (%rdx,%rsi,1),%esi
48a472:
                                mov
            81 e1 ff 7f 00 00
                                      $0x7fff,%ecx
48a475:
                                and
            48 8d 0c 49
                                     (%rcx,%rcx,2),%rcx
48a47b:
                                lea
48a47f:
            48 8d 0c c8
                                     (%rax,%rcx,8),%rcx
                                lea
            4c 01 fe
                                      %r15,%rsi
48a483:
                                add
```

```
48a486:
             89 79 08
                                        %edi.0x8(%rcx)
                                 mov
48a489:
                                       %rsi,(%rcx)
             48 89 31
                                 mov
48a48c:
             48 c7 41 10 00 00 00 movg $0x0,0x10(%rcx)
48a493:
             00
48a494:
             8b 4a 10
                                       0x10(\%rdx),\%ecx
                                 mov
48a497:
             85 c9
                                 test %ecx,%ecx
48a499:
             74 10
                                 je
                                      48a4ab <_dl_check_map_versions+0x44b>
48a49b:
             48 01 ca
                                       %rcx,%rdx
                                 add
48a49e:
             f6 42 02 01
                                 testb $0x1,0x2(\%rdx)
                                      48a468 <_dl_check_map_versions+0x408>
48a4a2:
             74 c4
                                       0x10(%rdx),%ecx
48a4a4:
             8b 4a 10
                                 mov
             85 c9
                                 test %ecx.%ecx
48a4a7:
                                      48a49b < dl check map versions+0x43b>
48a4a9:
             75 f0
                                 ine
48a4ab:
             48 81 c4 98 00 00 00 add
                                       $0x98,%rsp
                                       %eax,%eax
48a4b2:
             31 c0
                                 xor
48a4b4:
             5b
                                %rbx
                          pop
48a4b5:
             5d
                                %rbp
                          pop
48a4b6:
             41 5c
                                       %r12
                                 pop
48a4b8:
             41 5d
                                       %r13
                                 pop
48a4ba:
             41 5e
                                 pop
                                       %r14
48a4bc:
             41 5f
                                       %r15
                                 pop
48a4be:
             c3
                          retq
48a4bf:
             90
                          nop
                                 movb $0x0,0x63(\%rsp)
48a4c0:
             c6 44 24 63 00
48a4c5:
             0f b7 38
                                 movzwl (%rax),%edi
48a4c8:
             48 8d 74 24 63
                                 lea
                                      0x63(%rsp),%rsi
48a4cd:
             31 c9
                                      %ecx,%ecx
                                 xor
                                       $0xa,%edx
48a4cf:
             ba 0a 00 00 00
                                 mov
                                 callq 484a90 <_itoa_word>
48a4d4:
             e8 b7 a5 ff ff
48a4d9:
             48 8b 75 08
                                       0x8(%rbp),%rsi
                                 mov
                                 cmpb $0x0,(%rsi)
48a4dd:
             80 3e 00
                                      48a623 <_dl_check_map_versions+0x5c3>
48a4e0:
             0f 84 3d 01 00 00
                                 ie
48a4e6:
             48 8d 5c 24 70
                                 lea
                                      0x70(%rsp), %rbx
48a4eb:
             48 8d 15 2e 10 02 00 lea
                                      0x2102e(%rip),%rdx
                                                              #4ab520
<__PRETTY_FUNCTION__.9646+0x80>
48a4f2:
             48 89 c1
                                 mov
                                       %rax,%rcx
48a4f5:
             31 c0
                                      %eax,%eax
                                 xor
48a4f7:
             48 89 df
                                       %rbx,%rdi
                                 mov
48a4fa:
             e8 d1 69 ff ff
                                 callq 480ed0 <_dl_exception_create_format>
                                %edi,%edi
48a4ff:
             31 ff
                          xor
48a501:
             31 d2
                                 xor %edx,%edx
48a503:
             48 89 de
                                 mov
                                       %rbx,%rsi
48a506:
             e8 55 83 ff ff
                                 callq 482860 < dl signal exception>
48a50b:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48a510:
             8b 51 0c
                                 mov
                                       0xc(%rcx),%edx
48a513:
             85 d2
                                 test %edx.%edx
48a515:
             Of 85 d5 fe ff ff
                                      48a3f0 <_dl_check_map_versions+0x390>
                                 ine
             e9 22 ff ff ff
                                 jmpq 48a442 <_dl_check_map_versions+0x3e2>
48a51b:
                                       0x44(%rsp),%edx
48a520:
             8b 54 24 44
                                 mov
                                 test %edx,%edx
48a524:
             85 d2
             0f 84 43 fd ff ff
                                      48a26f < dl check map versions+0x20f>
48a526:
                                 je
             49 8b 75 08
48a52c:
                                 mov
                                       0x8(%r13),%rsi
```

```
48a530:
             4d 89 f2
                                       %r14,%r10
                                 mov
48a533:
             80 3e 00
                                 cmpb $0x0,(%rsi)
48a536:
             75 16
                                 ine
                                      48a54e < dl check map versions+0x4ee>
48a538:
             48 8b 05 69 f5 22 00 mov
                                       0x22f569(%rip),%rax
                                                               # 6b9aa8 < dl argv>
48a53f:
             48 8b 30
                                       (%rax),%rsi
                                 mov
48a542:
             48 85 f6
                                 test %rsi,%rsi
48a545:
             75 07
                                      48a54e <_dl_check_map_versions+0x4ee>
                                 ine
             48 8d 35 59 a0 01 00 lea
                                      0x1a059(%rip),%rsi
48a547:
                                                            # 4a45a7
<__PRETTY_FUNCTION__.9658+0xb7>
48a54e:
             48 8d 5c 24 70
                                 lea
                                     0x70(\%rsp),\%rbx
             48 8d 15 3e 10 02 00 lea
                                     0x2103e(%rip),%rdx
48a553:
                                                             #4ab598
< PRETTY FUNCTION .9646+0xf8>
48a55a:
             4c 89 d1
                                       %r10.%rcx
                                 mov
48a55d:
             31 c0
                                      %eax,%eax
                                 xor
             48 89 df
48a55f:
                                       %rbx,%rdi
                                 mov
                                 callq 480ed0 < dl exception create format>
48a562:
             e8 69 69 ff ff
48a567:
             e9 d2 fc ff ff
                                 jmpq 48a23e <_dl_check_map_versions+0x1de>
             0f 1f 40 00
                                nopl 0x0(\%rax)
48a56c:
                                       0x8(%r13),%rdx
48a570:
             49 8b 55 08
                                 mov
48a574:
             49 8b 4d 30
                                 mov
                                       0x30(%r13),%rcx
48a578:
             80 3a 00
                                 cmpb $0x0,(%rdx)
48a57b:
             75 18
                                 jne
                                    48a595 < _dl_check_map_versions+0x535>
48a57d:
             48 8b 05 24 f5 22 00 mov
                                       0x22f524(%rip),%rax
                                                               # 6b9aa8 < dl argv>
                                       (%rax),%rdx
48a584:
             48 8b 10
                                 mov
                                     0x1a019(%rip),%rax
             48 8d 05 19 a0 01 00 lea
                                                             # 4a45a7
48a587:
< PRETTY FUNCTION .9658+0xb7>
                                 test %rdx,%rdx
48a58e:
             48 85 d2
                                 cmove %rax,%rdx
48a591:
             48 0f 44 d0
                                       0x30(%rbp), %r9
48a595:
             4c 8b 4d 30
                                 mov
48a599:
             48 8b 34 24
                                       (%rsp),%rsi
                                 mov
             48 8d 3d ac 0f 02 00 lea
48a59d:
                                     0x20fac(%rip),%rdi
                                                            # 4ab550
< PRETTY FUNCTION .9646+0xb0>
48a5a4:
             4d 89 f0
                                 mov
                                       %r14,%r8
48a5a7:
             31 c0
                                      %eax,%eax
                                 xor
                                 callq 47e7a0 <_dl_debug_printf>
48a5a9:
             e8 f2 41 ff ff
                                impq 48a19b <_dl_check_map_versions+0x13b>
48a5ae:
             e9 e8 fb ff ff
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48a5b3:
48a5b8:
             f6 44 24 2e 02
                                 testb $0x2.0x2e(\%rsp)
48a5bd:
             4c 89 f5
                                       %r14,%rbp
                                 mov
                                       0x30(%rsp), %r14
             4c 8b 74 24 30
48a5c0:
                                 mov
             0f 84 8e 00 00 00
                                     48a659 <_dl_check_map_versions+0x5f9>
48a5c5:
48a5cb:
             8b 44 24 44
                                 mov
                                      0x44(%rsp),%eax
48a5cf:
             85 c0
                                 test %eax,%eax
             0f 84 98 fc ff ff
                                     48a26f <_dl_check_map_versions+0x20f>
48a5d1:
                                 je
48a5d7:
             49 8b 75 08
                                mov
                                       0x8(%r13),%rsi
                                       %r14,%r10
48a5db:
             4d 89 f2
                                 mov
48a5de:
             80 3e 00
                                 cmpb $0x0,(%rsi)
             75 16
                                jne
                                     48a5f9 <_dl_check_map_versions+0x599>
48a5e1:
             48 8b 05 be f4 22 00 mov
                                       0x22f4be(\%rip),\%rax
                                                               # 6b9aa8 <_dl_argv>
48a5e3:
            48 8b 30
48a5ea:
                                 mov
                                       (%rax),%rsi
                                 test %rsi,%rsi
48a5ed:
             48 85 f6
                                      48a5f9 <_dl_check_map_versions+0x599>
48a5f0:
             75 07
                                 jne
```

```
48a5f2:
            48 8d 35 ae 9f 01 00 lea 0x19fae(%rip),%rsi
                                                            # 4a45a7
< PRETTY FUNCTION .9658+0xb7>
48a5f9:
            48 8d 5c 24 70
                                 lea
                                     0x70(%rsp), %rbx
48a5fe:
            48 8b 0c 24
                                       (%rsp),%rcx
                                 mov
48a602:
            48 8d 15 ef 0f 02 00 lea
                                     0x20fef(\%rip),\%rdx
                                                            # 4ab5f8
< PRETTY FUNCTION .9646+0x158>
48a609:
            4d 89 d0
                                 mov
                                       %r10,%r8
            31 c0
                                      %eax,%eax
48a60c:
                                 xor
48a60e:
            48 89 df
                                       %rbx,%rdi
                                 mov
                                 callq 480ed0 <_dl_exception_create_format>
48a611:
            e8 ba 68 ff ff
            e9 23 fc ff ff
                                 jmpq 48a23e <_dl_check_map_versions+0x1de>
48a616:
            0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48a61b:
48a620:
            31 c0
                                      %eax,%eax
                                 xor
48a622:
            с3
                          retq
            48 8b 15 7e f4 22 00 mov
48a623:
                                       0x22f47e(%rip),%rdx
                                                               # 6b9aa8 <_dl_argv>
48a62a:
            48 8b 32
                                 mov
                                       (%rdx),%rsi
48a62d:
            48 8d 15 73 9f 01 00 lea
                                     0x19f73(%rip),%rdx
                                                             # 4a45a7
< PRETTY FUNCTION .9658+0xb7>
48a634:
            48 85 f6
                                 test %rsi,%rsi
48a637:
            48 0f 44 f2
                                 cmove %rdx,%rsi
48a63b:
            e9 a6 fe ff ff
                                 jmpq 48a4e6 <_dl_check_map_versions+0x486>
48a640:
            48 83 7c 24 38 00
                                 cmpq $0x0,0x38(\%rsp)
48a646:
            45 89 fe
                                 mov
                                       %r15d,%r14d
            4c 8b 7c 24 10
                                       0x10(\%rsp),\%r15
48a649:
                                 mov
                                     48a35f <_dl_check_map_versions+0x2ff>
48a64e:
            Of 85 0b fd ff ff
                                 ine
48a654:
            e9 31 fd ff ff
                                jmpq 48a38a <_dl_check_map_versions+0x32a>
            49 8b 75 08
                                       0x8(%r13),%rsi
48a659:
                                 mov
            4d 89 f2
                                       %r14,%r10
48a65d:
                                 mov
            80 3e 00
                                 cmpb $0x0,(%rsi)
48a660:
48a663:
            75 18
                                     48a67d <_dl_check_map_versions+0x61d>
                                 jne
48a665:
            48 8b 05 3c f4 22 00 mov
                                       0x22f43c(%rip),%rax
                                                               # 6b9aa8 < dl argv>
48a66c:
            48 8b 30
                                 mov
                                       (%rax),%rsi
48a66f:
            48 8d 05 31 9f 01 00 lea
                                     0x19f31(%rip),%rax
                                                             # 4a45a7
<__PRETTY_FUNCTION__.9658+0xb7>
                                 test %rsi,%rsi
48a676:
            48 85 f6
48a679:
            48 0f 44 f0
                                 cmove %rax,%rsi
48a67d:
            48 8d 5c 24 70
                                     0x70(%rsp), %rbx
            48 8b 0c 24
                                       (%rsp),%rcx
48a682:
                                 mov
                                     0x20f9b(%rip),%rdx
48a686:
            48 8d 15 9b 0f 02 00 lea
                                                             # 4ab628
<__PRETTY_FUNCTION___.9646+0x188>
            4d 89 d0
                                       %r10,%r8
48a68d:
                                 mov
48a690:
            31 c0
                                      %eax,%eax
                                 xor
48a692:
            48 89 df
                                       %rbx,%rdi
                                 mov
            e8 36 68 ff ff
                                 callq 480ed0 <_dl_exception_create_format>
48a695:
48a69a:
            e9 9f fb ff ff
                                 jmpq 48a23e <_dl_check_map_versions+0x1de>
48a69f:
            48 8b 75 08
                                       0x8(%rbp),%rsi
                                 mov
48a6a3:
            80 3e 00
                                 cmpb $0x0,(%rsi)
            75 18
                                jne
                                     48a6c0 < _dl_check_map_versions+0x660>
48a6a6:
            48 8b 05 f9 f3 22 00 mov
                                       0x22f3f9(%rip),%rax
                                                               # 6b9aa8 <_dl_argv>
48a6a8:
48a6af:
            48 8b 30
                                       (%rax),%rsi
                                 mov
            48 8d 05 ee 9e 01 00 lea
                                    0x19eee(\%rip),\%rax
                                                             # 4a45a7
48a6b2:
<__PRETTY_FUNCTION__.9658+0xb7>
```

```
48a6b9:
             48 85 f6
                                 test %rsi,%rsi
 48a6bc:
             48 0f 44 f0
                                 cmove %rax,%rsi
 48a6c0:
             48 8d 5c 24 70
                                 lea
                                      0x70(%rsp), %rbx
 48a6c5:
             48 8d 15 84 0f 02 00 lea
                                      0x20f84(%rip),%rdx
                                                             # 4ab650
<__PRETTY_FUNCTION___.9646+0x1b0>
48a6cc:
             48 89 df
                                       %rbx,%rdi
                                 mov
 48a6cf:
             e8 1c 67 ff ff
                                 callq 480df0 <_dl_exception_create>
 48a6d4:
             bf 0c 00 00 00
                                       $0xc.%edi
                                 mov
 48a6d9:
             e9 23 fe ff ff
                                       48a501 <_dl_check_map_versions+0x4a1>
                                 jmpq
 48a6de:
             48 8d 0d 93 0f 02 00 lea
                                      0x20f93(%rip),%rcx
                                                             # 4ab678
<__PRETTY_FUNCTION .8619>
             48 8d 35 f3 0d 02 00 lea
                                      0x20df3(%rip),%rsi
                                                             # 4ab4df
 48a6e5:
< PRETTY FUNCTION .9646+0x3f>
 48a6ec:
             48 8d 3d 08 0e 02 00 lea
                                     0x20e08(%rip),%rdi
                                                             # 4ab4fb
<__PRETTY_FUNCTION___.9646+0x5b>
                                       $0x58,%edx
 48a6f3:
             ba 58 00 00 00
                                 mov
 48a6f8:
             e8 73 78 f7 ff
                                 callq 401f70 <__assert_fail>
 48a6fd:
             0f 1f 00
                                 nopl (%rax)
00000000048a700 <_dl_check_all_versions>:
 48a700:
             41 55
                                 push %r13
             41 54
 48a702:
                                 push
                                       %r12
 48a704:
             41 89 f5
                                 mov
                                       %esi,%r13d
 48a707:
             55
                           push %rbp
 48a708:
             53
                          push %rbx
 48a709:
             31 ed
                                      %ebp,%ebp
                                 xor
             48 89 fb
                                       %rdi,%rbx
 48a70b:
                                 mov
             41 89 d4
 48a70e:
                                       %edx,%r12d
                                 mov
                                      $0x8,%rsp
 48a711:
             48 83 ec 08
                                 sub
 48a715:
             48 85 ff
                                 test %rdi,%rdi
             74 18
                                      48a732 < dl check all versions+0x32>
 48a718:
                                 je
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
 48a71a:
 48a720:
             f6 83 15 03 00 00 02 testb $0x2,0x315(%rbx)
                                      48a740 < _dl_check_all_versions+0x40>
 48a727:
             74 17
                                 je
             48 8b 5b 18
                                 mov 0x18(%rbx),%rbx
 48a729:
 48a72d:
             48 85 db
                                 test %rbx,%rbx
 48a730:
             75 ee
                                      48a720 <_dl_check_all_versions+0x20>
                                 ine
 48a732:
             48 83 c4 08
                                 add
                                      $0x8,%rsp
 48a736:
             89 e8
                                       %ebp,%eax
                                 mov
 48a738:
             5b
                                %rbx
                          pop
 48a739:
             5d
                           pop
                                %rbp
 48a73a:
             41 5c
                                 pop
                                       %r12
 48a73c:
             41 5d
                                       %r13
                                 pop
 48a73e:
             c3
                          retq
 48a73f:
             90
                           nop
 48a740:
             48 89 df
                                       %rbx,%rdi
                                 mov
 48a743:
             44 89 e2
                                 mov
                                       %r12d,%edx
             44 89 ee
 48a746:
                                 mov
                                       %r13d.%esi
             e8 12 f9 ff ff
                                 callq 48a060 <_dl_check_map_versions>
 48a749:
             48 8b 5b 18
                                       0x18(%rbx),%rbx
 48a74e:
                                 mov
                                 test %eax,%eax
 48a752:
             85 c0
             0f 95 c0
                                 setne %al
 48a754:
```

```
48a757:
             0f b6 c0
                                 movzbl %al.%eax
 48a75a:
             09 c5
                                      %eax,%ebp
 48a75c:
             48 85 db
                                 test %rbx,%rbx
 48a75f:
             75 bf
                                       48a720 < dl check all versions+0x20>
                                 ine
 48a761:
             48 83 c4 08
                                 add
                                       $0x8,%rsp
 48a765:
             89 e8
                                        %ebp,%eax
                                 mov
 48a767:
             5b
                                %rbx
                           pop
 48a768:
             5d
                           pop
                                %rbp
 48a769:
             41 5c
                                       %r12
                                 pop
 48a76b:
             41 5d
                                       %r13
                                 pop
 48a76d:
             c3
                           retq
 48a76e:
             66 90
                                       %ax,%ax
                                 xchg
00000000048a770 <call_dl_lookup>:
 48a770:
             53
                           push %rbx
             48 89 fb
 48a771:
                                        %rdi,%rbx
                                 mov
 48a774:
             48 8b 37
                                        (%rdi),%rsi
                                 mov
                                        0x18(%rbx),%eax
 48a777:
             8b 43 18
                                 mov
 48a77a:
             48 8b 57 28
                                        0x28(%rdi),%rdx
                                 mov
 48a77e:
             45 31 c9
                                       %r9d,%r9d
                                 xor
 48a781:
             48 8b 7f 08
                                        0x8(%rdi),%rdi
                                 mov
 48a785:
             4c 8b 43 10
                                 mov
                                        0x10(\%rbx),\%r8
 48a789:
             48 8b 8e 80 03 00 00 mov
                                        0x380(%rsi),%rcx
 48a790:
             6a 00
                                 pushq $0x0
                           push %rax
 48a792:
             50
 48a793:
             e8 18 07 ff ff
                                 callq 47aeb0 <_dl_lookup_symbol_x>
 48a798:
             48 89 03
                                        %rax,(%rbx)
                                 mov
 48a79b:
             58
                                %rax
                           pop
 48a79c:
             5a
                                %rdx
                           pop
 48a79d:
                                %rbx
             5b
                           pop
 48a79e:
             c3
                           retq
 48a79f:
             90
                           nop
000000000048a7a0 <_dl_vsym>:
             41 54
                                 push %r12
 48a7a0:
 48a7a2:
             55
                           push
                                %rbp
 48a7a3:
             48 89 cd
                                        %rcx,%rbp
                                 mov
 48a7a6:
             53
                                %rbx
                           push
 48a7a7:
             49 89 fc
                                 mov
                                        %rdi,%r12
                                        %rsi,%rbx
 48a7aa:
             48 89 f3
                                 mov
 48a7ad:
             48 81 ec a0 00 00 00 sub
                                       $0xa0,%rsp
 48a7b4:
             0f b6 0a
                                 movzbl (%rdx),%ecx
 48a7b7:
             64 48 8b 04 25 28 00 mov
                                        %fs:0x28,%rax
 48a7be:
             00 00
 48a7c0:
             48 89 84 24 98 00 00 mov
                                        %rax,0x98(%rsp)
 48a7c7:
             00
 48a7c8:
             31 c0
                                       %eax,%eax
                                 xor
                                        %rdx,0x20(%rsp)
 48a7ca:
             48 89 54 24 20
                                 mov
 48a7cf:
             c7 44 24 2c 01 00 00 movl $0x1,0x2c(%rsp)
 48a7d6:
             00
 48a7d7:
             48 85 c9
                                      %rcx,%rcx
                                 test
 48a7da:
             0f 84 80 00 00 00
                                 je
                                      48a860 <_dl_vsym+0xc0>
```

```
48a7e0:
            0f b6 72 01
                                 movzbl 0x1(%rdx),%esi
48a7e4:
            40 84 f6
                                 test %sil,%sil
48a7e7:
            0f 84 73 01 00 00
                                 je
                                     48a960 < dl vsym + 0x1c0 >
48a7ed:
            48 c1 e1 04
                                 shl
                                     $0x4.%rcx
            48 8d 04 0e
                                     (%rsi,%rcx,1),%rax
48a7f1:
                                lea
48a7f5:
            0f b6 4a 02
                                 movzbl 0x2(%rdx),%ecx
48a7f9:
            84 c9
                                 test %cl,%cl
48a7fb:
            74 63
                                     48a860 < dl vsym+0xc0>
                                 je
48a7fd:
            48 c1 e0 04
                                 shl
                                     $0x4,%rax
48a801:
            48 01 c8
                                     %rcx,%rax
            0f b6 4a 03
                                 movzbl 0x3(%rdx),%ecx
48a804:
            84 c9
                                 test %cl,%cl
48a808:
                                     48a860 < dl vsym+0xc0>
            74 54
48a80a:
                                 ie
48a80c:
            48 c1 e0 04
                                 shl
                                     $0x4,%rax
                                     %rcx,%rax
48a810:
            48 01 c8
                                 add
                                 movzbl 0x4(%rdx),%ecx
48a813:
            0f b6 4a 04
48a817:
            84 c9
                                 test %cl,%cl
                                     48a860 < dl vsym+0xc0>
48a819:
            74 45
                                 ie
48a81b:
            48 c1 e0 04
                                 shl
                                     $0x4,%rax
48a81f:
            48 01 c8
                                 add
                                      %rcx,%rax
48a822:
            48 8d 4a 05
                                 lea
                                     0x5(%rdx), %rcx
48a826:
            0f b6 52 05
                                 movzbl 0x5(%rdx),%edx
48a82a:
            84 d2
                                 test %dl.%dl
                                     48a852 <_dl_vsym+0xb2>
48a82c:
            74 24
                                 je
                                 xchg %ax,%ax
48a82e:
            66 90
48a830:
            48 c1 e0 04
                                 shl
                                     $0x4,%rax
            48 83 c1 01
                                      $0x1,%rcx
48a834:
                                 add
48a838:
            48 01 d0
                                      %rdx,%rax
                                 add
48a83b:
            48 89 c2
                                 mov
                                       %rax,%rdx
48a83e:
            48 c1 ea 18
                                      $0x18,%rdx
                                 shr
            81 e2 f0 00 00 00
48a842:
                                      $0xf0,%edx
                                 and
48a848:
                                      %rdx,%rax
            48 31 d0
                                 xor
48a84b:
            0f b6 11
                                 movzbl (%rcx),%edx
48a84e:
            84 d2
                                 test %dl,%dl
                                      48a830 <_dl_vsym+0x90>
48a850:
            75 de
                                 ine
48a852:
            25 ff ff ff 0f
                                 and
                                      $0xffffffff.%eax
48a857:
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48a85e:
            00 00
48a860:
            48 89 ef
                                       %rbp,%rdi
                                 mov
48a863:
            89 44 24 28
                                       %eax,0x28(%rsp)
                                 mov
48a867:
            48 c7 44 24 30 00 00 movq $0x0,0x30(%rsp)
48a86e:
            00 00
            48 c7 44 24 18 00 00 movq $0x0,0x18(%rsp)
48a870:
            00 00
48a877:
48a879:
            e8 62 b6 ff ff
                                 callq 485ee0 <_dl_find_dso_for_object>
                                 test %rax,%rax
48a87e:
            48 85 c0
            48 Of 44 O5 57 Oa 23 cmove 0x230a57(%rip),%rax
48a881:
                                                                 # 6bb2e0 <_dl_ns>
48a888:
            00
            4d 85 e4
                                 test %r12,%r12
48a889:
            0f 84 de 00 00 00
                                     48a970 <_dl_vsym+0x1d0>
48a88c:
                                ie
48a892:
            49 83 fc ff
                                       $0xfffffffffffffff,%r12
                                 cmp
            74 78
48a896:
                                 je
                                     48a910 <_dl_vsym+0x170>
```

```
48a898:
            48 8d 54 24 18
                                 lea 0x18(\%rsp),%rdx
                                 pushq $0x0
48a89d:
            6a 00
48a89f:
            6a 00
                                 pushq $0x0
48a8a1:
            49 8d 8c 24 88 03 00 lea
                                     0x388(%r12),%rcx
48a8a8:
            00
48a8a9:
            45 31 c9
                                      %r9d,%r9d
                                 xor
48a8ac:
            4c 89 e6
                                 mov
                                       %r12,%rsi
            4c 8d 44 24 30
48a8af:
                                 lea
                                      0x30(%rsp),%r8
48a8b4:
            48 89 df
                                       %rbx,%rdi
                                 mov
48a8b7:
            e8 f4 05 ff ff
                                 callq 47aeb0 <_dl_lookup_symbol_x>
48a8bc:
            5a
                          pop
                                %rdx
            59
                                %rcx
48a8bd:
                          pop
            48 8b 4c 24 18
                                       0x18(%rsp),%rcx
48a8be:
                                 mov
48a8c3:
            48 85 c9
                                 test %rcx,%rcx
48a8c6:
            0f 84 d4 00 00 00
                                     48a9a0 <_dl_vsym+0x200>
                                 je
                                      %edx,%edx
48a8cc:
            31 d2
                                 xor
48a8ce:
            48 85 c0
                                 test %rax,%rax
48a8d1:
            74 03
                                     48a8d6 < dl vsym+0x136>
                                 ie
48a8d3:
            48 8b 10
                                       (%rax),%rdx
                                 mov
48a8d6:
            48 8b 41 08
                                 mov
                                       0x8(%rcx),%rax
48a8da:
            48 01 d0
                                      %rdx,%rax
                                 add
48a8dd:
            0f b6 51 04
                                 movzbl 0x4(%rcx),%edx
48a8e1:
            83 e2 0f
                                 and
                                      $0xf.%edx
                                       $0xa,%dl
48a8e4:
            80 fa 0a
                                 cmp
48a8e7:
            0f 84 a3 00 00 00
                                     48a990 < dl_vsym + 0x1f0 >
                                 ie
48a8ed:
            48 8b 9c 24 98 00 00 mov
                                       0x98(%rsp),%rbx
48a8f4:
            00
48a8f5:
            64 48 33 1c 25 28 00 xor
                                      %fs:0x28,%rbx
            00 00
48a8fc:
48a8fe:
            0f 85 8b 01 00 00
                                      48aa8f < dl_vsym + 0x2ef >
                                jne
            48 81 c4 a0 00 00 00 add
                                      $0xa0,%rsp
48a904:
48a90b:
            5b
                                %rbx
                          pop
48a90c:
            5d
                          pop
                                %rbp
48a90d:
            41 5c
                                      %r12
                                 pop
48a90f:
            c3
                          retq
            48 3b 05 c9 09 23 00 cmp
48a910:
                                       0x2309c9(%rip),%rax
                                                                # 6bb2e0 < dl ns>
            48 89 c1
                                       %rax,%rcx
48a917:
                                 mov
48a91a:
            75 Of
                                      48a92b < dl vsym + 0x18b >
                                 ine
                                 jmpq 48a9b0 <_dl_vsym+0x210>
48a91c:
            e9 8f 00 00 00
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48a921:
48a928:
            48 89 d1
                                       %rdx,%rcx
                                 mov
48a92b:
            48 8b 91 d8 02 00 00 mov
                                       0x2d8(\%rcx),\%rdx
48a932:
            48 85 d2
                                 test %rdx,%rdx
48a935:
            75 f1
                                      48a928 <_dl_vsym+0x188>
                                 jne
48a937:
            48 8d 54 24 18
                                lea
                                      0x18(%rsp),%rdx
48a93c:
            50
                          push %rax
            6a 00
48a93d:
                                 pushq $0x0
            48 81 c1 88 03 00 00 add
                                      $0x388,%rcx
48a93f:
48a946:
            4c 8d 44 24 30
                                 lea
                                      0x30(\%rsp),\%r8
48a94b:
            48 89 c6
                                       %rax,%rsi
                                 mov
                                       %rbx,%rdi
48a94e:
            48 89 df
                                 mov
            45 31 c9
                                      %r9d,%r9d
48a951:
                                 xor
```

```
48a954:
             e8 57 05 ff ff
                                 callq 47aeb0 < dl lookup symbol x>
48a959:
             5e
                          pop
                                %rsi
48a95a:
             5f
                                %rdi
                          pop
48a95b:
             e9 5e ff ff ff
                                 impg 48a8be < dl vsvm+0x11e>
48a960:
             0f b6 c1
                                 movzbl %cl,%eax
48a963:
             e9 f8 fe ff ff
                                 impq 48a860 < dl vsym+0xc0>
48a968:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48a96f:
             00
48a970:
             64 8b 14 25 18 00 00 mov
                                       %fs:0x18,%edx
48a977:
             00
                                 test %edx,%edx
48a978:
             85 d2
48a97a:
             75 64
                                      48a9e0 < dl vsvm+0x240 >
                                 ine
48a97c:
             48 8b 88 80 03 00 00 mov
                                       0x380(%rax),%rcx
48a983:
             48 8d 54 24 18
                                 lea
                                      0x18(\%rsp),\%rdx
48a988:
             6a 00
                                 pushq $0x0
48a98a:
             6a 01
                                 pushq $0x1
48a98c:
             eb b8
                                 jmp
                                       48a946 <_dl_vsym+0x1a6>
                                 xchg %ax,%ax
48a98e:
             66 90
48a990:
             ff d0
                          callq *%rax
             e9 56 ff ff ff
                                 jmpq 48a8ed <_dl_vsym+0x14d>
48a992:
48a997:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48a99e:
             00 00
48a9a0:
             31 c0
                                 xor
                                      %eax,%eax
                                 jmpq 48a8ed <_dl_vsym+0x14d>
             e9 46 ff ff ff
48a9a2:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48a9a7:
48a9ae:
             00 00
             48 85 c0
                                 test %rax,%rax
48a9b0:
                                      48a9cb < dl vsym+0x22b>
48a9b3:
             74 16
                                 je
             48 3b a8 40 03 00 00 cmp
                                       0x340(%rax),%rbp
48a9b5:
48a9bc:
             72 0d
                                 jb
                                      48a9cb < dl_vsym + 0x22b >
             48 3b a8 48 03 00 00 cmp
                                       0x348(%rax),%rbp
48a9be:
             0f 82 60 ff ff ff
                                      48a92b < dl_vsym + 0x18b >
48a9c5:
                                 jb
48a9cb:
             48 8d 0d de 0c 02 00 lea
                                      0x20cde(%rip),%rcx
                                                              # 4ab6b0
<__PRETTY_FUNCTION__.8641+0x20>
                                      %edx,%edx
48a9d2:
             31 d2
                                 xor
48a9d4:
             31 f6
                                 xor
                                      %esi,%esi
48a9d6:
             31 ff
                                %edi,%edi
                          xor
             e8 d3 7e ff ff
48a9d8:
                                 callq 4828b0 < dl signal error>
48a9dd:
             0f 1f 00
                                 nopl (%rax)
48a9e0:
             48 89 44 24 08
                                 mov
                                       %rax,0x8(%rsp)
                                     0x20(%rsp),%rax
48a9e5:
             48 8d 44 24 20
                                 lea
48a9ea:
             c7 44 24 78 05 00 00 movl $0x5,0x78(%rsp)
48a9f1:
             00
                                 movq 0x8(%rsp),%xmm0
48a9f2:
             f3 0f 7e 44 24 08
48a9f8:
             48 89 5c 24 08
                                       %rbx,0x8(%rsp)
48a9fd:
             0f 16 44 24 08
                                 movhps 0x8(%rsp),%xmm0
48aa02:
             48 89 44 24 70
                                 mov
                                       %rax,0x70(%rsp)
                                 lea 0x18(%rsp),%rax
48aa07:
             48 8d 44 24 18
                                 movaps %xmm0,0x60(%rsp)
48aa0c:
             0f 29 44 24 60
             48 89 84 24 88 00 00 mov
                                       %rax,0x88(%rsp)
48aa11:
48aa18:
             00
48aa19:
             64 c7 04 25 1c 00 00 movl $0x1,%fs:0x1c
```

```
48aa20:
             00 01 00 00 00
 48aa25:
             48 8d 5c 24 40
                                       0x40(%rsp), %rbx
                                  lea
                                  lea
 48aa2a:
             48 8d 54 24 60
                                       0x60(%rsp), %rdx
 48aa2f:
             48 8d 35 3a fd ff ff
                                  lea
                                       -0x2c6(%rip),%rsi
                                                             # 48a770 < call dl lookup>
 48aa36:
             48 89 df
                                        %rbx,%rdi
                                  mov
 48aa39:
             e8 c2 7e ff ff
                                  callq 482900 < dl catch exception>
 48aa3e:
             41 89 c0
                                  mov
                                        %eax,%r8d
                                       %eax,%eax
 48aa41:
             31 c0
                                  xor
 48aa43:
             64 87 04 25 1c 00 00 xchg %eax,%fs:0x1c
 48aa4a:
                                        $0x2,%eax
 48aa4b:
             83 f8 02
                                  cmp
             75 21
                                       48aa71 < dl vsvm+0x2d1>
 48aa4e:
                                  ine
 48aa50:
             64 48 8b 3c 25 10 00 mov
                                        %fs:0x10,%rdi
 48aa57:
             00 00
             45 31 d2
                                       %r10d,%r10d
 48aa59:
                                  xor
                                       $0x1c,%rdi
 48aa5c:
             48 83 c7 1c
                                  add
 48aa60:
             ba 01 00 00 00
                                  mov
                                        $0x1,%edx
 48aa65:
             be 81 00 00 00
                                        $0x81,%esi
                                  mov
 48aa6a:
             b8 ca 00 00 00
                                        $0xca,%eax
                                  mov
 48aa6f:
             0f 05
                                  syscall
 48aa71:
             48 83 7c 24 48 00
                                  cmpg $0x0,0x48(%rsp)
 48aa77:
             48 8b 44 24 60
                                  mov
                                        0x60(\%rsp),\%rax
 48aa7c:
             0f 84 3c fe ff ff
                                      48a8be < dl vsym+0x11e>
                                  ie
                                       %edx,%edx
 48aa82:
             31 d2
                                  xor
 48aa84:
             48 89 de
                                  mov
                                        %rbx,%rsi
 48aa87:
             44 89 c7
                                        %r8d,%edi
                                  mov
             e8 d1 7d ff ff
                                  callq 482860 < dl signal exception>
 48aa8a:
             e8 8c 17 fc ff
                                  callq 44c220 < stack chk fail>
 48aa8f:
                                  xchg %ax,%ax
 48aa94:
             66 90
 48aa96:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
             00 00 00
 48aa9d:
000000000048aaa0 <_dl_sym>:
                                  push %r12
 48aaa0:
             41 54
             55
                           push %rbp
 48aaa2:
 48aaa3:
             49 89 d4
                                  mov
                                        %rdx,%r12
                           push %rbx
 48aaa6:
             53
 48aaa7:
             48 89 fb
                                        %rdi.%rbx
                                  mov
 48aaaa:
             48 89 d7
                                        %rdx,%rdi
                                  mov
                                        %rsi,%rbp
 48aaad:
             48 89 f5
                                  mov
 48aab0:
                                        $0xfffffffffff80,%rsp
             48 83 c4 80
                                  add
 48aab4:
             64 48 8b 04 25 28 00 mov
                                        %fs:0x28,%rax
 48aabb:
             00 00
             48 89 44 24 78
 48aabd:
                                        %rax,0x78(%rsp)
                                  mov
 48aac2:
             31 c0
                                  xor
                                       %eax,%eax
 48aac4:
             48 c7 44 24 18 00 00 movg $0x0,0x18(%rsp)
 48aacb:
             00 00
                                  callq 485ee0 <_dl_find_dso_for_object>
 48aacd:
             e8 0e b4 ff ff
 48aad2:
                                  test %rax,%rax
             48 85 c0
 48aad5:
             48 0f 44 05 03 08 23 cmove 0x230803(%rip),%rax
                                                                   # 6bb2e0 < dl ns>
 48aadc:
             00
 48aadd:
             48 85 db
                                  test %rbx,%rbx
```

```
48aae0:
            0f 84 ca 00 00 00
                                     48abb0 < dl svm + 0x110 >
                                 ie
48aae6:
            48 83 fb ff
                                       $0xffffffffffffff,%rbx
                                 cmp
48aaea:
            74 74
                                 je
                                      48ab60 < dl sym+0xc0>
48aaec:
            48 8d 54 24 18
                                 lea
                                      0x18(%rsp), %rdx
48aaf1:
            48 8d 8b 88 03 00 00 lea
                                      0x388(%rbx),%rcx
48aaf8:
            6a 00
                                 pushq $0x0
48aafa:
            6a 02
                                 pushq $0x2
48aafc:
            45 31 c9
                                      %r9d,%r9d
                                 xor
48aaff:
            45 31 c0
                                      %r8d,%r8d
                                 xor
48ab02:
            48 89 de
                                       %rbx,%rsi
                                 mov
48ab05:
            48 89 ef
                                 mov
                                       %rbp,%rdi
            e8 a3 03 ff ff
                                 callq 47aeb0 < dl lookup symbol x>
48ab08:
48ab0d:
                                %rdx
            5a
                          pop
48ab0e:
            59
                                %rcx
                          pop
48ab0f:
            48 8b 4c 24 18
                                       0x18(%rsp), %rcx
                                 mov
                                 test %rcx,%rcx
48ab14:
            48 85 c9
48ab17:
            0f 84 c3 00 00 00
                                      48abe0 <_dl_sym+0x140>
                                 je
48ab1d:
            31 d2
                                      %edx,%edx
                                 xor
48ab1f:
            48 85 c0
                                 test %rax,%rax
48ab22:
            74 03
                                 je
                                     48ab27 <_dl_sym+0x87>
48ab24:
            48 8b 10
                                       (%rax),%rdx
                                 mov
48ab27:
            48 8b 41 08
                                 mov
                                       0x8(\%rcx),\%rax
48ab2b:
            48 01 d0
                                 add
                                      %rdx.%rax
            0f b6 51 04
                                 movzbl 0x4(%rcx),%edx
48ab2e:
                                      $0xf,%edx
48ab32:
            83 e2 0f
                                 and
48ab35:
            80 fa 0a
                                       $0xa,%dl
                                 cmp
48ab38:
            0f 84 92 00 00 00
                                     48abd0 < dl sym + 0x130 >
                                 ie
            48 8b 74 24 78
                                       0x78(%rsp),%rsi
48ab3e:
                                 mov
            64 48 33 34 25 28 00 xor
48ab43:
                                      %fs:0x28,%rsi
48ab4a:
            00 00
            0f 85 79 01 00 00
48ab4c:
                                 ine
                                      48accb < dl sym + 0x22b >
            48 83 ec 80
                                      $0xffffffffff80,%rsp
48ab52:
                                 sub
48ab56:
            5b
                                %rbx
                          pop
48ab57:
            5d
                          pop
                                %rbp
            41 5c
48ab58:
                                       %r12
                                 pop
48ab5a:
            c3
                          retq
                                      0x0(\%rax,\%rax,1)
48ab5b:
            0f 1f 44 00 00
                                 nopl
            48 3b 05 79 07 23 00 cmp
                                                                 # 6bb2e0 <_ dl ns>
48ab60:
                                       0x230779(%rip),%rax
48ab67:
            48 89 c1
                                 mov
                                       %rax,%rcx
            75 Of
                                 jne 48ab7b <_dl_sym+0xdb>
48ab6a:
48ab6c:
            e9 7f 00 00 00
                                 jmpq 48abf0 <_dl_sym+0x150>
48ab71:
            Of 1f 80 00 00 00 00 nopl 0x0(%rax)
48ab78:
            48 89 d1
                                 mov
                                       %rdx,%rcx
            48 8b 91 d8 02 00 00 mov
48ab7b:
                                       0x2d8(\%rcx),\%rdx
48ab82:
            48 85 d2
                                 test %rdx,%rdx
48ab85:
            75 f1
                                 ine
                                      48ab78 < dl sym+0xd8>
48ab87:
            48 8d 54 24 18
                                 lea
                                      0x18(%rsp), %rdx
                          push %rax
48ab8c:
            50
            6a 00
                                 pushq $0x0
48ab8d:
            48 81 c1 88 03 00 00 add
                                      $0x388,%rcx
48ab8f:
            48 89 c6
                                       %rax,%rsi
48ab96:
                                 mov
            48 89 ef
48ab99:
                                       %rbp,%rdi
                                 mov
```

```
48ab9c:
             45 31 c9
                                       %r9d,%r9d
                                 xor
48ab9f:
             45 31 c0
                                       %r8d,%r8d
                                 xor
                                 callq 47aeb0 <_dl_lookup_symbol_x>
48aba2:
             e8 09 03 ff ff
48aba7:
                                %rsi
             5e
                           pop
             5f
                                %rdi
48aba8:
                           pop
48aba9:
             e9 61 ff ff ff
                                       48ab0f < dl sym + 0x6f >
                                 jmpg
48abae:
             66 90
                                 xchg
                                        %ax,%ax
             64 8b 14 25 18 00 00 mov
                                        %fs:0x18,%edx
48abb0:
48abb7:
             00
48abb8:
             85 d2
                                 test %edx,%edx
             75 64
48abba:
                                 ine
                                       48ac20 <_dl_sym+0x180>
             48 8b 88 80 03 00 00 mov
                                        0x380(%rax),%rcx
48abbc:
48abc3:
             48 8d 54 24 18
                                      0x18(%rsp),%rdx
                                 lea
48abc8:
             6a 00
                                 pushq $0x0
48abca:
             6a 03
                                 pushq $0x3
                                       48ab96 < dl sym + 0xf6 >
48abcc:
             eb c8
                                 jmp
48abce:
             66 90
                                 xchg
                                       %ax,%ax
48abd0:
             ff d0
                           callq *%rax
48abd2:
             e9 67 ff ff ff
                                        48ab3e < dl sym+0x9e>
                                 impa
48abd7:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48abde:
             00 00
             31 c0
48abe0:
                                 xor
                                       %eax,%eax
48abe2:
             e9 57 ff ff ff
                                 jmpq 48ab3e < dl sym+0x9e >
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48abe7:
48abee:
             00 00
48abf0:
             48 85 c0
                                 test %rax,%rax
             74 16
                                      48ac0b < dl sym+0x16b>
48abf3:
                                 ie
                                        0x340(%rax),%r12
48abf5:
             4c 3b a0 40 03 00 00 cmp
                                      48ac0b < dl_sym + 0x16b >
48abfc:
             72 0d
                                 jb
48abfe:
             4c 3b a0 48 03 00 00 cmp
                                        0x348(%rax),%r12
             0f 82 70 ff ff ff
                                      48ab7b < dl sym + 0xdb >
48ac05:
                                 ib
                                      0x20a9e(%rip),%rcx
48ac0b:
             48 8d 0d 9e 0a 02 00 lea
                                                              # 4ab6b0
< PRETTY FUNCTION .8641+0x20>
48ac12:
             31 d2
                                       %edx,%edx
                                 xor
             31 f6
48ac14:
                                 xor
                                       %esi,%esi
48ac16:
             31 ff
                                %edi,%edi
                          xor
             e8 93 7c ff ff
                                 callq 4828b0 <_dl_signal_error>
48ac18:
48ac1d:
             0f 1f 00
                                 nopl (%rax)
48ac20:
             48 89 44 24 08
                                 mov
                                        %rax,0x8(%rsp)
48ac25:
             48 8d 44 24 18
                                 lea 0x18(\%rsp),\%rax
48ac2a:
             48 c7 44 24 50 00 00 movq $0x0,0x50(%rsp)
48ac31:
             00 00
                                 movg 0x8(%rsp),%xmm0
48ac33:
             f3 0f 7e 44 24 08
48ac39:
             48 89 6c 24 08
                                 mov
                                        %rbp,0x8(%rsp)
48ac3e:
             0f 16 44 24 08
                                 movhps 0x8(%rsp),%xmm0
48ac43:
             c7 44 24 58 07 00 00 movl $0x7,0x58(%rsp)
48ac4a:
             00
48ac4b:
             48 89 44 24 68
                                        %rax,0x68(%rsp)
48ac50:
             0f 29 44 24 40
                                 movaps %xmm0,0x40(%rsp)
             64 c7 04 25 1c 00 00 movl $0x1,%fs:0x1c
48ac55:
48ac5c:
             00 01 00 00 00
48ac61:
             48 8d 5c 24 20
                                      0x20(%rsp),%rbx
                                 lea
```

```
48ac66:
             48 8d 54 24 40
                                  lea
                                       0x40(%rsp), %rdx
 48ac6b:
             48 8d 35 fe fa ff ff
                                       -0x502(%rip),%rsi
                                  lea
                                                             # 48a770 <call dl lookup>
 48ac72:
             48 89 df
                                  mov
                                        %rbx,%rdi
 48ac75:
             e8 86 7c ff ff
                                  callq 482900 < dl catch exception>
 48ac7a:
             41 89 c0
                                         %eax,%r8d
                                  mov
 48ac7d:
             31 c0
                                       %eax,%eax
                                  xor
 48ac7f:
             64 87 04 25 1c 00 00 xchg %eax,%fs:0x1c
 48ac86:
             00
 48ac87:
             83 f8 02
                                        $0x2,%eax
                                  cmp
 48ac8a:
             75 21
                                  jne
                                       48acad < dl sym + 0x20d >
             64 48 8b 3c 25 10 00 mov
                                        %fs:0x10,%rdi
 48ac8c:
 48ac93:
             00 00
             45 31 d2
 48ac95:
                                        %r10d,%r10d
                                  xor
 48ac98:
             48 83 c7 1c
                                  add
                                        $0x1c,%rdi
             ba 01 00 00 00
                                        $0x1,%edx
 48ac9c:
                                  mov
             be 81 00 00 00
                                        $0x81.%esi
 48aca1:
                                  mov
 48aca6:
             b8 ca 00 00 00
                                  mov
                                        $0xca,%eax
 48acab:
             0f 05
                                  syscall
 48acad:
             48 83 7c 24 28 00
                                  cmpg $0x0,0x28(%rsp)
 48acb3:
             48 8b 44 24 40
                                  mov
                                        0x40(%rsp),%rax
 48acb8:
             0f 84 51 fe ff ff
                                       48ab0f < dl_sym + 0x6f >
                                  ie
 48acbe:
             31 d2
                                  xor
                                       %edx,%edx
 48acc0:
             48 89 de
                                  mov
                                        %rbx,%rsi
             44 89 c7
                                        %r8d.%edi
 48acc3:
                                  mov
             e8 95 7b ff ff
                                  callq 482860 <_dl_signal_exception>
 48acc6:
 48accb:
             e8 50 15 fc ff
                                  callq 44c220 < stack chk fail>
000000000048acd0 < unordtf2>:
 48acd0:
             48 83 ec 38
                                        $0x38,%rsp
                                  sub
 48acd4:
             0f 29 04 24
                                  movaps %xmm0,(%rsp)
             0f 29 4c 24 10
                                  movaps %xmm1,0x10(%rsp)
 48acd8:
                                  stmxcsr 0x2c(%rsp)
 48acdd:
             0f ae 5c 24 2c
 48ace2:
             48 ba ff ff ff ff
                                  movabs $0xfffffffffff,%rdx
 48ace9:
             ff 00 00
             48 8b 4c 24 08
                                        0x8(%rsp),%rcx
 48acec:
                                  mov
 48acf1:
             48 8b 44 24 18
                                  mov
                                        0x18(\%rsp),\%rax
                                        (%rsp),%rsi
 48acf6:
             48 8b 34 24
                                  mov
 48acfa:
             4c 8b 4c 24 10
                                        0x10(\%rsp),\%r9
                                  mov
 48acff:
             49 89 ca
                                         %rcx,%r10
                                  mov
             48 c1 e9 30
 48ad02:
                                       $0x30,%rcx
                                  shr
 48ad06:
             49 21 d2
                                        %rdx,%r10
                                  and
 48ad09:
             48 21 c2
                                  and
                                        %rax,%rdx
                                       $0x30,%rax
 48ad0c:
             48 c1 e8 30
                                  shr
             25 ff 7f 00 00
                                        $0x7fff,%eax
 48ad10:
                                  and
 48ad15:
             81 e1 ff 7f 00 00
                                  and
                                        $0x7fff,%ecx
 48ad1b:
             49 89 d0
                                        %rdx,%r8
                                  mov
 48ad1e:
             48 89 c2
                                        %rax,%rdx
                                  mov
             75 35
                                  jne
                                       48ad58 < unordtf2+0x88>
 48ad21:
 48ad23:
             49 09 f2
                                       %rsi,%r10
                                  or
                                       48ae00 <__unordtf2+0x130>
 48ad26:
             0f 84 d4 00 00 00
                                  je
 48ad2c:
             31 c0
                                       %eax,%eax
                                  xor
 48ad2e:
             48 81 fa ff 7f 00 00
                                        $0x7fff,%rdx
                                  cmp
```

```
48ad35:
            bf 02 00 00 00
                                       $0x2,%edi
                                 mov
48ad3a:
            0f 84 10 01 00 00
                                     48ae50 < unordtf2+0x180>
                                 ie
48ad40:
            48 89 04 24
                                 mov
                                       %rax,(%rsp)
48ad44:
            e8 77 03 00 00
                                 callq 48b0c0 < sfp handle exceptions>
48ad49:
            48 8b 04 24
                                       (%rsp),%rax
                                 mov
48ad4d:
            48 83 c4 38
                                 add
                                      $0x38,%rsp
48ad51:
            с3
                          retq
48ad52:
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48ad58:
            48 85 c0
                                 test %rax,%rax
                                     48adc0 < unordtf2+0xf0>
48ad5b:
            75 63
                                 ine
            4c 89 c0
                                      %r8,%rax
48ad5d:
                                 mov
48ad60:
                               %edi,%edi
            31 ff
                          xor
48ad62:
            4c 09 c8
                                     %r9,%rax
48ad65:
            40 0f 95 c7
                                 setne %dil
                               %edi,%edi
48ad69:
            01 ff
                          add
            48 81 f9 ff 7f 00 00
                                       $0x7fff,%rcx
48ad6b:
                                cmp
48ad72:
            0f 85 94 00 00 00
                                 ine
                                      48ae0c <__unordtf2+0x13c>
48ad78:
            4c 09 d6
                                     %r10,%rsi
                                 or
                                     48ae20 < unordtf2+0x150>
48ad7b:
            0f 85 9f 00 00 00
                                 ine
48ad81:
            48 81 fa ff 7f 00 00
                                cmp
                                       $0x7fff,%rdx
48ad88:
            0f 85 7e 00 00 00
                                      48ae0c < unordtf2+0x13c>
                                 ine
48ad8e:
            4c 89 c0
                                 mov
                                       %r8,%rax
48ad91:
            4c 09 c8
                                     %r9,%rax
                                 or
48ad94:
            74 76
                                     48ae0c < unordtf2+0x13c>
                                 je
48ad96:
            4d 09 c1
                                     %r8,%r9
                                 or
48ad99:
            b8 01 00 00 00
                                 mov
                                       $0x1,%eax
                                     48ae0e < unordtf2+0x13e>
48ad9e:
            74 6e
                                 ie
            48 ba 00 00 00 00 00 movabs $0x80000000000,%rdx
48ada0:
            80 00 00
48ada7:
48adaa:
            49 85 d0
                                 test %rdx,%r8
            75 5f
                                     48ae0e < unordtf2+0x13e>
48adad:
                                 ine
48adaf:
                                     $0x1,%edi
            83 cf 01
                                 or
48adb2:
            b8 01 00 00 00
                                 mov
                                       $0x1,%eax
48adb7:
            eb 87
                                      48ad40 <__unordtf2+0x70>
                                 imp
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48adb9:
48adc0:
            31 ff
                          xor
                               %edi,%edi
                                       $0x7fff,%rcx
48adc2:
            48 81 f9 ff 7f 00 00
                                 cmp
48adc9:
            74 ad
                                     48ad78 < unordtf2+0xa8>
                                je
48adcb:
            31 c0
                                      %eax,%eax
                                 xor
            48 81 fa ff 7f 00 00
48adcd:
                                       $0x7fff,%rdx
                                 cmp
48add4:
            0f 85 73 ff ff ff
                                      48ad4d < unordtf2+0x7d>
                                 ine
48adda:
            4d 09 c1
                                 or
                                     %r8,%r9
48addd:
            0f 84 6a ff ff ff
                                 je
                                     48ad4d < unordtf2+0x7d>
            48 b8 00 00 00 00 00 movabs $0x80000000000,%rax
48ade3:
48adea:
            80 00 00
48aded:
            49.85 c0
                                 test %rax,%r8
                                     48ae8c <__unordtf2+0x1bc>
48adf0:
            0f 84 96 00 00 00
                                 je
            b8 01 00 00 00
                                       $0x1,%eax
48adf6:
                                 mov
                                jmpq 48ad4d <__unordtf2+0x7d>
48adfb:
            e9 4d ff ff ff
            48 85 c0
                                 test %rax,%rax
48ae00:
48ae03:
            75 c6
                                      48adcb < unordtf2+0xfb>
                                 ine
            4d 09 c8
48ae05:
                                 or
                                     %r9,%r8
```

```
48ae08:
             75 76
                                       48ae80 < unordtf2+0x1b0>
 48ae0a:
             31 ff
                           xor
                                %edi,%edi
 48ae0c:
             31 c0
                                  xor
                                       %eax,%eax
 48ae0e:
             85 ff
                           test %edi,%edi
                                       48ad40 < unordtf2+0x70>
 48ae10:
             Of 85 2a ff ff ff
                                  ine
 48ae16:
             48 83 c4 38
                                  add $0x38,%rsp
 48ae1a:
             с3
                           retq
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
 48ae1b:
 48ae20:
             48 b8 00 00 00 00 00 movabs $0x80000000000,%rax
 48ae27:
             80 00 00
             49 85 c2
                                  test %rax,%r10
 48ae2a:
             0f 84 7c ff ff ff
                                      48adaf < unordtf2+0xdf>
 48ae2d:
                                  ie
             48 81 fa ff 7f 00 00
 48ae33:
                                        $0x7fff,%rdx
                                  cmp
 48ae3a:
             b8 01 00 00 00
                                  mov
                                        $0x1,%eax
             75 cd
 48ae3f:
                                      48ae0e <__unordtf2+0x13e>
                                  ine
             e9 50 ff ff ff
                                  jmpg 48ad96 < unordtf2+0xc6>
 48ae41:
 48ae46:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48ae4d:
             00 00 00
                                      %r8,%r9
 48ae50:
             4d 09 c1
                                  or
 48ae53:
             0f 84 e7 fe ff ff
                                  je
                                      48ad40 <__unordtf2+0x70>
             48 b8 00 00 00 00 00 movabs $0x80000000000,%rax
 48ae59:
 48ae60:
             80 00 00
 48ae63:
             49.85 c0
                                  test %rax,%r8
             0f 84 43 ff ff ff
                                      48adaf <__unordtf2+0xdf>
 48ae66:
                                  ie
             b8 01 00 00 00
 48ae6c:
                                        $0x1,%eax
                                  mov
 48ae71:
             e9 ca fe ff ff
                                  impq 48ad40 < unordtf2+0x70>
 48ae76:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
             00 00 00
 48ae7d:
                                       %eax,%eax
 48ae80:
             31 c0
                                  xor
             bf 02 00 00 00
 48ae82:
                                        $0x2,%edi
                                  mov
             e9 b4 fe ff ff
                                  jmpq 48ad40 < unordtf2+0x70>
 48ae87:
             31 ff
                                %edi,%edi
 48ae8c:
                           xor
                                  jmpq 48adaf <__unordtf2+0xdf>
 48ae8e:
             e9 1c ff ff ff
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48ae93:
 48ae9a:
             00 00 00
 48ae9d:
             0f 1f 00
                                  nopl (%rax)
000000000048aea0 < letf2>:
 48aea0:
             41 56
                                  push %r14
             53
                                 %rbx
 48aea2:
                           push
 48aea3:
             48 83 ec 38
                                       $0x38,%rsp
                                  sub
 48aea7:
             0f 29 04 24
                                  movaps %xmm0,(%rsp)
                                  movaps %xmm1,0x10(%rsp)
 48aeab:
             0f 29 4c 24 10
                                  stmxcsr 0x2c(%rsp)
 48aeb0:
             0f ae 5c 24 2c
 48aeb5:
             48 ba ff ff ff ff
                                  movabs $0xfffffffffff,%rdx
 48aebc:
             ff 00 00
 48aebf:
             48 89 d1
                                        %rdx,%rcx
                                  mov
             48 8b 44 24 08
                                  mov
 48aec2:
                                        0x8(%rsp),%rax
                                        (%rsp),%r9
 48aec7:
             4c 8b 0c 24
                                  mov
             48 8b 74 24 10
                                        0x10(%rsp),%rsi
 48aecb:
                                  mov
 48aed0:
                                        %rax,%r11
             49 89 c3
                                  mov
 48aed3:
                                        %rax,%rdi
             48 89 c7
                                  mov
```

```
48aed6:
            48 c1 e8 3f
                                 shr
                                       $0x3f.%rax
                                        %rax,%r8
48aeda:
            49 89 c0
                                 mov
48aedd:
            48 8b 44 24 18
                                 mov
                                        0x18(\%rsp),\%rax
48aee2:
            49 21 d3
                                       %rdx.%r11
                                 and
48aee5:
            48 c1 ef 30
                                       $0x30,%rdi
                                 shr
48aee9:
            48 89 c2
                                        %rax,%rdx
                                 mov
48aeec:
            48 21 c1
                                 and
                                       %rax,%rcx
            48 c1 e8 3f
                                       $0x3f,%rax
48aeef:
                                 shr
48aef3:
            48 c1 ea 30
                                       $0x30,%rdx
                                 shr
48aef7:
            81 e2 ff 7f 00 00
                                 and
                                       $0x7fff,%edx
            81 e7 ff 7f 00 00
48aefd:
                                 and
                                       $0x7fff,%edi
48af03:
            75 6b
                                       48af70 < letf2+0xd0>
                                 ine
48af05:
            4c 89 db
                                        %r11.%rbx
                                 mov
            4c 09 cb
48af08:
                                      %r9,%rbx
                                 or
            0f 84 e7 00 00 00
48af0b:
                                      48aff8 <__letf2+0x158>
                                 je
            41 ba 02 00 00 00
                                        $0x2,%r10d
48af11:
                                 mov
48af17:
            48 81 fa ff 7f 00 00
                                 cmp
                                        $0x7fff,%rdx
48af1e:
            75 11
                                       48af31 < letf2+0x91>
                                 ine
48af20:
            48 89 cb
                                 mov
                                        %rcx,%rbx
48af23:
            48 09 f3
                                 or
                                      %rsi,%rbx
48af26:
            0f 85 04 01 00 00
                                       48b030 < letf2+0x190>
                                 ine
48af2c:
            48 85 ff
                                 test %rdi,%rdi
48af2f:
            75 76
                                 ine
                                       48afa7 < letf2+0x107>
            4c 89 db
                                        %r11,%rbx
48af31:
                                 mov
48af34:
            4c 09 cb
                                      %r9,%rbx
                                 or
48af37:
            48 85 d2
                                      %rdx,%rdx
                                 test
48af3a:
            75 0c
                                       48af48 < letf2+0xa8>
                                 ine
                                        %rcx,%r14
            49 89 ce
48af3c:
                                 mov
                                      %rsi,%r14
48af3f:
            49 09 f6
                                 or
48af42:
            0f 84 d8 00 00 00
                                      48b020 <__letf2+0x180>
                                 je
48af48:
            48 85 db
                                 test %rbx,%rbx
48af4b:
                                 jne
                                       48b0a7 <__letf2+0x207>
            0f 85 56 01 00 00
48af51:
            48 83 f8 01
                                 cmp
                                        $0x1,%rax
48af55:
            48 19 c0
                                 sbb
                                       %rax,%rax
                                      $0x1,%rax
48af58:
            48 83 c8 01
                                 or
48af5c:
            45 85 d2
                                 test
                                      %r10d,%r10d
                                       48b039 <__letf2+0x199>
48af5f:
            0f 85 d4 00 00 00
                                 ine
48af65:
            48 83 c4 38
                                 add
                                       $0x38,%rsp
48af69:
            5b
                                %rbx
                           pop
            41 5e
48af6a:
                                       %r14
                                 pop
48af6c:
            с3
                          retq
48af6d:
            0f 1f 00
                                 nopl (%rax)
48af70:
            48 85 d2
                                 test %rdx,%rdx
                                       48afc0 <__letf2+0x120>
48af73:
            75 4b
                                 jne
48af75:
            48 89 cb
                                 mov
                                        %rcx,%rbx
48af78:
            45 31 d2
                                       %r10d,%r10d
                                 xor
48af7b:
            48 09 f3
                                      %rsi,%rbx
                                 or
            41 0f 95 c2
48af7e:
                                 setne %r10b
            45 01 d2
                                       %r10d,%r10d
48af82:
                                 add
48af85:
            48 81 ff ff 7f 00 00
                                        $0x7fff,%rdi
                                 cmp
48af8c:
            75 9e
                                       48af2c < letf2+0x8c>
                                 ine
48af8e:
            4c 89 db
                                        %r11,%rbx
                                 mov
```

```
48af91:
            4c 09 cb
                                      %r9.%rbx
                                 or
48af94:
            0f 85 96 00 00 00
                                      48b030 < letf2+0x190>
                                 ine
48af9a:
            48 81 fa ff 7f 00 00
                                 cmp
                                       $0x7fff,%rdx
48afa1:
            0f 84 79 ff ff ff
                                      48af20 < letf2+0x80>
                                 ie
48afa7:
            48 85 d2
                                 test %rdx,%rdx
48afaa:
            75 2d
                                      48afd9 < letf2+0x139>
                                 ine
48afac:
            48 89 cb
                                 mov
                                       %rcx,%rbx
48afaf:
            48 09 f3
                                      %rsi.%rbx
                                 or
48afb2:
            74 2a
                                      48afde <__letf2+0x13e>
                                 ie
48afb4:
            eb 23
                                 imp 48afd9 < letf2+0x139>
            66 2e 0f 1f 84 00 00
                                nopw %cs:0x0(%rax,%rax,1)
48afb6:
            00 00 00
48afbd:
48afc0:
            45 31 d2
                                      %r10d,%r10d
                                 xor
48afc3:
            48 81 ff ff 7f 00 00
                                       $0x7fff,%rdi
                                 cmp
                                     48af8e <__letf2+0xee>
48afca:
            74 c2
                                 je
            48 81 fa ff 7f 00 00
                                       $0x7fff,%rdx
48afcc:
                                 cmp
48afd3:
            0f 84 47 ff ff ff
                                 je
                                      48af20 < letf2+0x80>
48afd9:
            49 39 c0
                                       %rax,%r8
                                 cmp
                                      48b058 < letf2+0x1b8>
48afdc:
            74 7a
                                 ie
48afde:
            49 83 f8 01
                                 cmp
                                       $0x1,%r8
48afe2:
            48 19 c0
                                      %rax,%rax
                                 sbb
48afe5:
            83 e0 02
                                 and
                                      $0x2,%eax
48afe8:
            48 83 e8 01
                                 sub
                                      $0x1.%rax
                                 jmpq 48af5c <__letf2+0xbc>
48afec:
            e9 6b ff ff ff
            0f 1f 80 00 00 00 00
                                nopl 0x0(\%rax)
48aff1:
48aff8:
            45 31 d2
                                 xor
                                      %r10d,%r10d
            48 85 d2
                                 test %rdx,%rdx
48affb:
            0f 85 13 ff ff ff
                                      48af17 < letf2+0x77>
48affe:
                                 ine
                                       %rcx,%rbx
48b004:
            48 89 cb
                                 mov
48b007:
            45 31 d2
                                      %r10d,%r10d
                                 xor
            48 09 f3
48b00a:
                                      %rsi,%rbx
                                 or
            41 0f 95 c2
                                 setne %r10b
48b00d:
48b011:
            45 01 d2
                                 add
                                      %r10d,%r10d
48b014:
            e9 18 ff ff ff
                                 jmpq 48af31 <__letf2+0x91>
            0f 1f 80 00 00 00 00
48b019:
                                nopl 0x0(\%rax)
48b020:
            31 c0
                                 xor
                                      %eax,%eax
48b022:
            48 85 db
                                 test %rbx,%rbx
            0f 84 31 ff ff ff
48b025:
                                      48af5c < letf2+0xbc>
                                 ie
                                       48afde < letf2+0x13e>
48b02b:
            eb b1
                                 jmp
48b02d:
            0f 1f 00
                                 nopl (%rax)
48b030:
            41 83 ca 01
                                      $0x1,%r10d
                                 or
48b034:
            b8 02 00 00 00
                                       $0x2,%eax
                                 mov
                                       %r10d,%edi
48b039:
            44 89 d7
                                 mov
48b03c:
            48 89 04 24
                                       %rax,(%rsp)
                                 mov
48b040:
            e8 7b 00 00 00
                                 callq 48b0c0 <__sfp_handle_exceptions>
                                 mov
48b045:
            48 8b 04 24
                                       (%rsp),%rax
48b049:
            48 83 c4 38
                                 add
                                       $0x38,%rsp
48b04d:
            5b
                                %rbx
                          pop
48b04e:
            41 5e
                                 pop
                                       %r14
48b050:
            с3
                          reta
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48b051:
48b058:
            48 39 d7
                                 cmp
                                       %rdx,%rdi
```

```
48b05b:
             7f 81
                                      48afde < letf2+0x13e >
                                 jg
 48b05d:
             48 39 d7
                                       %rdx,%rdi
                                 cmp
                                     48b090 < left + 0x1f0 >
 48b060:
             7c 2e
                                 il
 48b062:
             49 39 cb
                                 cmp
                                       %rcx,%r11
 48b065:
             0f 87 73 ff ff ff
                                     48afde < letf2+0x13e>
                                 ja
                                 sete %al
 48b06b:
             0f 94 c0
 48b06e:
             49 39 f1
                                 cmp
                                       %rsi,%r9
             76 08
                                      48b07b < left left 2+0x1db >
 48b071:
                                 ibe
 48b073:
             84 c0
                                 test %al,%al
                                     48afde < letf2+0x13e>
 48b075:
             0f 85 63 ff ff ff
                                 ine
                                       %rcx,%r11
 48b07b:
             49 39 cb
                                 cmp
             72 10
                                      48b07e:
                                 ib
             49 39 f1
 48b080:
                                       %rsi,%r9
                                 cmp
 48b083:
             73 1b
                                 iae
                                     48b0a0 < letf2+0x200>
                                 test %al,%al
 48b085:
             84 c0
             74 17
                                     48b0a0 < letf2+0x200>
 48b087:
                                 je
 48b089:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
 48b090:
             49 83 f8 01
                                 cmp
                                      $0x1,%r8
                                      %rax,%rax
 48b094:
             48 19 c0
                                 sbb
 48b097:
             48 83 c8 01
                                 or
                                      $0x1,%rax
 48b09b:
             e9 bc fe ff ff
                                 impg 48af5c < letf2+0xbc>
                                      %eax,%eax
             31 c0
 48b0a0:
                                 xor
 48b0a2:
             e9 b5 fe ff ff
                                 jmpq 48af5c <__letf2+0xbc>
             49 39 c0
                                       %rax,%r8
 48b0a7:
                                 cmp
                                      48afde < letf2+0x13e>
 48b0aa:
             Of 85 2e ff ff ff
                                 jne
 48b0b0:
             eb ab
                                 jmp 	 48b05d < letf2+0x1bd>
 48b0b2:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48b0b9:
             00 00 00
             0f 1f 40 00
                                 nopl 0x0(\%rax)
 48b0bc:
00000000048b0c0 < sfp handle exceptions>:
 48b0c0:
             40 f6 c7 01
                                 test $0x1,%dil
                                     48b0d4 < __sfp_handle_exceptions+0x14>
 48b0c4:
             74 0e
                                 pxor %xmm0,%xmm0
 48b0c6:
             66 0f ef c0
             f3 0f 5e c0
                                 divss %xmm0,%xmm0
 48b0ca:
 48b0ce:
             f3 0f 11 44 24 d0
                                 movss \%xmm0,-0x30(\%rsp)
             40 f6 c7 02
                                 test $0x2,%dil
 48b0d4:
                                     48b0e9 < sfp handle exceptions+0x29>
 48b0d8:
             74 Of
                                 fnstenv -0x28(%rsp)
 48b0da:
             d9 74 24 d8
 48b0de:
             66 83 4c 24 dc 02
                                 orw $0x2,-0x24(\%rsp)
 48b0e4:
             d9 64 24 d8
                                 fldenv -0x28(%rsp)
 48b0e8:
             9b
                          fwait
 48b0e9:
             40 f6 c7 04
                                 test $0x4,%dil
                                     48b105 < __sfp_handle_exceptions+0x45>
 48b0ed:
             74 16
                                 je
 48b0ef:
             f3 0f 10 05 e9 05 02 movss 0x205e9(%rip),%xmm0
                                                                  # 4ab6e0
< PRETTY FUNCTION .8641+0x50>
 48b0f6:
             00
 48b0f7:
             f3 0f 5e 05 85 9c 01 divss 0x19c85(%rip),%xmm0
                                                                 # 4a4d84
<dummy_bucket.10468>
 48b0fe:
             00
 48b0ff:
             f3 0f 11 44 24 d4
                                 movss %xmm0,-0x2c(%rsp)
                                 test $0x8,%dil
 48b105:
             40 f6 c7 08
```

```
48b109:
             74 0f
                                     48b11a < sfp handle exceptions+0x5a>
 48b10b:
             d9 74 24 d8
                                 fnsteny -0x28(%rsp)
             66 83 4c 24 dc 08
 48b10f:
                                 orw
                                       0x8,-0x24(%rsp)
 48b115:
             d9 64 24 d8
                                 fldenv -0x28(%rsp)
 48b119:
             9b
                          fwait
 48b11a:
             40 f6 c7 10
                                 test $0x10,%dil
 48b11e:
             74 0f
                                     48b12f < __sfp_handle_exceptions+0x6f>
             d9 74 24 d8
                                 fnsteny -0x28(%rsp)
 48b120:
 48b124:
             66 83 4c 24 dc 10
                                       0x10,-0x24(%rsp)
 48b12a:
             d9 64 24 d8
                                 fldenv -0x28(%rsp)
 48b12e:
             9b
                          fwait
 48b12f:
             83 e7 20
                                      $0x20.%edi
                                 and
                                     48b14a < sfp handle exceptions+0x8a>
 48b132:
             74 16
                                 je
 48b134:
             f3 0f 10 05 a4 05 02 movss 0x205a4(%rip),%xmm0
                                                                  # 4ab6e0
<__PRETTY_FUNCTION__.8641+0x50>
 48b13b:
             00
 48b13c:
             f3 0f 5e 05 a0 05 02 divss 0x205a0(%rip),%xmm0
                                                                 # 4ab6e4
<__PRETTY_FUNCTION__.8641+0x54>
 48b143:
             00
 48b144:
             f3 0f 11 44 24 d8
                                 movss \%xmm0,-0x28(\%rsp)
 48b14a:
             f3 c3
                                 repz retq
 48b14c:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
00000000048b150 <read_encoded_value_with_base>:
                                       $0x50,%dil
 48b150:
             40 80 ff 50
                                 cmp
 48b154:
             49 89 ca
                                 mov
                                       %rcx,%r10
             74 57
                                     48b1b0 < read encoded value with base+0x60>
 48b157:
                                 ie
             89 f9
 48b159:
                                       %edi,%ecx
                                 mov
                                      $0xf,%ecx
 48b15b:
             83 e1 0f
                                 and
 48b15e:
             80 f9 0c
                                       $0xc,%cl
                                 cmp
                                     48b283 < read encoded value with base+0x133>
 48b161:
             0f 87 1c 01 00 00
                                 ja
                                     0x2057a(%rip),%r8
48b167:
             4c 8d 05 7a 05 02 00 lea
                                                            # 4ab6e8
<__PRETTY_FUNCTION .8641+0x58>
 48b16e:
             0f b6 c9
                                 movzbl %cl,%ecx
                                 movslq (%r8,%rcx,4),%rax
 48b171:
             49 63 04 88
 48b175:
             4c 01 c0
                                 add
                                      %r8,%rax
                                 *%rax
 48b178:
             ff e0
                          jmpq
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax.\%rax.1)
 48b17a:
 48b180:
             4c 8b 02
                                 mov
                                       (%rdx),%r8
 48b183:
             48 8d 42 08
                                 lea
                                     0x8(%rdx),%rax
 48b187:
             4d 85 c0
                                 test %r8,%r8
 48b18a:
             74 17
                                 ie
                                     48b1a3 < read encoded value with base+0x53>
 48b18c:
             89 f9
                                       %edi,%ecx
                                 mov
                                      $0x70,%ecx
 48b18e:
             83 e1 70
                                 and
 48b191:
             80 f9 10
                                 cmp $0x10,%cl
 48b194:
             48 0f 44 f2
                                 cmove %rdx,%rsi
 48b198:
             49 01 f0
                                 add
                                      %rsi,%r8
             40 84 ff
 48b19b:
                                 test %dil,%dil
             79 03
                                      48b1a3 < read_encoded_value_with_base+0x53>
 48b19e:
                                 jns
             4d 8b 00
 48b1a0:
                                       (%r8),%r8
                                 mov
                                       %r8,(%r10)
 48b1a3:
             4d 89 02
                                 mov
 48b1a6:
             c3
                          retq
```

```
48b1a7:
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48b1ae:
            00 00
48b1b0:
            48 8d 42 07
                                lea
                                     0x7(\%rdx),\%rax
48b1b4:
            48 83 e0 f8
                                 and
                                      $0xffffffffffff8,%rax
48b1b8:
            4c 8b 00
                                       (%rax),%r8
                                mov
48b1bb:
            48 8d 40 08
                                     0x8(%rax),%rax
                                lea
48b1bf:
            4d 89 02
                                mov
                                       %r8,(%r10)
48b1c2:
            c3
                          retq
            0f 1f 44 00 00
                                nopl 0x0(\%rax,\%rax,1)
48b1c3:
                                movswq (%rdx),%r8
48b1c8:
            4c 0f bf 02
                                     0x2(%rdx),%rax
48b1cc:
            48 8d 42 02
                                      48b187 < read encoded value with base + 0x37>
48b1d0:
            eb b5
                                imp
48b1d2:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
48b1d8:
            48 89 d0
                                mov
                                       %rdx,%rax
            45 31 c0
48b1db:
                                      %r8d,%r8d
                                xor
                                      %ecx,%ecx
48b1de:
            31 c9
                                xor
48b1e0:
            48 83 c0 01
                                add
                                      $0x1,%rax
            44 0f b6 58 ff
                                movzbl -0x1(%rax),%r11d
48b1e4:
                                       %r11.%r9
48b1e9:
            4d 89 d9
                                mov
48b1ec:
            41 83 e1 7f
                                and
                                      $0x7f,%r9d
48b1f0:
            49 d3 e1
                                     %cl,%r9
                                shl
48b1f3:
            83 c1 07
                                add
                                     $0x7,%ecx
48b1f6:
            4d 09 c8
                                     %r9,%r8
                                or
            45 84 db
                                test %r11b,%r11b
48b1f9:
48b1fc:
            78 e2
                                     48b1e0 < read encoded value with base + 0x90 >
48b1fe:
            eb 87
                                      48b187 < read encoded value with base + 0x37>
            44 0f b7 02
                                movzwl (%rdx),%r8d
48b200:
            48 8d 42 02
                                lea 0x2(%rdx),%rax
48b204:
            e9 7a ff ff ff
                                jmpq 48b187 <read_encoded_value_with_base+0x37>
48b208:
48b20d:
            0f 1f 00
                                nopl (%rax)
                                       (%rdx),%r8d
48b210:
            44 8b 02
                                mov
            48 8d 42 04
                                lea 0x4(%rdx),%rax
48b213:
48b217:
            e9 6b ff ff ff
                                jmpq 48b187 <read_encoded_value_with_base+0x37>
48b21c:
            0f 1f 40 00
                                nopl 0x0(\%rax)
            4c 63 02
                                movslq (%rdx),%r8
48b220:
48b223:
            48 8d 42 04
                                    0x4(%rdx),%rax
                                jmpq 48b187 < read_encoded_value_with_base+0x37>
48b227:
            e9 5b ff ff ff
48b22c:
            0f 1f 40 00
                                nopl 0x0(\%rax)
                                       %rdx,%rax
48b230:
            48 89 d0
                                mov
                                      %r8d,%r8d
48b233:
            45 31 c0
                                xor
48b236:
            31 c9
                                      %ecx,%ecx
                                xor
48b238:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48b23f:
            00
                                      $0x1,%rax
48b240:
            48 83 c0 01
                                add
48b244:
            44 0f b6 58 ff
                                movzbl -0x1(%rax),%r11d
48b249:
            4d 89 d9
                                       %r11.%r9
                                mov
                                      $0x7f,%r9d
48b24c:
            41 83 e1 7f
                                and
            49 d3 e1
                                     %cl,%r9
48b250:
                                shl
            83 c1 07
                                     $0x7,%ecx
48b253:
                                add
48b256:
            4d 09 c8
                                     %r9,%r8
                                or
48b259:
            45 84 db
                                test %r11b,%r11b
48b25c:
            78 e2
                                     48b240 <read_encoded_value_with_base+0xf0>
                                js
```

```
48b261:
             0f 87 20 ff ff ff
                                      48b187 < read encoded value with base+0x37>
                                 ia
 48b267:
             41 83 e3 40
                                 and
                                       $0x40,%r11d
 48b26b:
             0f 84 16 ff ff ff
                                      48b187 < read encoded value with base+0x37>
                                 ie
 48b271:
             49 c7 c1 ff ff ff ff
                                 48b278:
             49 d3 e1
                                 shl
                                      %cl,%r9
 48b27b:
             4d 09 c8
                                      %r9,%r8
                                 or
             e9 09 ff ff ff
                                 jmpq 48b18c <read encoded value with base+0x3c>
 48b27e:
 48b283:
             48 83 ec 08
                                       $0x8,%rsp
                                 sub
                                 callq 40e090 <abort>
 48b287:
             e8 04 2e f8 ff
                                 nopl 0x0(\%rax)
 48b28c:
             0f 1f 40 00
00000000048b290 <base of encoded value>:
 48b290:
             40 80 ff ff
                                 cmp
                                       $0xff,%dil
 48b294:
             74 35
                                 je
                                      48b2cb <base_of_encoded_value+0x3b>
 48b296:
             83 e7 70
                                      $0x70,%edi
                                 and
 48b299:
             40 80 ff 20
                                 cmp $0x20,%dil
 48b29d:
             74 41
                                      48b2e0 <base of encoded value+0x50>
                                 je
 48b29f:
             76 1f
                                     48b2c0 <br/>base of encoded value+0x30>
                                 ibe
 48b2a1:
             40 80 ff 40
                                 cmp
                                       $0x40,%dil
 48b2a5:
             74 29
                                      48b2d0 <base of encoded value+0x40>
                                 je
 48b2a7:
             40 80 ff 50
                                 cmp
                                       $0x50,%dil
 48b2ab:
             74 1e
                                 ie
                                      48b2cb <base of encoded value+0x3b>
             40 80 ff 30
                                       $0x30.%dil
 48b2ad:
                                 cmp
                                      48b2e8 <base_of_encoded_value+0x58>
             75 35
 48b2b1:
                                 ine
 48b2b3:
             48 8b 86 b0 00 00 00 mov
                                       0xb0(%rsi),%rax
 48b2ba:
             с3
                                 nopl 0x0(\%rax,\%rax,1)
 48b2bb:
             0f 1f 44 00 00
                                 test %dil,%dil
 48b2c0:
             40 84 ff
 48b2c3:
             74 06
                                      48b2cb <base_of_encoded_value+0x3b>
                                 je
                                       $0x10,%dil
 48b2c5:
             40 80 ff 10
                                 cmp
                                      48b2e8 <base_of_encoded_value+0x58>
 48b2c9:
             75 1d
                                 ine
             31 c0
 48b2cb:
                                 xor
                                      %eax,%eax
 48b2cd:
             с3
                          retq
             66 90
                                       %ax,%ax
 48b2ce:
                                 xchg
 48b2d0:
             48 8b 86 b8 00 00 00 mov
                                       0xb8(%rsi),%rax
 48b2d7:
             c3
                          reta
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48b2d8:
 48b2df:
             00
             48 8b 86 a8 00 00 00 mov
 48b2e0:
                                       0xa8(%rsi),%rax
 48b2e7:
             с3
                          retq
 48b2e8:
             48 83 ec 08
                                 sub
                                       $0x8,%rsp
                                 callq 40e090 <abort>
 48b2ec:
             e8 9f 2d f8 ff
                                 nopl 0x0(\%rax,\%rax,1)
 48b2f1:
             0f 1f 44 00 00
 48b2f6:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48b2fd:
             00 00 00
00000000048b300 <execute_cfa_program>:
 48b300:
             48 39 f7
                                       %rsi,%rdi
                                 cmp
             48 c7 81 20 01 00 00 movg $0x0,0x120(%rcx)
 48b303:
 48b30a:
             00 00 00 00
             0f 83 2b 09 00 00
 48b30e:
                                      48bc3f <execute_cfa_program+0x93f>
                                 jae
```

\$0x3f,%ecx

cmp

48b25e:

83 f9 3f

```
48b314:
             55
                          push %rbp
48b315:
             48 89 e5
                                 mov
                                       %rsp,%rbp
48b318:
             41 57
                                 push %r15
48b31a:
             41 56
                                      %r14
                                 push
                                      %r13
48b31c:
             41 55
                                 push
48b31e:
             41 54
                                      %r12
                                 push
48b320:
             49 89 d5
                                 mov
                                       %rdx,%r13
                          push %rbx
48b323:
             53
48b324:
             49 89 cc
                                       %rcx,%r12
                                 mov
48b327:
             48 83 ec 48
                                 sub
                                      $0x48,%rsp
             49 8b 85 c0 00 00 00 mov
                                       0xc0(%r13),%rax
48b32b:
48b332:
             48 8b 91 48 01 00 00 mov
                                       0x148(%rcx),%rdx
48b339:
             48 c1 e8 3f
                                      $0x3f,%rax
                                 shr
48b33d:
             49 03 85 98 00 00 00 add
                                      0x98(%r13),%rax
48b344:
             48 39 c2
                                       %rax,%rdx
                                 cmp
             0f 83 91 00 00 00
48b347:
                                      48b3de <execute cfa program+0xde>
                                 iae
48b34d:
             48 8d 45 c8
                                 lea
                                      -0x38(%rbp),%rax
48b351:
             4c 8d 3d c4 03 02 00 lea
                                      0x203c4(%rip),%r15
                                                             # 4ab71c
< PRETTY FUNCTION .8641+0x8c>
48b358:
             49 89 f6
                                 mov
                                       %rsi,%r14
48b35b:
             45 31 c0
                                      %r8d,%r8d
                                 xor
48b35e:
             41 ba 01 00 00 00
                                 mov
                                       $0x1,%r10d
48b364:
             41 b9 60 01 00 00
                                       $0x160,%r9d
                                 mov
             48 89 45 b8
48b36a:
                                 mov
                                       %rax,-0x48(%rbp)
                                 xchg %ax,%ax
48b36e:
             66 90
48b370:
             0f b6 07
                                 movzbl (%rdi),%eax
             48 8d 5f 01
                                     0x1(%rdi),%rbx
48b373:
                                 lea
48b377:
             89 c1
                                       %eax,%ecx
                                 mov
48b379:
             83 e1 c0
                                 and
                                      $0xffffffc0,%ecx
48b37c:
             80 f9 40
                                       $0x40,%cl
                                 cmp
             74 1f
48b37f:
                                     48b3a0 <execute cfa program+0xa0>
                                 je
             80 f9 80
48b381:
                                       $0x80,%cl
                                 cmp
48b384:
             0f 84 86 00 00 00
                                 je
                                     48b410 <execute_cfa_program+0x110>
48b38a:
             80 f9 c0
                                       $0xc0,%cl
                                 cmp
             74 61
                                     48b3f0 <execute_cfa_program+0xf0>
48b38d:
                                 je
48b38f:
             3c 2f
                                 cmp
                                       $0x2f,%al
48b391:
             0f 87 aa 08 00 00
                                     48bc41 <execute_cfa_program+0x941>
48b397:
             49 63 04 87
                                 movslq (%r15,%rax,4),%rax
48b39b:
             4c 01 f8
                                 add
                                      %r15,%rax
                                *%rax
48b39e:
             ff e0
                          jmpq
48b3a0:
             83 e0 3f
                                      $0x3f,%eax
                                 and
48b3a3:
             48 89 df
                                 mov
                                       %rbx,%rdi
             49 0f af 84 24 60 01 imul 0x160(%r12),%rax
48b3a6:
             00 00
48b3ad:
48b3af:
             48 01 d0
                                 add
                                      %rdx,%rax
48b3b2:
             49 89 84 24 48 01 00 mov
                                       %rax,0x148(%r12)
48b3b9:
             00
             49 39 fe
48b3ba:
                                 cmp
                                       %rdi,%r14
                                      48b3de <execute_cfa_program+0xde>
             76 1f
48b3bd:
                                 jbe
             49 8b 85 c0 00 00 00 mov
                                       0xc0(%r13),%rax
48b3bf:
             49 8b 94 24 48 01 00 mov
                                       0x148(%r12),%rdx
48b3c6:
48b3cd:
             00
```

```
48b3ce:
            48 c1 e8 3f
                                shr
                                     $0x3f,%rax
48b3d2:
            49 03 85 98 00 00 00 add
                                      0x98(%r13),%rax
48b3d9:
            48 39 c2
                                cmp
                                      %rax,%rdx
48b3dc:
            72 92
                                ib
                                     48b370 <execute cfa program+0x70>
48b3de:
            48 8d 65 d8
                                lea
                                     -0x28(%rbp),%rsp
48b3e2:
                               %rbx
            5b
                          pop
48b3e3:
            41 5c
                                      %r12
                                pop
48b3e5:
            41 5d
                                      %r13
                                pop
48b3e7:
            41 5e
                                      %r14
                                pop
48b3e9:
            41 5f
                                      %r15
                                pop
48b3eb:
            5d
                          pop
                               %rbp
48b3ec:
            с3
                          reta
            0f 1f 00
48b3ed:
                                nopl (%rax)
48b3f0:
            83 e0 3f
                                and
                                      $0x3f,%eax
                                      $0x11,%al
48b3f3:
            3c 11
                                cmp
                                movzbl %al.%edx
48b3f5:
            0f b6 d0
48b3f8:
            77 6e
                                ia
                                     48b468 <execute_cfa_program+0x168>
48b3fa:
            48 c1 e2 04
                                shl
                                     $0x4,%rdx
48b3fe:
            48 89 df
                                mov
                                       %rbx,%rdi
48b401:
            41 c7 44 14 08 00 00 movl $0x0,0x8(%r12,%rdx,1)
48b408:
            00 00
48b40a:
            eb ae
                                jmp
                                      48b3ba <execute_cfa_program+0xba>
48b40c:
            0f 1f 40 00
                                nopl 0x0(\%rax)
            83 e0 3f
                                      $0x3f,%eax
48b410:
                                and
48b413:
            48 89 df
                                      %rbx,%rdi
                                mov
48b416:
            31 c9
                                      %ecx,%ecx
                                xor
48b418:
            44 0f b6 d8
                                movzbl %al,%r11d
            31 db
                                xor %ebx,%ebx
48b41c:
                                xchg %ax,%ax
48b41e:
            66 90
48b420:
            48 83 c7 01
                                add
                                      $0x1,%rdi
                                movzbl -0x1(%rdi),%esi
48b424:
            0f b6 77 ff
48b428:
            48 89 f2
                                      %rsi,%rdx
                                mov
48b42b:
            83 e2 7f
                                and
                                     $0x7f,%edx
48b42e:
            48 d3 e2
                                shl
                                     %cl,%rdx
                                     $0x7,%ecx
48b431:
            83 c1 07
                                add
48b434:
            48 09 d3
                                     %rdx,%rbx
48b437:
            40 84 f6
                                test %sil,%sil
                                     48b420 <execute cfa program+0x120>
48b43a:
            78 e4
                                is
                                imul 0x158(%r12),%rbx
48b43c:
            49 0f af 9c 24 58 01
            00 00
48b443:
48b445:
            3c 11
                                      $0x11,%al
                                cmp
            Of 87 6d ff ff ff
48b447:
                                ia
                                     48b3ba <execute cfa program+0xba>
48b44d:
            49 c1 e3 04
                                shl
                                     $0x4,%r11
                                      %r12,%r11
48b451:
            4d 01 e3
                                add
48b454:
            41 c7 43 08 01 00 00 movl $0x1,0x8(%r11)
48b45b:
                                       %rbx,(%r11)
            49 89 1b
48b45c:
                                mov
            e9 56 ff ff ff
                                jmpq 48b3ba <execute_cfa_program+0xba>
48b45f:
            0f 1f 40 00
                                nopl 0x0(\%rax)
48b464:
            48 89 df
                                      %rbx,%rdi
48b468:
                                mov
            e9 4a ff ff ff
                                jmpq 48b3ba <execute_cfa_program+0xba>
48b46b:
            31 f6
                                      %esi,%esi
48b470:
                                xor
```

```
48b472:
            31 c9
                                     %ecx,%ecx
                                xor
48b474:
            0f 1f 40 00
                                nopl 0x0(\%rax)
48b478:
            48 83 c3 01
                                add
                                      $0x1,%rbx
48b47c:
            0f b6 53 ff
                                movzbl -0x1(%rbx),%edx
48b480:
            48 89 d0
                                      %rdx,%rax
                                mov
48b483:
            83 e0 7f
                                     $0x7f,%eax
                                and
48b486:
            48 d3 e0
                                shl
                                     %cl,%rax
                                     $0x7,%ecx
48b489:
            83 c1 07
                                add
48b48c:
            48 09 c6
                                     %rax,%rsi
                                or
48b48f:
            84 d2
                                test %dl,%dl
                                     48b478 <execute_cfa_program+0x178>
48b491:
            78 e5
                                js
            49 89 b5 d0 00 00 00 mov
                                       %rsi,0xd0(%r13)
48b493:
48b49a:
            48 89 df
                                       %rbx,%rdi
                                mov
48b49d:
            e9 18 ff ff ff
                                impq 48b3ba <execute_cfa_program+0xba>
                                nopw 0x0(\%rax,\%rax,1)
48b4a2:
            66 0f 1f 44 00 00
            45 0f b6 9c 24 70 01 movzbl 0x170(%r12),%r11d
48b4a8:
48b4af:
            00 00
48b4b1:
            4c 89 ee
                                       %r13,%rsi
                                mov
48b4b4:
            4c 89 4d 98
                                       %r9,-0x68(%rbp)
                                mov
48b4b8:
            4c 89 55 a0
                                mov
                                       %r10,-0x60(%rbp)
48b4bc:
            4c 89 45 a8
                                       %r8,-0x58(%rbp)
                                mov
48b4c0:
            44 89 df
                                mov
                                       %r11d,%edi
48b4c3:
            44 89 5d b4
                                      %r11d,-0x4c(%rbp)
                                mov
            e8 c4 fd ff ff
                                callq 48b290 <base of encoded value>
48b4c7:
48b4cc:
            44 8b 5d b4
                                       -0x4c(%rbp),%r11d
                                mov
48b4d0:
            48 8b 4d b8
                                       -0x48(%rbp),%rcx
                                mov
48b4d4:
            48 89 da
                                       %rbx,%rdx
                                mov
48b4d7:
            48 89 c6
                                       %rax,%rsi
                                mov
            44 89 df
48b4da:
                                       %r11d,%edi
                                mov
48b4dd:
            e8 6e fc ff ff
                                callq 48b150 <read_encoded_value_with_base>
48b4e2:
            48 89 c7
                                mov
                                       %rax,%rdi
            48 8b 45 c8
                                      -0x38(%rbp), %rax
48b4e5:
                                mov
48b4e9:
            4c 8b 45 a8
                                mov
                                       -0x58(%rbp), %r8
48b4ed:
            4c 8b 55 a0
                                       -0x60(%rbp), %r10
                                mov
                                       -0x68(%rbp), %r9
48b4f1:
            4c 8b 4d 98
                                mov
48b4f5:
            49 89 84 24 48 01 00 mov
                                       %rax,0x148(%r12)
            00
48b4fc:
48b4fd:
            e9 b8 fe ff ff
                                jmpq 48b3ba <execute cfa program+0xba>
            66 0f 1f 44 00 00
48b502:
                                nopw 0x0(\%rax,\%rax,1)
                                movzbl 0x1(%rdi),%eax
48b508:
            0f b6 47 01
48b50c:
            48 83 c7 02
                                      $0x2,%rdi
                                add
48b510:
            49 0f af 84 24 60 01 imul 0x160(%r12),%rax
48b517:
            00 00
                                      %rdx,%rax
48b519:
            48 01 d0
                                add
48b51c:
            49 89 84 24 48 01 00 mov
                                      %rax,0x148(%r12)
48b523:
48b524:
            e9 91 fe ff ff
                                impq 48b3ba <execute_cfa_program+0xba>
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48b529:
            0f b7 47 01
                                movzwl 0x1(%rdi),%eax
48b530:
48b534:
            48 83 c7 03
                                add
                                      $0x3,%rdi
48b538:
            49 Of af 84 24 60 01 imul 0x160(%r12),%rax
            00 00
48b53f:
```

```
48b541:
            48 01 d0
                                add
                                      %rdx.%rax
48b544:
            49 89 84 24 48 01 00 mov
                                       %rax,0x148(%r12)
48b54b:
            00
48b54c:
            e9 69 fe ff ff
                                impg 48b3ba <execute cfa program+0xba>
48b551:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
                                      0x1(%rdi),%eax
48b558:
            8b 47 01
                                mov
48b55b:
            48 83 c7 05
                                add
                                      $0x5,%rdi
            49 0f af 84 24 60 01 imul 0x160(%r12),%rax
48b55f:
48b566:
            00 00
                                      %rdx,%rax
48b568:
            48 01 d0
                                add
            49 89 84 24 48 01 00 mov
                                      %rax,0x148(%r12)
48b56b:
48b572:
48b573:
            e9 42 fe ff ff
                                jmpq 48b3ba <execute cfa program+0xba>
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48b578:
48b57f:
            00
            31 d2
                                      %edx,%edx
48b580:
                                xor
48b582:
            31 c9
                                      %ecx,%ecx
                                xor
48b584:
            0f 1f 40 00
                                nopl 0x0(\%rax)
                                     $0x1,%rbx
48b588:
            48 83 c3 01
                                add
48b58c:
            0f b6 73 ff
                                movzbl -0x1(%rbx),%esi
48b590:
            48 89 f0
                                      %rsi,%rax
                                mov
48b593:
            83 e0 7f
                                and
                                      $0x7f,%eax
48b596:
            48 d3 e0
                                shl
                                     %cl,%rax
48b599:
                                     $0x7,%ecx
            83 c1 07
                                add
48b59c:
            48 09 c2
                                     %rax,%rdx
                                or
48b59f:
            40 84 f6
                                test %sil,%sil
48b5a2:
            78 e4
                                     48b588 <execute cfa program+0x288>
                                is
            31 ff
48b5a4:
                               %edi,%edi
                         xor
                                      %ecx,%ecx
48b5a6:
            31 c9
                                xor
48b5a8:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48b5af:
            00
                                add $0x1,%rbx
48b5b0:
            48 83 c3 01
48b5b4:
            0f b6 73 ff
                                movzbl -0x1(%rbx),%esi
48b5b8:
            48 89 f0
                                       %rsi,%rax
                                mov
                                      $0x7f,%eax
48b5bb:
            83 e0 7f
                                and
48b5be:
            48 d3 e0
                                shl
                                     %cl,%rax
48b5c1:
            83 c1 07
                                     $0x7,%ecx
                                add
48b5c4:
            48 09 c7
                                     %rax.%rdi
                                or
                                test %sil,%sil
48b5c7:
            40 84 f6
                                     48b5b0 <execute_cfa_program+0x2b0>
48b5ca:
            78 e4
                                js
48b5cc:
            49 0f af bc 24 58 01 imul 0x158(%r12),%rdi
48b5d3:
            00 00
48b5d5:
            48 83 fa 11
                                cmp
                                      $0x11,%rdx
            0f 87 89 fe ff ff
48b5d9:
                                ja
                                     48b468 <execute_cfa_program+0x168>
48b5df:
            48 c1 e2 04
                                shl
                                     $0x4,%rdx
48b5e3:
            49 8d 04 14
                                     (%r12,%rdx,1),%rax
                                lea
48b5e7:
            48 89 38
                                mov
                                       %rdi,(%rax)
            c7 40 08 01 00 00 00 movl $0x1,0x8(%rax)
48b5ea:
            48 89 df
                                       %rbx,%rdi
48b5f1:
                                mov
            e9 c1 fd ff ff
                                jmpq 48b3ba <execute_cfa_program+0xba>
48b5f4:
48b5f9:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
            31 f6
                                      %esi,%esi
48b600:
                                xor
```

```
48b602:
            31 c9
                                      %ecx,%ecx
                                 xor
48b604:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48b608:
            48 83 c3 01
                                 add
                                      $0x1,%rbx
48b60c:
            0f b6 53 ff
                                 movzbl -0x1(%rbx),%edx
            48 89 d0
                                       %rdx,%rax
48b610:
                                 mov
48b613:
            83 e0 7f
                                      $0x7f,%eax
                                 and
48b616:
            48 d3 e0
                                 shl
                                     %cl,%rax
                                      $0x7,%ecx
48b619:
            83 c1 07
                                 add
            48 09 c6
                                     %rax,%rsi
48b61c:
                                 or
48b61f:
            84 d2
                                 test %dl,%dl
                                     48b608 <execute_cfa_program+0x308>
48b621:
            78 e5
                                 is
            48 83 fe 11
                                 cmp
                                       $0x11.%rsi
48b623:
48b627:
            Of 87 3b fe ff ff
                                     48b468 <execute cfa program+0x168>
                                 ja
48b62d:
            48 c1 e6 04
                                 shl
                                     $0x4,%rsi
                                       %rbx,%rdi
48b631:
            48 89 df
                                 mov
            41 c7 44 34 08 00 00 movl $0x0,0x8(%r12,%rsi,1)
48b634:
48b63b:
            00 00
48b63d:
            e9 78 fd ff ff
                                 jmpq 48b3ba <execute cfa program+0xba>
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48b642:
48b648:
            31 f6
                                 xor
                                      %esi,%esi
48b64a:
            31 c9
                                      %ecx,%ecx
                                 xor
48b64c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48b650:
            48 83 c3 01
                                 add
                                      $0x1.%rbx
                                 movzbl -0x1(%rbx),%edx
48b654:
            0f b6 53 ff
                                       %rdx,%rax
48b658:
            48 89 d0
                                 mov
48b65b:
            83 e0 7f
                                      $0x7f,%eax
                                 and
            48 d3 e0
                                     %cl,%rax
48b65e:
                                 shl
                                 add $0x7,%ecx
48b661:
            83 c1 07
            48 09 c6
                                     %rax,%rsi
48b664:
                                 or
48b667:
            84 d2
                                 test %dl,%dl
                                     48b650 < execute cfa program + 0x350 >
48b669:
            78 e5
                                 is
            48 83 fe 11
                                      $0x11,%rsi
48b66b:
                                 cmp
48b66f:
            0f 87 f3 fd ff ff
                                 ja
                                     48b468 <execute_cfa_program+0x168>
48b675:
            48 c1 e6 04
                                 shl
                                     $0x4,%rsi
                                       %rbx,%rdi
48b679:
            48 89 df
                                 mov
48b67c:
            41 c7 44 34 08 06 00 movl $0x6,0x8(%r12,%rsi,1)
48b683:
            00 00
48b685:
            e9 30 fd ff ff
                                jmpq 48b3ba <execute cfa program+0xba>
48b68a:
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
                                      %esi,%esi
48b690:
            31 f6
                                 xor
48b692:
            31 c9
                                      %ecx,%ecx
                                 xor
48b694:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48b698:
            48 83 c3 01
                                      $0x1,%rbx
                                 add
48b69c:
            0f b6 53 ff
                                 movzbl -0x1(%rbx),%edx
48b6a0:
            48 89 d0
                                 mov
                                       %rdx,%rax
48b6a3:
            83 e0 7f
                                      $0x7f,%eax
                                 and
48b6a6:
            48 d3 e0
                                 shl
                                     %cl,%rax
                                     $0x7,%ecx
48b6a9:
            83 c1 07
                                 add
            48 09 c6
                                     %rax,%rsi
48b6ac:
                                 or
            84 d2
48b6af:
                                 test %dl,%dl
48b6b1:
            78 e5
                                     48b698 <execute cfa program+0x398>
                                 is
            e9 6b ff ff ff
48b6b3:
                                 impq 48b623 <execute_cfa_program+0x323>
```

```
48b6b8:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48b6bf:
            00
48b6c0:
            31 d2
                                      %edx,%edx
                                xor
48b6c2:
            31 c9
                                      %ecx,%ecx
                                xor
            0f 1f 40 00
                                nopl 0x0(\%rax)
48b6c4:
48b6c8:
            48 83 c3 01
                                     $0x1,%rbx
                                add
48b6cc:
            0f b6 73 ff
                                movzbl -0x1(%rbx),%esi
            48 89 f0
                                       %rsi,%rax
48b6d0:
                                mov
            83 e0 7f
                                      $0x7f,%eax
48b6d3:
                                and
48b6d6:
            48 d3 e0
                                shl
                                     %cl,%rax
48b6d9:
            83 c1 07
                                add
                                     $0x7,%ecx
            48 09 c2
                                     %rax.%rdx
48b6dc:
                                or
            40 84 f6
                                test %sil,%sil
48b6df:
48b6e2:
            78 e4
                                     48b6c8 <execute_cfa_program+0x3c8>
                                js
48b6e4:
            31 ff
                               %edi,%edi
                          xor
                                      %ecx,%ecx
48b6e6:
            31 c9
                                xor
48b6e8:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
            00
48b6ef:
48b6f0:
            48 83 c3 01
                                add $0x1,%rbx
48b6f4:
            0f b6 73 ff
                                movzbl -0x1(%rbx),%esi
48b6f8:
            48 89 f0
                                       %rsi,%rax
                                mov
48b6fb:
            83 e0 7f
                                and
                                      $0x7f,%eax
48b6fe:
            48 d3 e0
                                shl
                                     %cl.%rax
48b701:
            83 c1 07
                                add
                                     $0x7,%ecx
48b704:
            48 09 c7
                                     %rax,%rdi
                                or
48b707:
            40 84 f6
                                test %sil,%sil
            78 e4
                                     48b6f0 <execute cfa program+0x3f0>
48b70a:
                                is
            48 83 fa 11
48b70c:
                                      $0x11,%rdx
                                cmp
            0f 87 52 fd ff ff
48b710:
                                ja
                                     48b468 <execute_cfa_program+0x168>
48b716:
            48 c1 e2 04
                                shl
                                     $0x4,%rdx
48b71a:
            49 8d 04 14
                                lea
                                     (%r12,%rdx,1),%rax
            48 89 38
                                mov
48b71e:
                                       %rdi,(%rax)
48b721:
            c7 40 08 02 00 00 00 movl $0x2,0x8(%rax)
48b728:
            48 89 df
                                       %rbx,%rdi
                                mov
48b72b:
            e9 8a fc ff ff
                                impq 48b3ba <execute_cfa_program+0xba>
48b730:
            4d 85 c0
                                test %r8,%r8
48b733:
            0f 84 17 05 00 00
                                     48bc50 <execute_cfa_program+0x950>
                                je
48b739:
            4c 89 c0
                                       %r8,%rax
                                mov
48b73c:
            4d 8b 80 20 01 00 00 mov
                                       0x120(%r8),%r8
48b743:
            b9 29 00 00 00
                                       $0x29,%ecx
                                mov
            48 89 c7
                                       %rax,%rdi
48b748:
                                mov
48b74b:
            4c 89 e6
                                       %r12,%rsi
                                mov
48b74e:
            f3 48 a5
                                rep movsq %ds:(%rsi),%es:(%rdi)
48b751:
            49 89 84 24 20 01 00 mov
                                       %rax,0x120(%r12)
48b758:
            00
48b759:
            48 89 df
                                       %rbx,%rdi
                                mov
                                jmpq 48b3ba <execute_cfa_program+0xba>
48b75c:
            e9 59 fc ff ff
            0f 1f 80 00 00 00 00 nopl
48b761:
                                      0x0(\%rax)
                                       0x120(%r12),%rax
48b768:
            49 8b 84 24 20 01 00 mov
48b76f:
            00
            b9 29 00 00 00
                                       $0x29,%ecx
48b770:
                                mov
48b775:
            4c 89 e7
                                       %r12,%rdi
                                mov
```

```
48b778:
            48 89 c6
                                       %rax,%rsi
                                mov
48b77b:
            f3 48 a5
                                rep movsq %ds:(%rsi),%es:(%rdi)
48b77e:
            4c 89 80 20 01 00 00 mov
                                       %r8,0x120(%rax)
48b785:
            48 89 df
                                       %rbx.%rdi
                                mov
48b788:
            49 89 c0
                                      %rax,%r8
                                mov
48b78b:
            e9 2a fc ff ff
                                jmpq 48b3ba <execute_cfa_program+0xba>
48b790:
            31 f6
                                xor
                                      %esi,%esi
48b792:
            31 c9
                                      %ecx,%ecx
                                xor
48b794:
            0f 1f 40 00
                                nopl 0x0(\%rax)
48b798:
            48 83 c3 01
                                add
                                      $0x1,%rbx
            0f b6 53 ff
48b79c:
                                movzbl -0x1(%rbx),%edx
48b7a0:
            48 89 d0
                                      %rdx.%rax
                                mov
                                      $0x7f,%eax
48b7a3:
            83 e0 7f
                                and
48b7a6:
            48 d3 e0
                                shl
                                     %cl,%rax
                                add $0x7,%ecx
48b7a9:
            83 c1 07
            48 09 c6
                                     %rax,%rsi
48b7ac:
                                or
48b7af:
            84 d2
                                test %dl,%dl
48b7b1:
            78 e5
                                     48b798 <execute_cfa_program+0x498>
                                js
48b7b3:
            49 89 b4 24 30 01 00 mov
                                      %rsi,0x130(%r12)
48b7ba:
            00
48b7bb:
            31 c9
                                      %ecx,%ecx
                                xor
            31 f6
48b7bd:
                                xor
                                      %esi,%esi
48b7bf:
            90
                          nop
                                      $0x1,%rbx
48b7c0:
            48 83 c3 01
                                add
48b7c4:
            0f b6 53 ff
                                movzbl -0x1(%rbx),%edx
48b7c8:
            48 89 d0
                                mov
                                      %rdx,%rax
48b7cb:
                                      $0x7f,%eax
            83 e0 7f
                                and
                                     %cl,%rax
48b7ce:
            48 d3 e0
                                shl
                                      $0x7,%ecx
48b7d1:
            83 c1 07
                                add
48b7d4:
            48 09 c6
                                     %rax,%rsi
                                or
                                test %dl,%dl
48b7d7:
            84 d2
                                     48b7c0 <execute_cfa_program+0x4c0>
48b7d9:
            78 e5
                                js
48b7db:
            49 89 b4 24 28 01 00 mov
                                      %rsi,0x128(%r12)
48b7e2:
            00
            41 c7 84 24 40 01 00 movl $0x1,0x140(%r12)
48b7e3:
            00 01 00 00 00
48b7ea:
48b7ef:
            48 89 df
                                       %rbx,%rdi
                                mov
48b7f2:
            e9 c3 fb ff ff
                                jmpq 48b3ba <execute cfa program+0xba>
48b7f7:
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
            00 00
48b7fe:
48b800:
            31 f6
                                      %esi,%esi
                                xor
48b802:
            31 c9
                                xor
                                      %ecx,%ecx
48b804:
            0f 1f 40 00
                                nopl 0x0(\%rax)
                                      $0x1,%rbx
48b808:
            48 83 c3 01
                                add
48b80c:
            0f b6 53 ff
                                movzbl -0x1(%rbx),%edx
48b810:
            48 89 d0
                                      %rdx,%rax
                                mov
48b813:
            83 e0 7f
                                and
                                      $0x7f,%eax
            48 d3 e0
                                     %cl,%rax
48b816:
                                shl
            83 c1 07
                                     $0x7,%ecx
48b819:
                                add
            48 09 c6
                                     %rax,%rsi
48b81c:
                                or
48b81f:
            84 d2
                                test %dl.%dl
48b821:
            78 e5
                                     48b808 <execute_cfa_program+0x508>
                                js
```

```
48b823:
            49 89 b4 24 30 01 00 mov
                                       %rsi,0x130(%r12)
48b82a:
            00
48b82b:
            41 c7 84 24 40 01 00 movl
                                       $0x1,0x140(%r12)
48b832:
            00 01 00 00 00
48b837:
            48 89 df
                                       %rbx,%rdi
                                mov
48b83a:
            e9 7b fb ff ff
                                jmpq 48b3ba <execute_cfa_program+0xba>
48b83f:
            90
                          nop
48b840:
            31 f6
                                      %esi,%esi
                                xor
                                      %ecx,%ecx
48b842:
            31 c9
                                xor
48b844:
            0f 1f 40 00
                                nopl 0x0(\%rax)
                                      $0x1,%rbx
48b848:
            48 83 c3 01
                                add
48b84c:
                                movzbl -0x1(%rbx),%edx
            0f b6 53 ff
48b850:
            48 89 d0
                                       %rdx.%rax
                                mov
48b853:
            83 e0 7f
                                and
                                      $0x7f,%eax
48b856:
            48 d3 e0
                                     %cl,%rax
                                shl
                                      $0x7,%ecx
48b859:
            83 c1 07
                                add
48b85c:
            48 09 c6
                                or
                                     %rax,%rsi
48b85f:
            84 d2
                                test %dl,%dl
48b861:
            78 e5
                                     48b848 <execute cfa program+0x548>
                                is
48b863:
            49 89 b4 24 28 01 00 mov
                                       %rsi,0x128(%r12)
48b86a:
            00
            48 89 df
48b86b:
                                mov
                                       %rbx,%rdi
48b86e:
            e9 47 fb ff ff
                                jmpq 48b3ba <execute cfa program+0xba>
            0f 1f 44 00 00
                                      0x0(\%rax,\%rax,1)
48b873:
                                nopl
                                       %rbx,0x138(%r12)
            49 89 9c 24 38 01 00 mov
48b878:
48b87f:
            00
48b880:
            41 c7 84 24 40 01 00 movl $0x2,0x140(%r12)
            00 02 00 00 00
48b887:
            31 ff
                               %edi,%edi
48b88c:
                          xor
48b88e:
            31 c9
                                      %ecx,%ecx
                                xor
                                      $0x1,%rbx
48b890:
            48 83 c3 01
                                add
48b894:
            0f b6 53 ff
                                movzbl -0x1(%rbx),%edx
48b898:
            48 89 d0
                                mov
                                       %rdx,%rax
48b89b:
            83 e0 7f
                                      $0x7f,%eax
                                and
                                     %cl,%rax
48b89e:
            48 d3 e0
                                shl
48b8a1:
            83 c1 07
                                add
                                     $0x7,%ecx
48b8a4:
            48 09 c7
                                     %rax,%rdi
                                or
                                test %dl.%dl
48b8a7:
            84 d2
48b8a9:
            78 e5
                                     48b890 <execute_cfa_program+0x590>
                                js
                                      %rbx,%rdi
48b8ab:
            48 01 df
                                add
48b8ae:
            e9 07 fb ff ff
                                jmpq 48b3ba <execute_cfa_program+0xba>
48b8b3:
            0f 1f 44 00 00
                                nopl 0x0(\%rax,\%rax,1)
                                      %edx,%edx
48b8b8:
            31 d2
                                xor
                                      %ecx,%ecx
48b8ba:
            31 c9
                                xor
48b8bc:
            0f 1f 40 00
                                nopl 0x0(\%rax)
48b8c0:
            48 83 c3 01
                                add
                                      $0x1,%rbx
48b8c4:
            0f b6 73 ff
                                movzbl -0x1(%rbx),%esi
            48 89 f0
                                       %rsi,%rax
48b8c8:
                                mov
            83 e0 7f
                                      $0x7f,%eax
48b8cb:
                                and
            48 d3 e0
                                     %cl,%rax
48b8ce:
                                shl
48b8d1:
            83 c1 07
                                add
                                      $0x7,%ecx
48b8d4:
            48 09 c2
                                     %rax,%rdx
                                or
```

```
48b8d7:
            40 84 f6
                                 test %sil,%sil
                                     48b8c0 <execute_cfa_program+0x5c0>
48b8da:
            78 e4
                                 is
48b8dc:
            48 83 fa 11
                                 cmp
                                       $0x11,%rdx
48b8e0:
            77 12
                                     48b8f4 < execute cfa program + 0x5f4>
                                 ia
48b8e2:
            48 c1 e2 04
                                shl
                                     $0x4,%rdx
48b8e6:
            49 8d 04 14
                                     (%r12,%rdx,1),%rax
                                 lea
48b8ea:
            c7 40 08 03 00 00 00 movl $0x3,0x8(%rax)
48b8f1:
            48 89 18
                                       %rbx,(%rax)
                                 mov
            31 ff
48b8f4:
                               %edi,%edi
                          xor
                                      %ecx,%ecx
48b8f6:
            31 c9
                                 xor
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48b8f8:
48b8ff:
            00
            48 83 c3 01
                                 add
                                      $0x1,%rbx
48b900:
48b904:
            0f b6 53 ff
                                 movzbl -0x1(%rbx),%edx
            48 89 d0
                                       %rdx,%rax
48b908:
                                 mov
                                      $0x7f,%eax
48b90b:
            83 e0 7f
                                 and
48b90e:
            48 d3 e0
                                 shl
                                      %cl,%rax
48b911:
            83 c1 07
                                     $0x7,%ecx
                                 add
                                     %rax,%rdi
48b914:
            48 09 c7
                                 or
48b917:
            84 d2
                                 test %dl,%dl
48b919:
            78 e5
                                     48b900 <execute cfa program+0x600>
                                 js
48b91b:
            48 01 df
                                 add
                                      %rbx,%rdi
48b91e:
            e9 97 fa ff ff
                                 jmpq 48b3ba <execute cfa program+0xba>
                                 nopl 0x0(\%rax,\%rax,1)
            0f 1f 44 00 00
48b923:
48b928:
            31 d2
                                      %edx,%edx
                                 xor
48b92a:
            31 c9
                                      %ecx,%ecx
                                 xor
48b92c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
            48 83 c3 01
                                      $0x1,%rbx
48b930:
                                 add
48b934:
                                 movzbl -0x1(%rbx),%esi
            0f b6 73 ff
48b938:
            48 89 f0
                                       %rsi,%rax
                                 mov
48b93b:
            83 e0 7f
                                      $0x7f,%eax
                                 and
48b93e:
            48 d3 e0
                                     %cl,%rax
                                 shl
48b941:
            83 c1 07
                                 add
                                     $0x7,%ecx
48b944:
            48 09 c2
                                     %rax,%rdx
                                 or
            40 84 f6
48b947:
                                 test %sil,%sil
48b94a:
            78 e4
                                is
                                     48b930 <execute cfa program+0x630>
            31 ff
                               %edi,%edi
48b94c:
                          xor
                                      %ecx.%ecx
48b94e:
            31 c9
                                 xor
48b950:
            48 83 c3 01
                                 add
                                      $0x1,%rbx
                                 movzbl -0x1(%rbx),%esi
48b954:
            0f b6 73 ff
48b958:
            48 89 f0
                                       %rsi,%rax
                                 mov
48b95b:
            83 e0 7f
                                 and
                                      $0x7f,%eax
                                      %cl,%rax
48b95e:
            48 d3 e0
                                 shl
                                     $0x7,%ecx
48b961:
            83 c1 07
                                 add
48b964:
            48 09 c7
                                 or
                                     %rax,%rdi
48b967:
            40 84 f6
                                 test %sil,%sil
48b96a:
            78 e4
                                     48b950 <execute_cfa_program+0x650>
                                 js
            83 f9 3f
                                       $0x3f,%ecx
48b96c:
                                 cmp
            0f 87 57 fc ff ff
                                     48b5cc <execute_cfa_program+0x2cc>
48b96f:
                                 ja
            83 e6 40
48b975:
                                      $0x40,%esi
                                 and
48b978:
            Of 84 4e fc ff ff
                                     48b5cc <execute_cfa_program+0x2cc>
                                 je
            4c 89 d0
48b97e:
                                       %r10,%rax
                                 mov
```

```
48b981:
            48 d3 e0
                                 shl
                                      %cl.%rax
48b984:
            48 f7 d8
                                      %rax
                                 neg
48b987:
            48 09 c7
                                      %rax,%rdi
                                 or
48b98a:
            e9 3d fc ff ff
                                 impg 48b5cc <execute cfa program+0x2cc>
48b98f:
            90
                          nop
48b990:
            31 f6
                                      %esi,%esi
                                 xor
48b992:
            31 c9
                                 xor
                                      %ecx,%ecx
48b994:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48b998:
            48 83 c3 01
                                      $0x1,%rbx
                                 add
48b99c:
            0f b6 53 ff
                                 movzbl -0x1(%rbx),%edx
                                       %rdx,%rax
48b9a0:
            48 89 d0
                                 mov
            83 e0 7f
                                      $0x7f,%eax
48b9a3:
                                 and
            48 d3 e0
                                     %cl,%rax
48b9a6:
                                 shl
48b9a9:
            83 c1 07
                                 add
                                      $0x7,%ecx
            48 09 c6
                                      %rax,%rsi
48b9ac:
                                 or
            84 d2
48b9af:
                                 test %dl.%dl
48b9b1:
            78 e5
                                     48b998 <execute_cfa_program+0x698>
                                 js
48b9b3:
            49 89 b4 24 30 01 00 mov
                                       %rsi,0x130(%r12)
48b9ba:
            00
48b9bb:
            31 c9
                                 xor
                                      %ecx,%ecx
48b9bd:
            31 f6
                                      %esi,%esi
                                 xor
48b9bf:
            90
                          nop
48b9c0:
            48 83 c3 01
                                 add
                                      $0x1.%rbx
                                 movzbl -0x1(%rbx),%edx
48b9c4:
            0f b6 53 ff
                                       %rdx,%rax
48b9c8:
            48 89 d0
                                 mov
48b9cb:
            83 e0 7f
                                 and
                                      $0x7f,%eax
            48 d3 e0
                                      %cl,%rax
48b9ce:
                                 shl
                                      $0x7,%ecx
48b9d1:
            83 c1 07
                                 add
            48 09 c6
                                     %rax,%rsi
48b9d4:
                                 or
48b9d7:
            84 d2
                                 test %dl,%dl
48b9d9:
            78 e5
                                     48b9c0 <execute cfa program+0x6c0>
                                 is
            83 f9 3f
48b9db:
                                      $0x3f,%ecx
                                 cmp
48b9de:
            77 11
                                 ja
                                     48b9f1 <execute_cfa_program+0x6f1>
48b9e0:
            83 e2 40
                                      $0x40,%edx
                                 and
                                     48b9f1 <execute_cfa_program+0x6f1>
48b9e3:
            74.0c
                                 je
48b9e5:
            4c 89 d0
                                 mov
                                       %r10,%rax
            48 d3 e0
                                     %cl,%rax
48b9e8:
                                 shl
48b9eb:
            48 f7 d8
                                      %rax
                                 neg
48b9ee:
            48 09 c6
                                      %rax,%rsi
                                 or
48b9f1:
            49 0f af b4 24 58 01 imul 0x158(%r12),%rsi
48b9f8:
            00 00
48b9fa:
            41 c7 84 24 40 01 00 movl $0x1,0x140(%r12)
            00 01 00 00 00
48ba01:
            48 89 df
48ba06:
                                       %rbx,%rdi
                                 mov
48ba09:
            49 89 b4 24 28 01 00 mov
                                       %rsi,0x128(%r12)
48ba10:
48ba11:
            e9 a4 f9 ff ff
                                 impq 48b3ba <execute_cfa_program+0xba>
            66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
48ba16:
48ba1d:
            00 00 00
            31 f6
                                      %esi,%esi
48ba20:
                                 xor
48ba22:
            31 c9
                                      %ecx,%ecx
                                 xor
48ba24:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
```

```
48ba28:
            48 83 c3 01
                                 add $0x1.%rbx
48ba2c:
            0f b6 53 ff
                                 movzbl -0x1(%rbx),%edx
48ba30:
            48 89 d0
                                 mov
                                       %rdx,%rax
48ba33:
            83 e0 7f
                                 and
                                      $0x7f.%eax
48ba36:
            48 d3 e0
                                     %cl,%rax
                                 shl
48ba39:
            83 c1 07
                                 add $0x7,%ecx
48ba3c:
            48 09 c6
                                     %rax,%rsi
                                 or
            84 d2
                                 test %dl.%dl
48ba3f:
48ba41:
            78 e5
                                     48ba28 <execute_cfa_program+0x728>
                                 js
48ba43:
            83 f9 3f
                                       $0x3f,%ecx
                                 cmp
                                ja
                                     48ba59 <execute_cfa_program+0x759>
48ba46:
            77 11
            83 e2 40
                                      $0x40.%edx
48ba48:
                                 and
48ba4b:
            74 0c
                                     48ba59 <execute cfa program+0x759>
                                 ie
48ba4d:
            4c 89 d0
                                 mov
                                       %r10,%rax
                                     %cl,%rax
48ba50:
            48 d3 e0
                                 shl
                                      %rax
48ba53:
            48 f7 d8
                                 neg
48ba56:
            48 09 c6
                                 or
                                     %rax,%rsi
48ba59:
            49 0f af b4 24 58 01 imul 0x158(%r12),%rsi
48ba60:
            00 00
48ba62:
            48 89 df
                                 mov
                                       %rbx,%rdi
48ba65:
            49 89 b4 24 28 01 00 mov
                                       %rsi,0x128(%r12)
48ba6c:
            00
48ba6d:
            e9 48 f9 ff ff
                                 jmpq 48b3ba <execute cfa program+0xba>
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48ba72:
                                      %edx,%edx
48ba78:
            31 d2
                                 xor
48ba7a:
            31 c9
                                      %ecx,%ecx
                                 xor
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48ba7c:
            48 83 c3 01
                                      $0x1,%rbx
48ba80:
                                 add
            0f b6 73 ff
                                 movzbl -0x1(%rbx),%esi
48ba84:
48ba88:
            48 89 f0
                                       %rsi,%rax
                                 mov
                                      $0x7f,%eax
48ba8b:
            83 e0 7f
                                 and
            48 d3 e0
                                     %cl,%rax
48ba8e:
                                 shl
48ba91:
            83 c1 07
                                 add
                                     $0x7,%ecx
48ba94:
            48 09 c2
                                     %rax,%rdx
                                 or
            40 84 f6
48ba97:
                                 test %sil,%sil
48ba9a:
            78 e4
                                is
                                     48ba80 <execute_cfa_program+0x780>
48ba9c:
            31 ff
                               %edi,%edi
                          xor
                                      %ecx.%ecx
48ba9e:
            31 c9
                                 xor
48baa0:
            48 83 c3 01
                                 add
                                      $0x1,%rbx
                                 movzbl -0x1(%rbx),%esi
48baa4:
            0f b6 73 ff
48baa8:
            48 89 f0
                                       %rsi,%rax
                                 mov
48baab:
            83 e0 7f
                                 and
                                      $0x7f,%eax
                                      %cl,%rax
48baae:
            48 d3 e0
                                 shl
                                     $0x7,%ecx
48bab1:
            83 c1 07
                                 add
48bab4:
            48 09 c7
                                 or
                                     %rax,%rdi
48bab7:
            40 84 f6
                                 test %sil,%sil
48baba:
            78 e4
                                     48baa0 <execute_cfa_program+0x7a0>
                                 js
            49 0f af bc 24 58 01
                                imul 0x158(%r12),%rdi
48babc:
            00 00
48bac3:
            48 83 fa 11
48bac5:
                                 cmp
                                       $0x11,%rdx
48bac9:
            0f 87 99 f9 ff ff
                                     48b468 <execute cfa program+0x168>
                                 ja
                                     $0x4,%rdx
48bacf:
            48 c1 e2 04
                                 shl
```

```
48bad3:
            49 8d 04 14
                                     (%r12,%rdx,1),%rax
                                 lea
48bad7:
            48 89 38
                                       %rdi,(%rax)
                                 mov
            c7 40 08 04 00 00 00 movl
48bada:
                                       $0x4,0x8(%rax)
48bae1:
            48 89 df
                                       %rbx.%rdi
                                 mov
                                 jmpq 48b3ba <execute_cfa_program+0xba>
48bae4:
            e9 d1 f8 ff ff
48bae9:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48baf0:
            31 d2
                                 xor
                                      %edx,%edx
            31 c9
                                      %ecx,%ecx
48baf2:
                                 xor
48baf4:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48baf8:
            48 83 c3 01
                                 add
                                      $0x1,%rbx
48bafc:
            0f b6 73 ff
                                 movzbl -0x1(%rbx),%esi
48bb00:
            48 89 f0
                                       %rsi,%rax
                                 mov
                                      $0x7f,%eax
48bb03:
            83 e0 7f
                                 and
48bb06:
            48 d3 e0
                                 shl
                                     %cl,%rax
48bb09:
            83 c1 07
                                     $0x7,%ecx
                                 add
                                     %rax,%rdx
48bb0c:
            48 09 c2
                                 or
48bb0f:
            40 84 f6
                                 test %sil,%sil
            78 e4
                                     48baf8 <execute_cfa_program+0x7f8>
48bb12:
                                 is
48bb14:
            48 83 fa 11
                                      $0x11,%rdx
                                 cmp
48bb18:
            77 12
                                 ja
                                     48bb2c <execute_cfa_program+0x82c>
48bb1a:
            48 c1 e2 04
                                 shl
                                     $0x4,%rdx
48bb1e:
            49 8d 04 14
                                 lea
                                     (%r12,%rdx,1),%rax
48bb22:
            c7 40 08 05 00 00 00 movl $0x5,0x8(%rax)
            48 89 18
48bb29:
                                 mov
                                       %rbx,(%rax)
48bb2c:
            31 ff
                               %edi,%edi
                          xor
48bb2e:
            31 c9
                                      %ecx,%ecx
                                 xor
            48 83 c3 01
                                      $0x1,%rbx
48bb30:
                                 add
            0f b6 53 ff
                                 movzbl -0x1(%rbx),%edx
48bb34:
                                       %rdx,%rax
48bb38:
            48 89 d0
                                 mov
48bb3b:
            83 e0 7f
                                      $0x7f,%eax
                                 and
48bb3e:
            48 d3 e0
                                     %cl,%rax
                                 shl
                                 add
                                     $0x7,%ecx
48bb41:
            83 c1 07
48bb44:
            48 09 c7
                                     %rax,%rdi
                                 or
48bb47:
            84 d2
                                 test %dl,%dl
                                     48bb30 <execute_cfa_program+0x830>
48bb49:
            78 e5
                                 js
48bb4b:
            48 01 df
                                 add
                                      %rbx,%rdi
48bb4e:
            e9 67 f8 ff ff
                                 impq 48b3ba <execute_cfa_program+0xba>
48bb53:
            0f 1f 44 00 00
                                 nopl 0x0(\%rax.\%rax.1)
                                      %edx,%edx
48bb58:
            31 d2
                                 xor
48bb5a:
            31 c9
                                      %ecx,%ecx
                                 xor
48bb5c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48bb60:
            48 83 c3 01
                                 add
                                      $0x1,%rbx
48bb64:
            0f b6 73 ff
                                 movzbl -0x1(%rbx),%esi
48bb68:
            48 89 f0
                                 mov
                                       %rsi,%rax
48bb6b:
            83 e0 7f
                                 and
                                      $0x7f,%eax
48bb6e:
            48 d3 e0
                                     %cl,%rax
                                 shl
48bb71:
            83 c1 07
                                 add
                                      $0x7,%ecx
                                     %rax,%rdx
48bb74:
            48 09 c2
                                 or
48bb77:
            40 84 f6
                                 test %sil,%sil
            78 e4
48bb7a:
                                 js
                                     48bb60 <execute_cfa_program+0x860>
48bb7c:
            31 ff
                               %edi,%edi
                          xor
48bb7e:
                                      %ecx,%ecx
            31 c9
                                 xor
```

```
48bb80:
            48 83 c3 01
                                 add $0x1.%rbx
48bb84:
            0f b6 73 ff
                                 movzbl -0x1(%rbx),%esi
48bb88:
            48 89 f0
                                 mov
                                       %rsi,%rax
48bb8b:
            83 e0 7f
                                 and
                                      $0x7f.%eax
48bb8e:
            48 d3 e0
                                     %cl,%rax
                                 shl
48bb91:
            83 c1 07
                                 add $0x7,%ecx
48bb94:
            48 09 c7
                                      %rax,%rdi
                                 or
48bb97:
            40 84 f6
                                 test %sil,%sil
48bb9a:
            78 e4
                                     48bb80 <execute_cfa_program+0x880>
                                 js
                                 imul 0x158(%r12),%rdi
48bb9c:
            49 0f af bc 24 58 01
            00 00
48bba3:
            48 83 fa 11
                                       $0x11.%rdx
48bba5:
                                 cmp
48bba9:
            0f 87 b9 f8 ff ff
                                     48b468 <execute cfa program+0x168>
                                 ja
48bbaf:
            48 c1 e2 04
                                 shl
                                      $0x4,%rdx
            48 f7 df
                                      %rdi
48bbb3:
                                 neg
                                      (%r12,%rdx,1),%rax
48bbb6:
            49 8d 04 14
                                 lea
48bbba:
            48 89 38
                                 mov
                                       %rdi,(%rax)
48bbbd:
            c7 40 08 01 00 00 00 movl $0x1,0x8(%rax)
48bbc4:
            48 89 df
                                 mov
                                       %rbx,%rdi
48bbc7:
            e9 ee f7 ff ff
                                 jmpq 48b3ba <execute_cfa_program+0xba>
48bbcc:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
                                      %edx,%edx
48bbd0:
            31 d2
                                 xor
48bbd2:
            31 c9
                                      %ecx,%ecx
                                 xor
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48bbd4:
48bbd8:
            48 83 c3 01
                                      $0x1,%rbx
                                 add
48bbdc:
            0f b6 73 ff
                                 movzbl -0x1(%rbx),%esi
            48 89 f0
                                       %rsi,%rax
48bbe0:
                                 mov
                                      $0x7f,%eax
48bbe3:
            83 e0 7f
                                 and
            48 d3 e0
                                      %cl,%rax
48bbe6:
                                 shl
48bbe9:
            83 c1 07
                                 add
                                      $0x7,%ecx
            48 09 c2
                                      %rax,%rdx
48bbec:
                                 or
            40 84 f6
                                 test %sil,%sil
48bbef:
48bbf2:
            78 e4
                                 js
                                     48bbd8 <execute_cfa_program+0x8d8>
48bbf4:
            31 ff
                               %edi,%edi
                          xor
                                      %ecx,%ecx
48bbf6:
            31 c9
                                 xor
48bbf8:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48bbff:
            00
                                      $0x1.%rbx
48bc00:
            48 83 c3 01
                                 add
48bc04:
            0f b6 73 ff
                                 movzbl -0x1(%rbx),%esi
                                       %rsi,%rax
48bc08:
            48 89 f0
                                 mov
48bc0b:
            83 e0 7f
                                      $0x7f,%eax
                                 and
48bc0e:
            48 d3 e0
                                 shl
                                      %cl,%rax
                                      $0x7,%ecx
48bc11:
            83 c1 07
                                 add
                                      %rax,%rdi
48bc14:
            48 09 c7
                                 or
48bc17:
            40 84 f6
                                 test %sil,%sil
48bc1a:
            78 e4
                                     48bc00 <execute_cfa_program+0x900>
                                 is
            83 f9 3f
                                 cmp
48bc1c:
                                       $0x3f,%ecx
            0f 87 97 fe ff ff
                                     48babc <execute_cfa_program+0x7bc>
48bc1f:
                                 ja
48bc25:
                                      $0x40,%esi
            83 e6 40
                                 and
            0f 84 8e fe ff ff
                                     48babc <execute cfa program+0x7bc>
48bc28:
                                 je
48bc2e:
            4c 89 d0
                                       %r10,%rax
                                 mov
            48 d3 e0
                                      %cl,%rax
48bc31:
                                 shl
```

```
48bc34:
             48 f7 d8
                                      %rax
                                 neg
 48bc37:
             48 09 c7
                                     %rax,%rdi
                                 or
 48bc3a:
             e9 7d fe ff ff
                                 impq 48babc <execute cfa program+0x7bc>
 48bc3f:
             f3 c3
                                 repz reta
                                 callq 40e090 <abort>
 48bc41:
             e8 4a 24 f8 ff
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48bc46:
 48bc4d:
             00 00 00
             4c 29 cc
                                      %r9,%rsp
 48bc50:
                                 sub
 48bc53:
             48 8d 44 24 0f
                                 lea 0xf(%rsp),%rax
                                 and $0xffffffffffff,%rax
 48bc58:
             48 83 e0 f0
             e9 e2 fa ff ff
                                jmpq 48b743 <execute_cfa_program+0x443>
 48bc5c:
             0f 1f 44 00 00
                                nopl 0x0(\%rax,\%rax,1)
 48bc61:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48bc66:
 48bc6d:
             00 00 00
00000000048bc70 <init dwarf reg size table>:
 48bc70:
             c6 05 a9 15 23 00 08 movb $0x8,0x2315a9(%rip)
                                                                #6bd220
<dwarf reg size table>
 48bc77:
             c6 05 a3 15 23 00 08 movb $0x8,0x2315a3(%rip)
                                                                #6bd221
<dwarf_reg_size_table+0x1>
 48bc7e:
             c6 05 9d 15 23 00 08 movb $0x8,0x23159d(%rip)
                                                                #6bd222
<dwarf_reg_size_table+0x2>
 48bc85:
             c6 05 97 15 23 00 08 movb $0x8.0x231597(%rip)
                                                                #6bd223
<dwarf_reg_size_table+0x3>
 48bc8c:
             c6 05 91 15 23 00 08 movb $0x8,0x231591(%rip)
                                                                #6bd224
<dwarf reg size table+0x4>
 48bc93:
             c6 05 8b 15 23 00 08 movb $0x8,0x23158b(%rip)
                                                                #6bd225
<dwarf reg size table+0x5>
 48bc9a:
             c6 05 85 15 23 00 08 movb $0x8,0x231585(%rip)
                                                                #6bd226
<dwarf_reg_size_table+0x6>
             c6 05 7f 15 23 00 08 movb $0x8,0x23157f(%rip)
 48bca1:
                                                                #6bd227
<dwarf_reg_size_table+0x7>
 48bca8:
             c6 05 79 15 23 00 08 movb $0x8,0x231579(%rip)
                                                                #6bd228
<dwarf_reg_size_table+0x8>
             c6 05 73 15 23 00 08 movb $0x8,0x231573(%rip)
 48bcaf:
                                                                #6bd229
<dwarf reg size table+0x9>
 48bcb6:
             c6 05 6d 15 23 00 08 movb $0x8,0x23156d(%rip)
                                                                # 6bd22a
<dwarf reg size table+0xa>
 48bcbd:
             c6 05 67 15 23 00 08 movb $0x8,0x231567(%rip)
                                                                # 6bd22b
<dwarf_reg_size_table+0xb>
 48bcc4:
             c6 05 61 15 23 00 08 movb $0x8,0x231561(%rip)
                                                                # 6bd22c
<dwarf_reg_size_table+0xc>
 48bccb:
             c6 05 5b 15 23 00 08 movb $0x8,0x23155b(%rip)
                                                                #6bd22d
<dwarf_reg_size_table+0xd>
 48bcd2:
             c6 05 55 15 23 00 08 movb $0x8,0x231555(%rip)
                                                                # 6bd22e
<dwarf reg size table+0xe>
 48bcd9:
             c6 05 4f 15 23 00 08 movb $0x8,0x23154f(%rip)
                                                                # 6bd22f
<dwarf reg size table+0xf>
             c6 05 49 15 23 00 08 movb $0x8,0x231549(%rip)
 48bce0:
                                                                #6bd230
<dwarf_reg_size_table+0x10>
 48bce7:
             с3
 48bce8:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
```

48bcef: 00

```
00000000048bcf0 <uw frame state for>:
 48bcf0:
             41 57
                                 push %r15
 48bcf2:
             41 56
                                 push %r14
 48bcf4:
             31 c0
                                       %eax,%eax
                                 xor
 48bcf6:
             41 55
                                 push %r13
 48bcf8:
             41 54
                                 push
                                       %r12
             49 89 fd
                                        %rdi,%r13
 48bcfa:
                                 mov
 48bcfd:
             55
                           push %rbp
                           push
 48bcfe:
             53
                                %rbx
                                        $0x30,%ecx
             b9 30 00 00 00
 48bcff:
                                 mov
 48bd04:
             48 89 f7
                                        %rsi,%rdi
                                 mov
 48bd07:
             48 83 ec 38
                                       $0x38,%rsp
                                 sub
                                 rep stos %rax,%es:(%rdi)
 48bd0b:
             f3 48 ab
             49 c7 85 d0 00 00 00 movg $0x0,0xd0(%r13)
 48bd0e:
 48bd15:
             00 00 00 00
 48bd19:
             49 c7 85 a0 00 00 00 movq $0x0,0xa0(%r13)
 48bd20:
             00 00 00 00
 48bd24:
             49 8b 95 98 00 00 00 mov
                                        0x98(%r13),%rdx
 48bd2b:
             48 85 d2
                                 test %rdx,%rdx
                                      48bf28 <uw_frame_state_for+0x238>
 48bd2e:
             0f 84 f4 01 00 00
                                 je
 48bd34:
             49 8b 85 c0 00 00 00 mov
                                        0xc0(%r13),%rax
 48bd3b:
             49 89 f4
                                        %rsi,%r12
                                 mov
             49 8d b5 a8 00 00 00 lea
 48bd3e:
                                      0xa8(%r13),%rsi
 48bd45:
             48 c1 e8 3f
                                 shr
                                       $0x3f,%rax
 48bd49:
                                      -0x1(%rdx,%rax,1),%rdi
             48 8d 7c 02 ff
                                 lea
 48bd4e:
             e8 8d 3d 00 00
                                 callq 48fae0 < Unwind Find FDE>
                                 test %rax,%rax
 48bd53:
             48 85 c0
 48bd56:
             49 89 c6
                                 mov
                                        %rax,%r14
                                      48c0e0 <uw frame state for+0x3f0>
 48bd59:
             0f 84 81 03 00 00
                                 ie
             49 8b 85 b8 00 00 00 mov
                                        0xb8(%r13),%rax
 48bd5f:
 48bd66:
             4d 8d 7e 04
                                 lea
                                      0x4(%r14),%r15
 48bd6a:
             49 89 84 24 48 01 00 mov
                                        %rax,0x148(%r12)
 48bd71:
             00
 48bd72:
             49 63 46 04
                                 movslg 0x4(%r14),%rax
 48bd76:
             49 29 c7
                                 sub
                                       %rax,%r15
 48bd79:
             49 8d 6f 09
                                 lea
                                      0x9(%r15),%rbp
 48bd7d:
             48 89 ef
                                 mov
                                        %rbp,%rdi
 48bd80:
             e8 3b 47 f7 ff
                                 callq 4004c0 <.plt+0xa8>
 48bd85:
             41 80 7f 09 65
                                 cmpb $0x65,0x9(%r15)
 48bd8a:
             48 8d 44 05 01
                                 lea
                                      0x1(%rbp,%rax,1),%rax
 48bd8f:
             0f 84 cb 02 00 00
                                      48c060 <uw frame state for+0x370>
                                 je
                                 movzbl 0x8(%r15),%esi
 48bd95:
             41 0f b6 77 08
 48bd9a:
             0f b6 38
                                 movzbl (%rax),%edi
 48bd9d:
             40 80 fe 03
                                        $0x3,%sil
                                 cmp
 48bda1:
             0f 87 19 03 00 00
                                      48c0c0 <uw_frame_state_for+0x3d0>
                                 ja
             45 31 c9
 48bda7:
                                       %r9d,%r9d
                                 xor
             31 c9
                                       %ecx,%ecx
 48bdaa:
                                 xor
                                       48bdb3 <uw frame state for+0xc3>
 48bdac:
             eb 05
                                 imp
             66 90
                                 xchg %ax,%ax
 48bdae:
 48bdb0:
                                 movzbl (%rax),%edi
             0f b6 38
```

```
48bdb3:
            48 89 fa
                                       %rdi,%rdx
                                 mov
48bdb6:
            48 83 c0 01
                                      $0x1,%rax
                                 add
48bdba:
            83 e2 7f
                                 and
                                      $0x7f,%edx
48bdbd:
            48 d3 e2
                                      %cl,%rdx
                                 shl
48bdc0:
            83 c1 07
                                      $0x7,%ecx
                                 add
48bdc3:
            49 09 d1
                                      %rdx,%r9
                                 or
48bdc6:
            40 84 ff
                                 test %dil,%dil
48bdc9:
                                     48bdb0 <uw frame state for+0xc0>
            78 e5
                                 is
48bdcb:
            4d 89 8c 24 60 01 00 mov
                                       %r9,0x160(%r12)
48bdd2:
            00
                                      %ecx,%ecx
48bdd3:
            31 c9
                                 xor
            45 31 c9
                                      %r9d,%r9d
48bdd5:
                                 xor
                                       48bde3 <uw frame state for+0xf3>
48bdd8:
            eb 09
                                 jmp
48bdda:
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48bde0:
            48 89 d8
                                       %rbx,%rax
                                 mov
48bde3:
            48 8d 58 01
                                     0x1(%rax),%rbx
                                 lea
48bde7:
            0f b6 7b ff
                                 movzbl -0x1(%rbx),%edi
48bdeb:
            48 89 fa
                                       %rdi,%rdx
                                 mov
48bdee:
            83 e2 7f
                                      $0x7f,%edx
                                 and
            48 d3 e2
48bdf1:
                                 shl
                                      %cl,%rdx
48bdf4:
            83 c1 07
                                      $0x7,%ecx
                                 add
48bdf7:
            49 09 d1
                                 or
                                      %rdx,%r9
48bdfa:
            40 84 ff
                                 test %dil.%dil
                                     48bde0 <uw frame state for+0xf0>
48bdfd:
            78 e1
                                 js
48bdff:
            83 f9 3f
                                       $0x3f,%ecx
                                 cmp
48be02:
            77 12
                                     48be16 <uw frame state for+0x126>
                                 ja
48be04:
                                      $0x40,%edi
            83 e7 40
                                 and
            74 0d
                                     48be16 <uw frame state for+0x126>
48be07:
                                 je
            48 c7 c2 ff ff ff ff
                                       $0xffffffffffffff,%rdx
48be09:
                                 mov
48be10:
            48 d3 e2
                                      %cl,%rdx
                                 shl
            49 09 d1
48be13:
                                      %rdx,%r9
                                 or
            31 ff
                                %edi,%edi
48be16:
                          xor
48be18:
            31 c9
                                 xor
                                      %ecx,%ecx
48be1a:
            40 80 fe 01
                                       $0x1,%sil
                                 cmp
                                       %r9,0x158(%r12)
48be1e:
            4d 89 8c 24 58 01 00 mov
48be25:
            00
48be26:
            0f 84 5c 02 00 00
                                     48c088 <uw_frame_state_for+0x398>
48be2c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
                                      $0x1,%rbx
48be30:
            48 83 c3 01
                                 add
48be34:
            0f b6 53 ff
                                 movzbl -0x1(%rbx),%edx
48be38:
            48 89 d0
                                       %rdx,%rax
                                 mov
48be3b:
            83 e0 7f
                                 and
                                      $0x7f,%eax
48be3e:
            48 d3 e0
                                 shl
                                      %cl,%rax
                                      $0x7,%ecx
48be41:
            83 c1 07
                                 add
48be44:
            48 09 c7
                                 or
                                      %rax,%rdi
48be47:
            84 d2
                                 test %dl.%dl
                                     48be30 <uw_frame_state_for+0x140>
48be49:
            78 e5
                                 js
                                       %rdi,0x168(%r12)
48be4b:
            49 89 bc 24 68 01 00 mov
48be52:
            00
            41 c6 84 24 71 01 00 movb $0xff,0x171(%r12)
48be53:
48be5a:
            00 ff
            0f b6 45 00
48be5c:
                                 movzbl 0x0(%rbp),%eax
```

```
48be60:
            45 31 c9
                                      %r9d,%r9d
                                xor
48be63:
            3c 7a
                                       $0x7a,%al
                                 cmp
48be65:
            0f 84 9d 04 00 00
                                je
                                     48c308 <uw frame state for+0x618>
48be6b:
            48 8d 74 24 28
                                     0x28(%rsp),%rsi
                                lea
48be70:
            48 83 c5 01
                                add
                                     $0x1,%rbp
48be74:
            48 89 74 24 08
                                      %rsi,0x8(%rsp)
                                mov
48be79:
            eb 26
                                      48bea1 <uw_frame_state_for+0x1b1>
                                jmp
            0f 1f 44 00 00
                                nopl 0x0(\%rax,\%rax,1)
48be7b:
            3c 52
                                       $0x52,%al
48be80:
                                cmp
48be82:
            74.3c
                                     48bec0 <uw_frame_state_for+0x1d0>
                                je
                                       $0x50,%al
48be84:
            3c 50
                                cmp
            74 50
                                     48bed8 <uw frame state for+0x1e8>
48be86:
                                ie
                                       $0x53,%al
            3c 53
48be88:
                                cmp
48be8a:
            0f 85 b0 01 00 00
                                ine
                                     48c040 <uw frame state for+0x350>
            41 c6 84 24 73 01 00 movb $0x1,0x173(%r12)
48be90:
48be97:
            00 01
48be99:
            0f b6 45 00
                                movzbl 0x0(%rbp),%eax
48be9d:
            48 83 c5 01
                                add
                                      $0x1,%rbp
48bea1:
            84 c0
                                     %al,%al
                                test
48bea3:
            0f 84 97 00 00 00
                                     48bf40 <uw_frame_state_for+0x250>
                                ie
48bea9:
            3c 4c
                                       $0x4c,%al
                                cmp
                                     48be80 <uw_frame_state_for+0x190>
48beab:
            75 \, d3
                                ine
48bead:
            0f b6 03
                                movzbl (%rbx),%eax
                                      $0x1,%rbx
48beb0:
            48 83 c3 01
                                add
            41 88 84 24 71 01 00 mov
48beb4:
                                       %al,0x171(%r12)
48bebb:
            00
48bebc:
            eb db
                                      48be99 <uw frame state for+0x1a9>
                                imp
                                xchg %ax,%ax
48bebe:
            66 90
            0f b6 03
                                movzbl (%rbx),%eax
48bec0:
48bec3:
            48 83 c3 01
                                add
                                      $0x1,%rbx
            41 88 84 24 70 01 00 mov
48bec7:
                                       %al,0x170(%r12)
            00
48bece:
48becf:
            eb c8
                                jmp
                                      48be99 <uw frame state for+0x1a9>
48bed1:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48bed8:
            44 0f b6 13
                                movzbl (%rbx),%r10d
48bedc:
            4c 89 ee
                                mov
                                       %r13,%rsi
            4c 89 4c 24 18
                                       %r9,0x18(%rsp)
48bedf:
                                mov
48bee4:
            44 89 d7
                                       %r10d.%edi
                                mov
48bee7:
            44 89 54 24 14
                                       %r10d,0x14(%rsp)
                                mov
                                callq 48b290 <base_of_encoded_value>
48beec:
            e8 9f f3 ff ff
48bef1:
            44 8b 54 24 14
                                       0x14(%rsp),%r10d
                                mov
            48 8b 4c 24 08
48bef6:
                                mov
                                       0x8(\%rsp),\%rcx
48befb:
            48 8d 53 01
                                lea 0x1(\%rbx),\%rdx
48beff:
            48 89 c6
                                mov
                                       %rax,%rsi
48bf02:
            44 89 d7
                                mov
                                       %r10d,%edi
48bf05:
            e8 46 f2 ff ff
                                callg 48b150 < read encoded value with base>
48bf0a:
            48 89 c3
                                       %rax,%rbx
                                mov
48bf0d:
            48 8b 44 24 28
                                mov
                                       0x28(%rsp),%rax
                                       0x18(\%rsp),\%r9
48bf12:
            4c 8b 4c 24 18
                                mov
            49 89 84 24 50 01 00 mov
48bf17:
                                       %rax,0x150(%r12)
48bf1e:
            00
            e9 75 ff ff ff
                                       48be99 <uw_frame_state_for+0x1a9>
48bf1f:
                                jmpq
```

```
48bf24:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
                                       $0x5,%eax
48bf28:
            b8 05 00 00 00
                                 mov
48bf2d:
            48 83 c4 38
                                 add
                                      $0x38,%rsp
48bf31:
            5b
                                %rbx
                          pop
48bf32:
            5d
                                %rbp
                          pop
48bf33:
            41 5c
                                      %r12
                                 pop
48bf35:
            41 5d
                                      %r13
                                 pop
            41 5e
                                      %r14
48bf37:
                                 pop
48bf39:
            41 5f
                                      %r15
                                 pop
48bf3b:
            c3
                          retq
            0f 1f 40 00
48bf3c:
                                 nopl 0x0(\%rax)
48bf40:
            4d 85 c9
                                 test %r9,%r9
                                     48c043 <uw frame state for+0x353>
48bf43:
            0f 84 fa 00 00 00
                                 ie
48bf49:
            41 8b 07
                                       (%r15),%eax
                                 mov
                                       %r12,%rcx
48bf4c:
            4c 89 e1
                                 mov
                                       %r13.%rdx
48bf4f:
            4c 89 ea
                                 mov
48bf52:
            4c 89 cf
                                 mov
                                       %r9,%rdi
48bf55:
            49 8d 74 07 04
                                 lea 0x4(%r15,%rax,1),%rsi
48bf5a:
            e8 a1 f3 ff ff
                                 callq 48b300 <execute cfa program>
48bf5f:
            41 0f b6 84 24 70 01 movzbl 0x170(%r12),%eax
48bf66:
            00 00
            3c ff
48bf68:
                          cmp
                                $0xff,%al
48bf6a:
            0f 84 d8 03 00 00
                                 ie
                                     48c348 <uw frame state for+0x658>
            83 e0 07
                                      $0x7,%eax
48bf70:
                                 and
                                       $0x2,%al
48bf73:
            3c 02
                                 cmp
48bf75:
            0f 84 35 01 00 00
                                     48c0b0 <uw frame state for+0x3c0>
                                 je
                                     48c363 <uw frame state for+0x673>
48bf7b:
            0f 86 e2 03 00 00
                                 ibe
            3c 03
                                       $0x3,%al
48bf81:
                                 cmp
            bb 10 00 00 00
                                       $0x10,%ebx
48bf83:
                                 mov
48bf88:
            0f 85 e3 03 00 00
                                      48c371 <uw_frame_state_for+0x681>
                                 jne
                                      %r14,%rbx
48bf8e:
            4c 01 f3
                                 add
48bf91:
            41 80 bc 24 72 01 00 cmpb $0x0,0x172(%r12)
48bf98:
48bf9a:
            41 0f b6 bc 24 71 01 movzbl 0x171(%r12),%edi
48bfa1:
            00 00
48bfa3:
            0f 84 47 03 00 00
                                 je
                                     48c2f0 <uw frame state for+0x600>
48bfa9:
            31 f6
                                      %esi,%esi
                                 xor
                                      %ecx.%ecx
48bfab:
            31 c9
                                 xor
48bfad:
            0f 1f 00
                                 nopl (%rax)
                                      $0x1,%rbx
48bfb0:
            48 83 c3 01
                                 add
48bfb4:
            0f b6 53 ff
                                 movzbl -0x1(%rbx),%edx
48bfb8:
            48 89 d0
                                 mov
                                       %rdx,%rax
                                      $0x7f,%eax
48bfbb:
            83 e0 7f
                                 and
                                     %cl,%rax
48bfbe:
            48 d3 e0
                                 shl
48bfc1:
            83 c1 07
                                 add $0x7,%ecx
48bfc4:
            48 09 c6
                                      %rax,%rsi
                                 or
48bfc7:
            84 d2
                                 test %dl,%dl
            78 e5
                                     48bfb0 <uw_frame_state_for+0x2c0>
48bfc9:
                                 js
48bfcb:
            48 01 de
                                      %rbx,%rsi
                                 add
            40 80 ff ff
                                       $0xff,%dil
48bfce:
                                 cmp
48bfd2:
            0f 84 80 03 00 00
                                     48c358 <uw frame state for+0x668>
                                 je
            48 89 dd
48bfd8:
                                 mov
                                       %rbx,%rbp
```

```
48bfdb:
            48 89 f3
                                       %rsi,%rbx
                                 mov
48bfde:
            44 0f b6 ff
                                 movzbl %dil,%r15d
48bfe2:
            4c 89 ee
                                 mov
                                       %r13,%rsi
48bfe5:
            44 89 ff
                                       %r15d.%edi
                                 mov
48bfe8:
            e8 a3 f2 ff ff
                                 callq 48b290 <base of encoded value>
48bfed:
            48 8d 4c 24 28
                                     0x28(%rsp),%rcx
                                 lea
48bff2:
            48 89 ea
                                 mov
                                       %rbp,%rdx
48bff5:
            48 89 c6
                                       %rax,%rsi
                                 mov
48bff8:
            44 89 ff
                                       %r15d,%edi
                                 mov
48bffb:
            e8 50 f1 ff ff
                                 callq 48b150 < read_encoded_value_with_base>
48c000:
            48 8b 54 24 28
                                 mov
                                       0x28(%rsp),%rdx
            49 89 95 a0 00 00 00 mov
                                       %rdx,0xa0(%r13)
48c005:
48c00c:
            48 85 db
                                 test %rbx,%rbx
48c00f:
            48 0f 44 d8
                                 cmove %rax,%rbx
48c013:
            41 8b 06
                                       (%r14),%eax
                                 mov
                                       %r12,%rcx
48c016:
            4c 89 e1
                                 mov
48c019:
            4c 89 ea
                                       %r13,%rdx
                                 mov
48c01c:
            48 89 df
                                       %rbx,%rdi
                                 mov
48c01f:
            49 8d 74 06 04
                                 lea 0x4(%r14,%rax,1),%rsi
                                 callq 48b300 <execute_cfa_program>
48c024:
            e8 d7 f2 ff ff
48c029:
            48 83 c4 38
                                 add
                                      $0x38,%rsp
48c02d:
            31 c0
                                 xor
                                      %eax,%eax
48c02f:
            5b
                                %rbx
                          pop
48c030:
            5d
                          pop
                                %rbp
48c031:
            41 5c
                                       %r12
                                 pop
48c033:
            41 5d
                                       %r13
                                 pop
48c035:
            41 5e
                                       %r14
                                 DOD
            41 5f
48c037:
                                       %r15
                                 pop
48c039:
            c3
                          retq
48c03a:
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
            4c 89 cb
                                       %r9,%rbx
48c040:
                                 mov
48c043:
            48 85 db
                                 test %rbx,%rbx
48c046:
            75 58
                                 ine
                                      48c0a0 <uw frame state for+0x3b0>
48c048:
            48 83 c4 38
                                 add
                                      $0x38,%rsp
            ь 8 03 00 00 00
                                       $0x3,%eax
48c04c:
                                 mov
48c051:
            5b
                                %rbx
                          pop
48c052:
            5d
                          pop
                                %rbp
48c053:
            41 5c
                                       %r12
                                 pop
48c055:
            41 5d
                                       %r13
                                 pop
48c057:
            41 5e
                                       %r14
                                 pop
48c059:
            41 5f
                                 pop
                                       %r15
48c05b:
            c3
                          retq
                                 nopl 0x0(\%rax)
48c05c:
            0f 1f 40 00
                                 cmpb $0x68,0xa(%r15)
48c060:
            41 80 7f 0a 68
48c065:
            0f 85 2a fd ff ff
                                 jne
                                      48bd95 <uw_frame_state_for+0xa5>
48c06b:
            48 8b 10
                                       (%rax),%rdx
                                 mov
48c06e:
            49 8d 6f 0b
                                 lea
                                      0xb(%r15),%rbp
                                       $0x8,%rax
48c072:
            48 83 c0 08
                                 add
48c076:
            49 89 94 24 78 01 00 mov
                                       %rdx,0x178(%r12)
48c07d:
            00
48c07e:
            e9 12 fd ff ff
                                 jmpq 48bd95 <uw frame state for+0xa5>
                                 nopl 0x0(\%rax,\%rax,1)
48c083:
            0f 1f 44 00 00
```

```
48c088:
            0f b6 13
                                movzbl (%rbx),%edx
48c08b:
            48 8d 58 02
                                     0x2(%rax),%rbx
            49 89 94 24 68 01 00 mov
48c08f:
                                      %rdx,0x168(%r12)
48c096:
            00
48c097:
            e9 b7 fd ff ff
                                impg 48be53 <uw frame state for+0x163>
48c09c:
            0f 1f 40 00
                                nopl 0x0(\%rax)
48c0a0:
            49 89 d9
                                mov
                                      %rbx,%r9
                                jmpg 48bf49 <uw frame state for+0x259>
48c0a3:
            e9 a1 fe ff ff
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48c0a8:
48c0af:
            00
            bb 0c 00 00 00
                                       $0xc,%ebx
48c0b0:
                                mov
            e9 d4 fe ff ff
                                impg 48bf8e <uw frame state for+0x29e>
48c0b5:
                                nopw 0x0(\%rax,\%rax,1)
            66 0f 1f 44 00 00
48c0ba:
48c0c0:
            40 80 ff 08
                                      $0x8,%dil
                                cmp
            75 82
                                     48c048 <uw_frame_state_for+0x358>
48c0c4:
                                jne
                                cmpb $0x0,0x1(\%rax)
48c0c6:
            80 78 01 00
48c0ca:
            0f 85 78 ff ff ff
                                ine
                                     48c048 <uw_frame_state_for+0x358>
48c0d0:
            0f b6 78 02
                                movzbl 0x2(%rax),%edi
48c0d4:
            48 83 c0 02
                                add
                                      $0x2.%rax
                                jmpq 48bda7 <uw_frame_state_for+0xb7>
48c0d8:
            e9 ca fc ff ff
48c0dd:
            0f 1f 00
                                nopl (%rax)
48c0e0:
            49 8b 85 98 00 00 00 mov
                                      0x98(%r13),%rax
48c0e7:
            80 38 48
                                cmpb $0x48,(%rax)
                                ine 48bf28 <uw frame state for+0x238>
48c0ea:
            0f 85 38 fe ff ff
            48 ba c7 c0 0f 00 00 movabs $0x50f0000000fc0c7,%rdx
48c0f0:
48c0f7:
            00 Of 05
            48 39 50 01
48c0fa:
                                cmp
                                      %rdx,0x1(%rax)
                                     48bf28 <uw frame state for+0x238>
48c0fe:
            0f 85 24 fe ff ff
                                ine
            49 8b 85 90 00 00 00 mov
                                      0x90(%r13),%rax
48c104:
48c10b:
            48 8b 90 a0 00 00 00 mov
                                      0xa0(\%rax),\%rdx
            48 8d b0 90 00 00 00 lea 0x90(%rax),%rsi
48c112:
            41 c7 84 24 40 01 00 movl $0x1,0x140(%r12)
48c119:
48c120:
            00 01 00 00 00
48c125:
            49 c7 84 24 30 01 00 movg $0x7,0x130(%r12)
48c12c:
            00 07 00 00 00
48c131:
            41 c7 44 24 08 01 00 movl $0x1,0x8(%r12)
48c138:
            00 00
48c13a:
            41 c7 44 24 18 01 00 movl $0x1,0x18(%r12)
48c141:
            00 00
48c143:
            41 c7 44 24 28 01 00 movl $0x1,0x28(%r12)
48c14a:
            00 00
48c14c:
            48 89 d1
                                       %rdx,%rcx
                                mov
48c14f:
            48 29 d6
                                      %rdx,%rsi
                                sub
48c152:
            41 c7 44 24 38 01 00 movl $0x1,0x38(%r12)
48c159:
            00 00
48c15b:
            48 29 c1
                                sub
                                      %rax,%rcx
48c15e:
            49 89 34 24
                                mov
                                       %rsi,(%r12)
            48 8d b0 88 00 00 00 lea
48c162:
                                     0x88(%rax),%rsi
            49 89 8c 24 28 01 00 mov
48c169:
                                       %rcx,0x128(%r12)
48c170:
            00
            48 8d 48 28
                                     0x28(%rax),%rcx
48c171:
                                lea
48c175:
            41 c7 44 24 48 01 00 movl $0x1,0x48(%r12)
```

```
48c17c:
            00 00
48c17e:
            48 29 d6
                                      %rdx,%rsi
                                 sub
48c181:
            41 c7 44 24 58 01 00 movl $0x1,0x58(%r12)
48c188:
            00 00
48c18a:
            41 c7 44 24 68 01 00 movl $0x1,0x68(%r12)
48c191:
            00 00
48c193:
            48 29 d1
                                 sub
                                      %rdx,%rcx
                                       %rsi,0x10(%r12)
48c196:
            49 89 74 24 10
                                 mov
48c19b:
            48 8d b0 98 00 00 00 lea
                                      0x98(%rax),%rsi
48c1a2:
            49 89 8c 24 80 00 00 mov
                                       %rcx,0x80(%r12)
48c1a9:
            00
            48 8d 48 30
                                      0x30(%rax),%rcx
48c1aa:
                                 lea
            41 c7 84 24 88 00 00 movl $0x1,0x88(%r12)
48c1ae:
48c1b5:
            00 01 00 00 00
            48 29 d6
48c1ba:
                                      %rdx,%rsi
                                 sub
            41 c7 84 24 98 00 00 movl $0x1,0x98(%r12)
48c1bd:
48c1c4:
            00 01 00 00 00
            41 c7 84 24 a8 00 00 movl $0x1,0xa8(%r12)
48c1c9:
48c1d0:
            00 01 00 00 00
48c1d5:
            48 29 d1
                                 sub
                                      %rdx,%rcx
48c1d8:
            49 89 74 24 20
                                       %rsi,0x20(%r12)
                                 mov
48c1dd:
            48 8d b0 80 00 00 00 lea
                                      0x80(%rax),%rsi
48c1e4:
            49 89 8c 24 90 00 00 mov
                                       %rcx,0x90(%r12)
48c1eb:
            00
48c1ec:
            48 8d 48 38
                                      0x38(%rax),%rcx
                                 lea
48c1f0:
            41 c7 84 24 b8 00 00 movl $0x1,0xb8(%r12)
            00 01 00 00 00
48c1f7:
            48 29 d6
48c1fc:
                                      %rdx,%rsi
                                 sub
            41 c7 84 24 c8 00 00 movl $0x1,0xc8(%r12)
48c1ff:
48c206:
            00 01 00 00 00
            41 c7 84 24 d8 00 00 movl $0x1,0xd8(%r12)
48c20b:
            00 01 00 00 00
48c212:
48c217:
            48 29 d1
                                 sub
                                      %rdx,%rcx
48c21a:
            49 89 74 24 30
                                       %rsi,0x30(%r12)
                                 mov
            48 8d 70 70
48c21f:
                                 lea
                                      0x70(%rax),%rsi
48c223:
            49 89 8c 24 a0 00 00 mov
                                       %rcx,0xa0(%r12)
48c22a:
            00
48c22b:
            48 8d 48 40
                                      0x40(\%rax).\%rcx
                                 lea
48c22f:
            41 c7 84 24 e8 00 00 movl $0x1,0xe8(%r12)
            00 01 00 00 00
48c236:
48c23b:
            48 29 d6
                                      %rdx,%rsi
                                 sub
48c23e:
            48 29 d1
                                 sub
                                      %rdx,%rcx
48c241:
            49 89 74 24 40
                                       %rsi,0x40(%r12)
                                 mov
                                      0x68(%rax),%rsi
48c246:
            48 8d 70 68
                                 lea
48c24a:
            49 89 8c 24 b0 00 00 mov
                                       %rcx,0xb0(%r12)
48c251:
            00
48c252:
            48 8d 48 48
                                      0x48(%rax),%rcx
                                 lea
            48 29 d6
                                      %rdx,%rsi
48c256:
                                 sub
            48 29 d1
                                      %rdx,%rcx
48c259:
                                 sub
48c25c:
            49 89 74 24 50
                                       %rsi,0x50(%r12)
                                 mov
48c261:
            48 8d 70 78
                                      0x78(%rax),%rsi
                                 lea
48c265:
            49 89 8c 24 c0 00 00 mov
                                       %rcx,0xc0(%r12)
```

```
48c26c:
            00
48c26d:
            48 8d 48 50
                                lea
                                     0x50(\%rax),\%rcx
48c271:
            48 29 d6
                                sub
                                      %rdx,%rsi
48c274:
            48 29 d1
                                      %rdx,%rcx
                                sub
48c277:
            49 89 74 24 60
                                       %rsi,0x60(%r12)
                                mov
48c27c:
            49 89 8c 24 d0 00 00 mov
                                       %rcx,0xd0(%r12)
48c283:
            00
            48 8d 48 58
                                     0x58(%rax),%rcx
48c284:
                                lea
48c288:
            48 29 d1
                                      %rdx,%rcx
                                sub
48c28b:
            49 89 8c 24 e0 00 00 mov
                                       %rcx,0xe0(%r12)
48c292:
            00
                                     0x60(%rax),%rcx
48c293:
            48 8d 48 60
                                lea
48c297:
            48 05 a8 00 00 00
                                add
                                      $0xa8,%rax
48c29d:
            48 29 d0
                                sub
                                      %rdx,%rax
48c2a0:
            41 c7 84 24 f8 00 00 movl $0x1,0xf8(%r12)
            00 01 00 00 00
48c2a7:
48c2ac:
            41 c7 84 24 08 01 00 movl $0x1,0x108(%r12)
48c2b3:
            00 01 00 00 00
48c2b8:
            48 29 d1
                                      %rdx,%rcx
                                sub
48c2bb:
            49 89 84 24 00 01 00 mov
                                       %rax,0x100(%r12)
48c2c2:
            00
48c2c3:
            49 c7 84 24 68 01 00 movg $0x10,0x168(%r12)
48c2ca:
            00 10 00 00 00
            49 89 8c 24 f0 00 00 mov
                                       %rcx,0xf0(%r12)
48c2cf:
48c2d6:
            00
48c2d7:
            41 c6 84 24 73 01 00 movb $0x1,0x173(%r12)
            00 01
48c2de:
            31 c0
48c2e0:
                                      %eax,%eax
                                xor
                                jmpq 48bf2d <uw_frame_state_for+0x23d>
48c2e2:
            e9 46 fc ff ff
48c2e7:
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
            00 00
48c2ee:
            40 80 ff ff
48c2f0:
                                       $0xff,%dil
                                 cmp
48c2f4:
            0f 84 19 fd ff ff
                                je
                                     48c013 <uw_frame_state_for+0x323>
48c2fa:
            48 89 dd
                                       %rbx,%rbp
                                mov
                                      %ebx,%ebx
48c2fd:
            31 db
                                xor
            e9 da fc ff ff
48c2ff:
                                impg 48bfde <uw frame state for+0x2ee>
            0f 1f 40 00
                                nopl 0x0(\%rax)
48c304:
48c308:
            31 c9
                                      %ecx,%ecx
                                xor
48c30a:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
                                      $0x1,%rbx
48c310:
            48 83 c3 01
                                add
            0f b6 53 ff
                                movzbl -0x1(%rbx),%edx
48c314:
48c318:
            48 89 d0
                                mov
                                       %rdx,%rax
48c31b:
            83 e0 7f
                                      $0x7f,%eax
                                and
48c31e:
            48 d3 e0
                                     %cl,%rax
                                shl
48c321:
            83 c1 07
                                add $0x7,%ecx
48c324:
            49 09 c1
                                     %rax,%r9
                                or
48c327:
            84 d2
                                test %dl,%dl
                                     48c310 <uw_frame_state_for+0x620>
48c329:
            78 e5
                                js
            41 c6 84 24 72 01 00 movb $0x1,0x172(%r12)
48c32b:
48c332:
            00 01
            49 01 d9
                                add %rbx,%r9
48c334:
48c337:
            0f b6 45 01
                                movzbl 0x1(%rbp),%eax
```

```
48c33b:
             48 83 c5 01
                                 add
                                      $0x1,%rbp
 48c33f:
             e9 27 fb ff ff
                                 impg 48be6b <uw frame state for+0x17b>
 48c344:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
 48c348:
             bb 08 00 00 00
                                 mov
                                       $0x8.%ebx
                                 jmpq 48bf8e <uw_frame_state_for+0x29e>
 48c34d:
             e9 3c fc ff ff
 48c352:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
 48c358:
             48 89 d8
                                 mov
                                       %rbx,%rax
             48 89 f3
                                       %rsi,%rbx
 48c35b:
                                 mov
                                 jmpq 48c00c <uw_frame_state_for+0x31c>
 48c35e:
             e9 a9 fc ff ff
                                 test %al,%al
 48c363:
             84 c0
                                      48c375 <uw_frame_state for+0x685>
 48c365:
             75 0e
                                 ine
 48c367:
             bb 18 00 00 00
                                       $0x18.%ebx
                                 mov
                                 jmpg 48bf8e <uw frame state for+0x29e>
 48c36c:
             e9 1d fc ff ff
 48c371:
             3c 04
                                 cmp
                                       $0x4,%al
             74 f2
                                     48c367 <uw_frame_state_for+0x677>
 48c373:
                                 calla 40e090 <abort>
 48c375:
             e8 16 1d f8 ff
 48c37a:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
00000000048c380 <execute stack op>:
 48c380:
             41 57
                                 push %r15
 48c382:
             41 56
                                 push %r14
 48c384:
             41 55
                                 push %r13
 48c386:
             41 54
                                 push %r12
                          push %rbp
 48c388:
             55
                          push %rbx
 48c389:
             53
 48c38a:
             48 81 ec 38 02 00 00 sub
                                      $0x238,%rsp
48c391:
             48 39 f7
                                       %rsi,%rdi
                                 cmp
             48 89 4c 24 30
 48c394:
                                       %rcx,0x30(%rsp)
                                 mov
             0f 83 91 07 00 00
                                      48cb30 <execute_stack_op+0x7b0>
 48c399:
                                 iae
 48c39f:
             4c 8d 25 36 f4 01 00 lea
                                      0x1f436(%rip),%r12
                                                             #4ab7dc
< PRETTY FUNCTION .8641+0x14c>
                                      0x1f7eb(%rip),%r9
 48c3a6:
             4c 8d 0d eb f7 01 00 lea
                                                            # 4abb98
<__PRETTY_FUNCTION__.8641+0x508>
 48c3ad:
             4c 8d 05 6c 0e 23 00 lea
                                      0x230e6c(%rip),%r8
                                                             #6bd220
<dwarf_reg_size_table>
 48c3b4:
             48 89 fb
                                 mov
                                       %rdi,%rbx
 48c3b7:
             49 89 f5
                                       %rsi,%r13
                                 mov
                                       %rdx,%r14
 48c3ba:
             49 89 d6
                                 mov
 48c3bd:
             bd 01 00 00 00
                                 mov
                                       $0x1,%ebp
             49 bf 00 00 00 00 00 movabs $0x40000000000000,%r15
 48c3c2:
 48c3c9:
             00 00 40
 48c3cc:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
                                 movzbl (%rbx),%edx
 48c3d0:
             0f b6 13
 48c3d3:
             48 8d 73 01
                                 lea
                                     0x1(%rbx),%rsi
 48c3d7:
             8d 42 fd
                                 lea
                                      -0x3(%rdx),%eax
 48c3da:
             41 89 d3
                                       %edx,%r11d
                                 mov
 48c3dd:
             3c ee
                                       $0xee,%al
                                 cmp
             0f 87 14 01 00 00
                                     48c4f9 <execute stack op+0x179>
 48c3df:
             0f b6 c0
 48c3e5:
                                 movzbl %al,%eax
             49 63 04 84
                                 movslq (%r12,%rax,4),%rax
 48c3e8:
48c3ec:
             4c 01 e0
                                 add %r12,%rax
                                 *%rax
 48c3ef:
             ff e0
                          jmpq
```

```
48c3f1:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48c3f8:
            4c 8b 53 01
                                       0x1(%rbx),%r10
                                mov
48c3fc:
            89 ef
                                mov
                                       %ebp,%edi
48c3fe:
            48 83 c3 09
                                add
                                      $0x9,%rbx
48c402:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
48c408:
            83 ff 3f
                                      $0x3f,%edi
                                cmp
48c40b:
            0f 8f e8 00 00 00
                                     48c4f9 <execute_stack_op+0x179>
                                jg
                                     0x1(%rdi),%ebp
48c411:
            8d 6f 01
                                lea
48c414:
            48 63 ff
                                movslq %edi,%rdi
                                       %r10,0x30(%rsp,%rdi,8)
48c417:
            4c 89 54 fc 30
                                mov
            49 39 dd
                                       %rbx,%r13
48c41c:
                                cmp
48c41f:
            77 af
                                     48c3d0 < execute stack op+0x50>
                                ia
            85 ed
48c421:
                                test %ebp,%ebp
48c423:
            0f 84 d0 00 00 00
                                     48c4f9 <execute_stack_op+0x179>
                                ie
48c429:
            83 ed 01
                                      $0x1,%ebp
                                sub
48c42c:
                                movslq %ebp,%rbp
            48 63 ed
48c42f:
            48 8b 44 ec 30
                                mov
                                       0x30(%rsp,%rbp,8),%rax
48c434:
            48 81 c4 38 02 00 00 add
                                      $0x238,%rsp
48c43b:
                               %rbx
            5b
                          pop
48c43c:
            5d
                          pop
                               %rbp
48c43d:
            41 5c
                                      %r12
                                pop
48c43f:
            41 5d
                                pop
                                      %r13
48c441:
            41 5e
                                      %r14
                                pop
            41 5f
48c443:
                                pop
                                      %r15
48c445:
            c3
                          retq
48c446:
            66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
48c44d:
            00 00 00
            48 89 f3
                                       %rsi,%rbx
48c450:
                                mov
                                      48c41c <execute_stack_op+0x9c>
48c453:
            eb c7
                                jmp
48c455:
            0f 1f 00
                                nopl (%rax)
                                movslq 0x1(%rbx),%r10
48c458:
            4c 63 53 01
            89 ef
                                       %ebp,%edi
48c45c:
                                mov
48c45e:
            48 83 c3 05
                                add
                                      $0x5,%rbx
48c462:
            eb a4
                                      48c408 <execute_stack_op+0x88>
                                jmp
48c464:
            0f 1f 40 00
                                nopl 0x0(\%rax)
48c468:
            44 8b 53 01
                                mov
                                      0x1(%rbx),%r10d
            89 ef
                                      %ebp,%edi
48c46c:
                                mov
48c46e:
            48 83 c3 05
                                add
                                      $0x5,%rbx
48c472:
            eb 94
                                      48c408 <execute_stack_op+0x88>
                                imp
48c474:
            0f 1f 40 00
                                nopl 0x0(\%rax)
48c478:
            4c 0f bf 53 01
                                movswq 0x1(%rbx),%r10
48c47d:
            89 ef
                                mov
                                       %ebp,%edi
                                      $0x3,%rbx
48c47f:
            48 83 c3 03
                                add
            eb 83
                                      48c408 <execute_stack_op+0x88>
48c483:
                                jmp
48c485:
            0f 1f 00
                                nopl (%rax)
                                movzwl 0x1(%rbx),%r10d
48c488:
            44 0f b7 53 01
48c48d:
            89 ef
                                mov
                                       %ebp,%edi
                                      $0x3,%rbx
48c48f:
            48 83 c3 03
                                add
48c493:
            e9 70 ff ff ff
                                jmpq 48c408 <execute_stack_op+0x88>
48c498:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48c49f:
            00
            4c 0f be 53 01
48c4a0:
                                movsbq 0x1(\%rbx),\%r10
```

```
48c4a5:
            89 ef
                                       %ebp,%edi
                                 mov
            48 83 c3 02
                                      $0x2,%rbx
48c4a7:
                                 add
48c4ab:
            e9 58 ff ff ff
                                 jmpq 48c408 <execute stack op+0x88>
48c4b0:
            44 0f b6 53 01
                                 movzbl 0x1(%rbx),%r10d
48c4b5:
            89 ef
                                       %ebp,%edi
                                 mov
48c4b7:
            48 83 c3 02
                                 add
                                     $0x2,%rbx
48c4bb:
            e9 48 ff ff ff
                                 jmpq 48c408 <execute_stack_op+0x88>
48c4c0:
            85 ed
                                 test %ebp.%ebp
48c4c2:
            74 35
                                     48c4f9 <execute_stack_op+0x179>
                                 ie
48c4c4:
            8d 7d ff
                                 lea
                                     -0x1(%rbp),%edi
48c4c7:
            80 fa 1f
                                 cmp
                                      $0x1f,%dl
                                 movslq %edi,%rax
48c4ca:
            48 63 c7
            4c 8b 54 c4 30
                                       0x30(%rsp,%rax,8),%r10
48c4cd:
                                 mov
48c4d2:
            0f 84 26 05 00 00
                                     48c9fe <execute stack op+0x67e>
            0f 86 62 04 00 00
48c4d8:
                                     48c940 <execute_stack_op+0x5c0>
                                 jbe
48c4de:
            80 fa 23
                                       $0x23,%dl
                                 cmp
48c4e1:
            0f 84 e7 04 00 00
                                 je
                                     48c9ce <execute_stack_op+0x64e>
48c4e7:
            80 fa 94
                                       $0x94,%dl
                                 cmp
                                     48c987 <execute stack op+0x607>
48c4ea:
            0f 84 97 04 00 00
                                 ie
48c4f0:
            80 fa 20
                                 cmp
                                       $0x20,%dl
48c4f3:
            0f 84 ca 04 00 00
                                     48c9c3 < execute stack op+0x643>
                                 je
48c4f9:
            e8 92 1b f8 ff
                                 callq 40e090 <abort>
48c4fe:
            66 90
                                 xchg %ax,%ax
            44 0f b6 53 01
                                 movzbl 0x1(%rbx),%r10d
48c500:
48c505:
            4c 89 f6
                                       %r14,%rsi
                                 mov
48c508:
            4c 89 44 24 18
                                       %r8,0x18(%rsp)
                                 mov
48c50d:
            4c 89 4c 24 10
                                 mov
                                       %r9.0x10(%rsp)
            44 89 d7
                                       %r10d,%edi
48c512:
                                 mov
                                       %r10d,0xc(%rsp)
48c515:
            44 89 54 24 0c
                                 mov
48c51a:
            e8 71 ed ff ff
                                 callq 48b290 <base_of_encoded_value>
48c51f:
            44 8b 54 24 0c
                                 mov
                                       0xc(%rsp),%r10d
                                 lea
                                     0x2(%rbx),%rdx
48c524:
            48 8d 53 02
48c528:
            48 8d 4c 24 28
                                 lea
                                     0x28(%rsp),%rcx
48c52d:
            48 89 c6
                                       %rax,%rsi
                                 mov
            44 89 d7
48c530:
                                 mov
                                       %r10d,%edi
48c533:
            e8 18 ec ff ff
                                 callg 48b150 < read encoded value with base>
48c538:
            4c 8b 54 24 28
                                       0x28(\%rsp),\%r10
                                 mov
48c53d:
            48 89 c3
                                       %rax,%rbx
                                 mov
48c540:
            89 ef
                                       %ebp,%edi
                                 mov
48c542:
            4c 8b 4c 24 10
                                       0x10(\%rsp),\%r9
                                 mov
48c547:
            4c 8b 44 24 18
                                       0x18(\%rsp),\%r8
                                 mov
48c54c:
            e9 b7 fe ff ff
                                jmpq 48c408 <execute_stack_op+0x88>
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48c551:
                               %edi,%edi
48c558:
            31 ff
                          xor
48c55a:
            31 c9
                                 xor
                                      %ecx,%ecx
48c55c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48c560:
            48 83 c6 01
                                 add
                                      $0x1,%rsi
48c564:
            0f b6 56 ff
                                 movzbl -0x1(%rsi),%edx
                                       %rdx,%rax
48c568:
            48 89 d0
                                 mov
                                      $0x7f,%eax
48c56b:
            83 e0 7f
                                 and
            48 d3 e0
                                      %cl,%rax
48c56e:
                                 shl
                                      $0x7,%ecx
48c571:
            83 c1 07
                                 add
```

```
48c574:
            48 09 c7
                                      %rax.%rdi
                                 or
48c577:
            84 d2
                                 test %dl,%dl
48c579:
            78 e5
                                     48c560 <execute stack op+0x1e0>
                                 is
48c57b:
            45 31 d2
                                      %r10d,%r10d
                                 xor
48c57e:
            31 c9
                                      %ecx,%ecx
                                 xor
48c580:
            48 83 c6 01
                                 add $0x1,%rsi
48c584:
            44 0f b6 5e ff
                                 movzbl -0x1(%rsi),%r11d
            4c 89 da
                                       %r11.%rdx
48c589:
                                 mov
48c58c:
            83 e2 7f
                                      $0x7f,%edx
                                 and
48c58f:
            48 d3 e2
                                 shl
                                      %cl,%rdx
            83 c1 07
48c592:
                                 add
                                      $0x7,%ecx
48c595:
            49 09 d2
                                      %rdx.%r10
                                 or
            45 84 db
48c598:
                                 test %r11b,%r11b
            78 e3
                                     48c580 <execute_stack_op+0x200>
48c59b:
                                 is
            83 f9 3f
48c59d:
                                      $0x3f,%ecx
                                 cmp
            77 0a
                                     48c5ac <execute stack op+0x22c>
48c5a0:
                                 ia
48c5a2:
            41 83 e3 40
                                 and
                                      $0x40,%r11d
48c5a6:
            0f 85 c9 03 00 00
                                      48c975 <execute_stack_op+0x5f5>
                                 ine
48c5ac:
            83 ff 11
                                      $0x11,%edi
                                 cmp
48c5af:
            48 63 d7
                                 movslq %edi,%rdx
48c5b2:
            0f 8f 41 ff ff ff
                                     48c4f9 <execute stack op+0x179>
                                 jg
            4d 85 be c0 00 00 00 test %r15,0xc0(%r14)
48c5b8:
48c5bf:
            48 63 ff
                                 movslq %edi,%rdi
            49 8b 04 fe
                                       (%r14,%rdi,8),%rax
48c5c2:
                                     48c5d8 <execute_stack_op+0x258>
48c5c6:
            74 10
                                 ie
48c5c8:
            41 80 bc 3e d8 00 00 cmpb $0x0,0xd8(%r14,%rdi,1)
            00 00
48c5cf:
            75 13
                                     48c5e6 < execute stack op+0x266>
48c5d1:
                                 ine
            0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48c5d3:
48c5d8:
            41 80 3c 10 08
                                 cmpb $0x8,(%r8,%rdx,1)
                                      48c4f9 <execute stack op+0x179>
48c5dd:
            0f 85 16 ff ff ff
                                 ine
            48 8b 00
                                       (%rax),%rax
48c5e3:
                                 mov
48c5e6:
            49 01 c2
                                 add
                                      %rax,%r10
48c5e9:
            89 ef
                                       %ebp,%edi
                                 mov
            48 89 f3
48c5eb:
                                 mov
                                       %rsi,%rbx
48c5ee:
            e9 15 fe ff ff
                                impg 48c408 < execute stack op+0x88>
48c5f3:
            0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
                               %edi.%edi
48c5f8:
            31 ff
                          xor
            31 c9
                                      %ecx,%ecx
48c5fa:
                                 xor
48c5fc:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48c600:
            48 83 c6 01
                                      $0x1,%rsi
                                 add
48c604:
            0f b6 56 ff
                                 movzbl -0x1(%rsi),%edx
48c608:
            48 89 d0
                                       %rdx,%rax
                                 mov
48c60b:
            83 e0 7f
                                      $0x7f,%eax
                                 and
48c60e:
            48 d3 e0
                                 shl
                                      %cl,%rax
48c611:
            83 c1 07
                                     $0x7,%ecx
                                 add
48c614:
            48 09 c7
                                      %rax,%rdi
                                 or
48c617:
            84 d2
                                 test %dl.%dl
            78 e5
                                     48c600 <execute_stack_op+0x280>
48c619:
                                 js
                                 cmp $0x11,%edi
48c61b:
            83 ff 11
            48 63 d7
                                 movslq %edi,%rdx
48c61e:
            0f 8f d2 fe ff ff
                                     48c4f9 <execute_stack_op+0x179>
48c621:
                                 jg
```

```
4d 85 be c0 00 00 00 test %r15,0xc0(%r14)
48c627:
48c62e:
            48 63 ff
                                 movslq %edi,%rdi
48c631:
            4d 8b 14 fe
                                 mov
                                       (%r14,%rdi,8),%r10
48c635:
            74 19
                                     48c650 < execute stack op+0x2d0>
48c637:
            41 80 bc 3e d8 00 00 cmpb $0x0,0xd8(%r14,%rdi,1)
48c63e:
            00 00
48c640:
            0f 85 ca 00 00 00
                                     48c710 <execute_stack_op+0x390>
            66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
48c646:
48c64d:
            00 00 00
48c650:
            41 80 3c 10 08
                                 cmpb $0x8,(%r8,%rdx,1)
                                     48c4f9 <execute stack op+0x179>
48c655:
            0f 85 9e fe ff ff
                                 ine
                                       (%r10),%r10
48c65b:
            4d 8b 12
                                 mov
48c65e:
            89 ef
                                       %ebp,%edi
                                 mov
48c660:
            48 89 f3
                                       %rsi,%rbx
                                 mov
48c663:
            e9 a0 fd ff ff
                                 jmpq 48c408 <execute_stack_op+0x88>
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48c668:
48c66f:
            00
48c670:
            45 31 d2
                                      %r10d,%r10d
                                 xor
                                      %ecx,%ecx
48c673:
            31 c9
                                 xor
48c675:
            0f 1f 00
                                 nopl (%rax)
48c678:
            48 83 c6 01
                                      $0x1,%rsi
                                 add
48c67c:
            0f b6 46 ff
                                 movzbl -0x1(%rsi),%eax
48c680:
            48 89 c7
                                 mov
                                       %rax,%rdi
                                      $0x7f,%edi
48c683:
            83 e7 7f
                                 and
48c686:
            48 d3 e7
                                     %cl,%rdi
                                 shl
48c689:
            83 c1 07
                                 add
                                     $0x7,%ecx
            49 09 fa
                                     %rdi,%r10
48c68c:
                                 or
                                 test %al,%al
48c68f:
            84 c0
48c691:
            78 e5
                                     48c678 <execute_stack_op+0x2f8>
                                 js
48c693:
            83 f9 3f
                                 cmp $0x3f,%ecx
            77 08
                                     48c6a0 < execute stack op+0x320>
48c696:
                                 ja
48c698:
            a8 40
                                 test $0x40,%al
48c69a:
            0f 85 c3 02 00 00
                                 ine
                                     48c963 < execute stack op+0x5e3>
48c6a0:
            83 ea 70
                                      $0x70,%edx
                                 sub
                                       $0x11,%edx
48c6a3:
            83 fa 11
                                 cmp
48c6a6:
            Of 8f 4d fe ff ff
                                     48c4f9 <execute stack op+0x179>
                                 jg
            4d 85 be c0 00 00 00 test %r15,0xc0(%r14)
48c6ac:
                                 movslq %edx,%rdx
48c6b3:
            48 63 d2
48c6b6:
            49 8b 04 d6
                                       (%r14,%rdx,8),%rax
                                     48c5d8 <execute_stack_op+0x258>
48c6ba:
            0f 84 18 ff ff ff
                                 je
            41 80 bc 16 d8 00 00 cmpb $0x0,0xd8(%r14,%rdx,1)
48c6c0:
48c6c7:
            00 00
            0f 84 09 ff ff ff
48c6c9:
                                     48c5d8 <execute stack op+0x258>
                                 je
            e9 12 ff ff ff
48c6cf:
                                jmpq 48c5e6 <execute_stack_op+0x266>
48c6d4:
            0f 1f 40 00
                                nopl 0x0(\%rax)
48c6d8:
            83 ea 50
                                      $0x50,%edx
                                 sub
48c6db:
            83 fa 11
                                       $0x11,%edx
                                 cmp
                                     48c4f9 <execute_stack_op+0x179>
48c6de:
            0f 8f 15 fe ff ff
                                 jg
            4d 85 be c0 00 00 00 test %r15,0xc0(%r14)
48c6e4:
                                 movslq %edx,%rdx
            48 63 d2
48c6eb:
            4d 8b 14 d6
                                       (%r14,%rdx,8),%r10
48c6ee:
                                 mov
            0f 84 58 ff ff ff
                                     48c650 <execute_stack_op+0x2d0>
48c6f2:
                                 ie
```

```
48c6f8:
            41 80 bc 16 d8 00 00 cmpb $0x0,0xd8(%r14,%rdx,1)
48c6ff:
            00 00
48c701:
            0f 84 49 ff ff ff
                                je
                                     48c650 <execute stack op+0x2d0>
48c707:
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48c70e:
            00 00
48c710:
            89 ef
                                       %ebp,%edi
                                mov
48c712:
            48 89 f3
                                       %rsi,%rbx
                                mov
            e9 ee fc ff ff
                                jmpq 48c408 <execute stack op+0x88>
48c715:
                                nopw 0x0(\%rax,\%rax,1)
48c71a:
            66 0f 1f 44 00 00
48c720:
            83 fd 02
                                cmp
                                       $0x2,%ebp
            Of 8e d0 fd ff ff
                                     48c4f9 <execute_stack_op+0x179>
48c723:
                                ile
            8d 4d ff
                                     -0x1(%rbp),%ecx
48c729:
                                lea
48c72c:
            8d 55 fe
                                     -0x2(%rbp),%edx
                                lea
48c72f:
            8d 45 fd
                                lea
                                     -0x3(%rbp),%eax
                                       %rsi,%rbx
48c732:
            48 89 f3
                                mov
48c735:
            48 63 c9
                                movslq %ecx,%rcx
                                movslq %edx,%rdx
48c738:
            48 63 d2
48c73b:
            48 98
                                cltq
48c73d:
            48 8b 7c cc 30
                                       0x30(%rsp,%rcx,8),%rdi
                                mov
            4c 8b 5c d4 30
48c742:
                                mov
                                       0x30(%rsp,%rdx,8),%r11
48c747:
            4c 8b 54 c4 30
                                       0x30(%rsp,%rax,8),%r10
                                mov
48c74c:
            4c 89 5c cc 30
                                mov
                                       %r11,0x30(%rsp,%rcx,8)
48c751:
            4c 89 54 d4 30
                                mov
                                       %r10,0x30(%rsp,%rdx,8)
            48 89 7c c4 30
                                       %rdi,0x30(%rsp,%rax,8)
48c756:
                                mov
48c75b:
            e9 bc fc ff ff
                                impq 48c41c <execute_stack_op+0x9c>
48c760:
            83 fd 01
                                cmp
                                       $0x1,%ebp
            0f 8e 90 fd ff ff
                                     48c4f9 <execute stack op+0x179>
48c763:
                                ile
                                     -0x1(%rbp),%edx
48c769:
            8d 55 ff
                                lea
                                     -0x2(%rbp),%eax
48c76c:
            8d 45 fe
                                lea
48c76f:
            48 89 f3
                                       %rsi,%rbx
                                mov
48c772:
            48 63 d2
                                movslq %edx,%rdx
            48 98
48c775:
                                cltq
48c777:
            48 8b 4c d4 30
                                mov
                                       0x30(%rsp,%rdx,8),%rcx
48c77c:
            48 8b 7c c4 30
                                       0x30(%rsp,%rax,8),%rdi
                                mov
            48 89 7c d4 30
                                       %rdi,0x30(%rsp,%rdx,8)
48c781:
                                mov
48c786:
            48 89 4c c4 30
                                mov
                                       %rcx,0x30(%rsp,%rax,8)
48c78b:
            e9 8c fc ff ff
                                impq 48c41c <execute_stack_op+0x9c>
                                movzbl 0x1(%rbx),%edx
48c790:
            0f b6 53 01
48c794:
            8d 45 ff
                                lea
                                     -0x1(%rbp),%eax
48c797:
                                     0x2(%rbx),%rcx
            48 8d 4b 02
                                lea
48c79b:
            48 98
                                cltq
48c79d:
            48 39 c2
                                cmp
                                       %rax,%rdx
48c7a0:
            0f 8d 53 fd ff ff
                                      48c4f9 <execute stack op+0x179>
                                jge
            48 29 d0
                                      %rdx,%rax
48c7a6:
                                sub
48c7a9:
            89 ef
                                mov
                                       %ebp,%edi
48c7ab:
            48 89 cb
                                       %rcx,%rbx
                                mov
                                       0x30(%rsp,%rax,8),%r10
48c7ae:
            4c 8b 54 c4 30
                                mov
                                       48c408 <execute_stack_op+0x88>
48c7b3:
            e9 50 fc ff ff
                                jmpg
48c7b8:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48c7bf:
            00
            83 fd 01
                                       $0x1,%ebp
48c7c0:
                                 cmp
                                     48c4f9 <execute_stack_op+0x179>
48c7c3:
            0f 8e 30 fd ff ff
                                ile
```

```
48c7c9:
            8d 45 fe
                                      -0x2(%rbp),%eax
                                 lea
48c7cc:
            89 ef
                                       %ebp,%edi
                                 mov
48c7ce:
            48 89 f3
                                 mov
                                       %rsi,%rbx
48c7d1:
            48 98
                                 clta
                                       0x30(%rsp,%rax,8),%r10
48c7d3:
            4c 8b 54 c4 30
                                 mov
48c7d8:
            e9 2b fc ff ff
                                 jmpq 48c408 <execute stack op+0x88>
48c7dd:
            0f 1f 00
                                 nopl (%rax)
                                 test %ebp,%ebp
48c7e0:
            85 ed
48c7e2:
            0f 84 11 fd ff ff
                                      48c4f9 <execute stack op+0x179>
                                 ie
48c7e8:
            83 ed 01
                                 sub
                                      $0x1,%ebp
48c7eb:
            48 89 f3
                                 mov
                                       %rsi,%rbx
            e9 29 fc ff ff
                                 impg 48c41c <execute stack op+0x9c>
48c7ee:
48c7f3:
            0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48c7f8:
            85 ed
                                 test %ebp,%ebp
            0f 84 f9 fc ff ff
                                      48c4f9 <execute_stack_op+0x179>
48c7fa:
                                 je
            8d 45 ff
                                      -0x1(%rbp),%eax
48c800:
                                 lea
48c803:
            89 ef
                                 mov
                                       %ebp,%edi
48c805:
            48 89 f3
                                       %rsi,%rbx
                                 mov
            48 98
48c808:
                                 clta
48c80a:
            4c 8b 54 c4 30
                                 mov
                                       0x30(%rsp,%rax,8),%r10
48c80f:
            e9 f4 fb ff ff
                                 jmpq 48c408 <execute_stack_op+0x88>
48c814:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48c818:
            45 31 d2
                                      %r10d,%r10d
                                 xor
                                      %ecx,%ecx
48c81b:
            31 c9
                                 xor
48c81d:
            0f 1f 00
                                 nopl (%rax)
48c820:
            48 83 c6 01
                                 add
                                       $0x1,%rsi
                                 movzbl -0x1(%rsi),%edx
48c824:
            0f b6 56 ff
            48 89 d0
                                       %rdx,%rax
48c828:
                                 mov
                                       $0x7f,%eax
48c82b:
            83 e0 7f
                                 and
48c82e:
            48 d3 e0
                                 shl
                                      %cl,%rax
                                 add $0x7,%ecx
48c831:
            83 c1 07
48c834:
            49 09 c2
                                      %rax,%r10
                                 or
48c837:
            84 d2
                                 test %dl,%dl
48c839:
            78 e5
                                      48c820 <execute_stack_op+0x4a0>
                                 js
            83 f9 3f
                                       $0x3f,%ecx
48c83b:
                                 cmp
48c83e:
            Of 87 cc fe ff ff
                                 ja
                                      48c710 < execute stack op + 0x390 >
48c844:
            83 e2 40
                                       $0x40,%edx
                                 and
48c847:
            0f 84 c3 fe ff ff
                                      48c710 < execute stack op + 0x390 >
                                 ie
48c84d:
            48 c7 c0 ff ff ff ff
                                       $0xffffffffffffff,%rax
                                 mov
48c854:
            89 ef
                                       %ebp,%edi
                                 mov
48c856:
            48 89 f3
                                       %rsi,%rbx
                                 mov
48c859:
            48 d3 e0
                                 shl
                                      %cl,%rax
48c85c:
            49 09 c2
                                      %rax,%r10
                                 or
                                 jmpq 48c408 <execute_stack_op+0x88>
48c85f:
            e9 a4 fb ff ff
48c864:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48c868:
            48 89 f3
                                       %rsi,%rbx
                                 mov
48c86b:
            45 31 d2
                                       %r10d,%r10d
                                 xor
                                       %ecx,%ecx
48c86e:
            31 c9
                                 xor
            48 83 c3 01
48c870:
                                 add
                                       $0x1,%rbx
            0f b6 53 ff
                                 movzbl -0x1(%rbx),%edx
48c874:
            48 89 d0
                                       %rdx,%rax
48c878:
                                 mov
            83 e0 7f
                                       $0x7f,%eax
48c87b:
                                 and
```

```
48c87e:
            48 d3 e0
                                shl
                                     %cl.%rax
                                add $0x7,%ecx
48c881:
            83 c1 07
48c884:
            49 09 c2
                                     %rax,%r10
                                or
48c887:
            84 d2
                                test %dl.%dl
48c889:
            78 e5
                                     48c870 < execute stack op+0x4f0>
                                is
48c88b:
            89 ef
                                       %ebp,%edi
                                mov
48c88d:
            e9 76 fb ff ff
                                jmpq 48c408 <execute_stack_op+0x88>
48c892:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
48c898:
            44 8d 52 d0
                                lea -0x30(\%rdx),\%r10d
48c89c:
            89 ef
                                mov
                                       %ebp,%edi
            48 89 f3
                                       %rsi,%rbx
48c89e:
                                mov
            e9 62 fb ff ff
                                impg 48c408 < execute stack op+0x88>
48c8a1:
                                nopw %cs:0x0(%rax,%rax,1)
            66 2e 0f 1f 84 00 00
48c8a6:
48c8ad:
            00 00 00
            48 0f bf 43 01
                                movswq 0x1(%rbx),%rax
48c8b0:
                                lea 0x3(%rbx,%rax,1),%rbx
48c8b5:
            48 8d 5c 03 03
48c8ba:
            e9 5d fb ff ff
                                jmpq 48c41c <execute_stack_op+0x9c>
48c8bf:
            90
                          nop
48c8c0:
            85 ed
                                test %ebp,%ebp
                                     48c4f9 <execute_stack_op+0x179>
48c8c2:
            0f 84 31 fc ff ff
                                ie
48c8c8:
            83 ed 01
                                sub
                                      $0x1,%ebp
48c8cb:
            48 8d 4b 03
                                lea
                                     0x3(\%rbx),\%rcx
48c8cf:
            48 63 c5
                                movslq %ebp,%rax
                                cmpq $0x0,0x30(%rsp,%rax,8)
            48 83 7c c4 30 00
48c8d2:
                                     48c930 <execute stack op+0x5b0>
48c8d8:
            74 56
48c8da:
            48 0f bf 5b 01
                                movswq 0x1(%rbx),%rbx
            48 01 cb
                                add
                                      %rcx,%rbx
48c8df:
            e9 35 fb ff ff
48c8e2:
                                jmpq 48c41c <execute stack op+0x9c>
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48c8e7:
48c8ee:
            00 00
                                       $0x1,%ebp
48c8f0:
            83 fd 01
                                 cmp
48c8f3:
            Of 8e 00 fc ff ff
                                     48c4f9 <execute_stack_op+0x179>
                                ile
48c8f9:
            8d 7d fe
                                lea
                                     -0x2(%rbp),%edi
48c8fc:
            41 83 eb 1a
                                      $0x1a,%r11d
                                sub
                                      $0x1,%ebp
48c900:
            83 ed 01
                                sub
48c903:
            48 63 ed
                                movslq %ebp,%rbp
                                       $0x14,%r11b
48c906:
            41 80 fb 14
                                cmp
48c90a:
            48 63 c7
                                movslq %edi,%rax
48c90d:
            48 8b 4c ec 30
                                mov
                                       0x30(%rsp,%rbp,8),%rcx
                                       0x30(%rsp,%rax,8),%r10
48c912:
            4c 8b 54 c4 30
                                mov
48c917:
            0f 87 dc fb ff ff
                                     48c4f9 <execute_stack_op+0x179>
48c91d:
            45 0f b6 db
                                movzbl %r11b,%r11d
48c921:
            4b 63 04 99
                                movslq (%r9,%r11,4),%rax
            4c 01 c8
                                      %r9,%rax
48c925:
                                add
48c928:
            ff e0
                         jmpq
                                *%rax
            66 0f 1f 44 00 00
48c92a:
                                nopw 0x0(\%rax,\%rax,1)
48c930:
            48 89 cb
                                       %rcx,%rbx
                                mov
            e9 e4 fa ff ff
                                jmpq 48c41c <execute_stack_op+0x9c>
48c933:
48c938:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48c93f:
            00
48c940:
            80 fa 06
                                       $0x6,%dl
                                cmp
            74 73
48c943:
                                ie
                                     48c9b8 <execute_stack_op+0x638>
```

```
48c945:
            80 fa 19
                                       $0x19.%dl
                                 cmp
48c948:
            Of 85 ab fb ff ff
                                      48c4f9 <execute stack op+0x179>
                                 ine
48c94e:
            4c 89 d0
                                 mov
                                       %r10,%rax
48c951:
            48 89 f3
                                       %rsi.%rbx
                                 mov
48c954:
            48 c1 f8 3f
                                     $0x3f,%rax
                                 sar
48c958:
            49 31 c2
                                     %rax,%r10
                                 xor
48c95b:
            49 29 c2
                                      %rax,%r10
                                 sub
            e9 a5 fa ff ff
                                 jmpq 48c408 <execute stack op+0x88>
48c95e:
                                       $0xfffffffffffff,%rax
48c963:
            48 c7 c0 ff ff ff ff
                                 mov
                                     %cl,%rax
48c96a:
            48 d3 e0
                                 shl
                                      %rax,%r10
48c96d:
            49 09 c2
                                 or
48c970:
            e9 2b fd ff ff
                                 impg 48c6a0 < execute stack op+0x320>
                                       $0xfffffffffffff,%rax
48c975:
            48 c7 c0 ff ff ff ff
                                 mov
48c97c:
            48 d3 e0
                                 shl
                                     %cl,%rax
            49 09 c2
                                      %rax,%r10
48c97f:
                                 or
48c982:
            e9 25 fc ff ff
                                 jmpq 48c5ac <execute stack op+0x22c>
48c987:
            0f b6 43 01
                                 movzbl 0x1(%rbx),%eax
48c98b:
            48 8d 53 02
                                 lea 0x2(%rbx),%rdx
48c98f:
            3c 02
                                 cmp
                                       $0x2,%al
48c991:
            0f 84 82 01 00 00
                                 ie
                                     48cb19 <execute_stack_op+0x799>
48c997:
            0f 86 68 01 00 00
                                     48cb05 < execute stack op+0x785>
                                ibe
                                 cmp
48c99d:
            3c 04
                                       $0x4,%al
                                     48cb25 <execute_stack_op+0x7a5>
48c99f:
            0f 84 80 01 00 00
                                 je
48c9a5:
            3c 08
                                 cmp
                                       $0x8.%al
                                 jne
                                      48c4f9 <execute_stack_op+0x179>
48c9a7:
            Of 85 4c fb ff ff
48c9ad:
            4d 8b 12
                                       (%r10),%r10
                                 mov
            48 89 d3
                                       %rdx,%rbx
48c9b0:
                                 mov
            e9 50 fa ff ff
                                 jmpq 48c408 <execute stack op+0x88>
48c9b3:
                                       (%r10),%r10
48c9b8:
            4d 8b 12
                                 mov
48c9bb:
            48 89 f3
                                       %rsi,%rbx
                                 mov
                                 jmpq 48c408 <execute stack op+0x88>
48c9be:
            e9 45 fa ff ff
            49 f7 d2
                                      %r10
48c9c3:
                                not
48c9c6:
            48 89 f3
                                 mov
                                       %rsi,%rbx
48c9c9:
            e9 3a fa ff ff
                                 jmpq 48c408 <execute_stack_op+0x88>
                                      %r11d,%r11d
48c9ce:
            45 31 db
                                 xor
48c9d1:
            31 c9
                                      %ecx.%ecx
                                 xor
48c9d3:
            0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48c9d8:
            48 83 c6 01
                                      $0x1.%rsi
                                 add
48c9dc:
            0f b6 56 ff
                                 movzbl -0x1(%rsi),%edx
                                       %rdx,%rax
48c9e0:
            48 89 d0
                                 mov
            83 e0 7f
                                      $0x7f,%eax
48c9e3:
                                 and
48c9e6:
            48 d3 e0
                                 shl
                                     %cl,%rax
                                     $0x7,%ecx
48c9e9:
            83 c1 07
                                 add
                                     %rax,%r11
48c9ec:
            49 09 c3
                                 or
48c9ef:
            84 d2
                                 test %dl,%dl
48c9f1:
            78 e5
                                     48c9d8 <execute stack op+0x658>
                                 is
48c9f3:
            4d 01 da
                                 add
                                      %r11,%r10
48c9f6:
            48 89 f3
                                 mov
                                       %rsi.%rbx
48c9f9:
                                jmpq 48c408 <execute_stack_op+0x88>
            e9 0a fa ff ff
                                      %r10
48c9fe:
            49 f7 da
                                 neg
            48 89 f3
                                       %rsi,%rbx
48ca01:
                                 mov
            e9 ff f9 ff ff
48ca04:
                                 impq 48c408 <execute_stack_op+0x88>
```

```
48ca09:
            49 21 ca
                                 and
                                      %rcx,%r10
            48 89 f3
48ca0c:
                                       %rsi,%rbx
                                 mov
48ca0f:
            e9 f4 f9 ff ff
                                 jmpq 48c408 <execute stack op+0x88>
48ca14:
            4c 89 d0
                                       %r10.%rax
                                 mov
48ca17:
            48 89 f3
                                       %rsi,%rbx
                                 mov
            48 99
48ca1a:
                                 cqto
48ca1c:
            48 f7 f9
                                 idiv %rcx
            49 89 c2
                                       %rax,%r10
48ca1f:
                                 mov
            e9 e1 f9 ff ff
                                      48c408 < execute stack op+0x88>
48ca22:
                                 jmpq
48ca27:
            49 29 ca
                                sub
                                      %rcx,%r10
48ca2a:
            48 89 f3
                                 mov
                                       %rsi,%rbx
            e9 d6 f9 ff ff
                                impg 48c408 < execute stack op+0x88>
48ca2d:
            4c 89 d0
                                       %r10,%rax
48ca32:
                                 mov
48ca35:
            31 d2
                                      %edx,%edx
                                 xor
48ca37:
            48 89 f3
                                       %rsi,%rbx
                                 mov
            48 f7 f1
                                      %rcx
48ca3a:
                                 div
48ca3d:
            49 89 d2
                                 mov
                                       %rdx,%r10
            e9 c3 f9 ff ff
                                 jmpq 48c408 <execute stack op+0x88>
48ca40:
48ca45:
            4c Of af d1
                                imul %rcx,%r10
48ca49:
            48 89 f3
                                 mov
                                       %rsi,%rbx
                                 jmpq 48c408 <execute_stack_op+0x88>
48ca4c:
            e9 b7 f9 ff ff
                                     %rcx,%r10
48ca51:
            49 09 ca
                                 or
48ca54:
            48 89 f3
                                       %rsi,%rbx
                                 mov
            e9 ac f9 ff ff
                                 impg 48c408 < execute stack op+0x88>
48ca57:
48ca5c:
            49 01 ca
                                      %rcx,%r10
                                 add
48ca5f:
            48 89 f3
                                       %rsi,%rbx
                                 mov
                                 jmpq 48c408 <execute_stack_op+0x88>
            e9 a1 f9 ff ff
48ca62:
                                     %cl,%r10
48ca67:
            49 d3 e2
                                 shl
                                       %rsi,%rbx
48ca6a:
            48 89 f3
                                 mov
48ca6d:
            e9 96 f9 ff ff
                                 jmpq 48c408 <execute_stack_op+0x88>
                                 shr %cl,%r10
48ca72:
            49 d3 ea
            48 89 f3
48ca75:
                                 mov %rsi,%rbx
                                 jmpq 48c408 <execute_stack_op+0x88>
48ca78:
            e9 8b f9 ff ff
48ca7d:
            49 d3 fa
                                     %cl,%r10
                                 sar
            48 89 f3
48ca80:
                                       %rsi.%rbx
                                 mov
                                jmpq 48c408 <execute_stack_op+0x88>
48ca83:
            e9 80 f9 ff ff
                                      %rcx,%r10
48ca88:
            49 31 ca
                                 xor
48ca8b:
            48 89 f3
                                       %rsi,%rbx
                                 mov
48ca8e:
            e9 75 f9 ff ff
                                       48c408 < execute stack op+0x88>
                                 impa
48ca93:
            49 39 ca
                                       %rcx,%r10
                                 cmp
48ca96:
            48 89 f3
                                       %rsi,%rbx
                                 mov
48ca99:
            41 0f 94 c2
                                 sete %r10b
                                 movzbl %r10b,%r10d
48ca9d:
            45 0f b6 d2
                                 jmpq 48c408 <execute_stack_op+0x88>
48caa1:
            e9 62 f9 ff ff
48caa6:
            49 39 ca
                                 cmp
                                       %rcx,%r10
48caa9:
            48 89 f3
                                       %rsi,%rbx
                                 mov
48caac:
            41 0f 9d c2
                                 setge %r10b
            45 0f b6 d2
                                 movzbl %r10b,%r10d
48cab0:
                                jmpq 48c408 <execute_stack_op+0x88>
48cab4:
            e9 4f f9 ff ff
            49 39 ca
                                       %rcx,%r10
48cab9:
                                 cmp
            48 89 f3
                                       %rsi,%rbx
48cabc:
                                 mov
48cabf:
            41 0f 9f c2
                                 setg %r10b
```

```
48cac3:
             45 0f b6 d2
                                 movzbl %r10b,%r10d
             e9 3c f9 ff ff
 48cac7:
                                 impg 48c408 < execute stack op+0x88>
 48cacc:
             49 39 ca
                                 cmp
                                       %rcx,%r10
 48cacf:
             48 89 f3
                                 mov
                                        %rsi.%rbx
                                 setle %r10b
 48cad2:
             41 0f 9e c2
 48cad6:
             45 0f b6 d2
                                 movzbl %r10b,%r10d
 48cada:
             e9 29 f9 ff ff
                                 jmpq 48c408 <execute_stack_op+0x88>
             49 39 ca
                                       %rcx,%r10
 48cadf:
                                 cmp
 48cae2:
             48 89 f3
                                 mov
                                       %rsi,%rbx
                                 setl %r10b
 48cae5:
             41 0f 9c c2
             45 0f b6 d2
                                 movzbl %r10b,%r10d
 48cae9:
             e9 16 f9 ff ff
                                 impg 48c408 < execute stack op+0x88>
 48caed:
 48caf2:
             49 39 ca
                                       %rcx,%r10
                                 cmp
 48caf5:
             48 89 f3
                                       %rsi,%rbx
                                 mov
             41 0f 95 c2
                                 setne %r10b
 48caf8:
             45 0f b6 d2
                                 movzbl %r10b,%r10d
 48cafc:
 48cb00:
             e9 03 f9 ff ff
                                 jmpq 48c408 <execute_stack_op+0x88>
 48cb05:
             3c 01
                                 cmp
                                       $0x1,%al
                                 ine 48c4f9 <execute stack op+0x179>
 48cb07:
             0f 85 ec f9 ff ff
 48cb0d:
             45 0f b6 12
                                 movzbl (%r10),%r10d
 48cb11:
             48 89 d3
                                       %rdx,%rbx
                                 mov
 48cb14:
             e9 ef f8 ff ff
                                 impq 48c408 <execute_stack_op+0x88>
                                 movzwl (%r10),%r10d
 48cb19:
             45 0f b7 12
             48 89 d3
                                       %rdx,%rbx
 48cb1d:
                                 mov
                                 jmpq 48c408 <execute_stack_op+0x88>
 48cb20:
             e9 e3 f8 ff ff
 48cb25:
             45 8b 12
                                        (%r10),%r10d
                                 mov
             48 89 d3
                                       %rdx,%rbx
 48cb28:
                                 mov
             e9 d8 f8 ff ff
                                       48c408 < execute stack op+0x88>
 48cb2b:
                                 jmpg
 48cb30:
             48 89 c8
                                 mov
                                        %rcx,%rax
 48cb33:
             e9 fc f8 ff ff
                                 jmpq 48c434 <execute_stack_op+0xb4>
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48cb38:
             00
 48cb3f:
00000000048cb40 <uw_update_context_1>:
             41 57
 48cb40:
                                 push %r15
                                 push %r14
 48cb42:
             41 56
             49 89 ff
                                       %rdi,%r15
 48cb44:
                                 mov
 48cb47:
             41 55
                                 push %r13
 48cb49:
             41 54
                                 push %r12
 48cb4b:
             55
                          push
                                %rbp
             53
                          push %rbx
 48cb4c:
48cb4d:
             48 81 ec 18 01 00 00 sub
                                       $0x118,%rsp
                                 movdga (%rdi),%xmm0
 48cb54:
             66 0f 6f 07
                                       %rsi,0x8(%rsp)
 48cb58:
             48 89 74 24 08
 48cb5d:
             0f 29 44 24 20
                                 movaps %xmm0,0x20(%rsp)
 48cb62:
             66 0f 6f 47 10
                                 movdga 0x10(%rdi),%xmm0
                                 movaps \%xmm0,0x30(\%rsp)
 48cb67:
             0f 29 44 24 30
             66 0f 6f 47 20
                                 movdqa 0x20(%rdi),%xmm0
 48cb6c:
                                 movaps %xmm0,0x40(%rsp)
             0f 29 44 24 40
 48cb71:
             66 0f 6f 47 30
                                 movdqa 0x30(%rdi),%xmm0
 48cb76:
 48cb7b:
             0f 29 44 24 50
                                 movaps \%xmm0,0x50(\%rsp)
             66 0f 6f 47 40
                                 movdqa 0x40(%rdi),%xmm0
 48cb80:
```

```
48cb85:
            0f 29 44 24 60
                                movaps \%xmm0.0x60(\%rsp)
48cb8a:
            66 0f 6f 47 50
                                movdqa 0x50(%rdi),%xmm0
48cb8f:
            0f 29 44 24 70
                                movaps \%xmm0,0x70(\%rsp)
48cb94:
            66 0f 6f 47 60
                                movdga 0x60(%rdi),%xmm0
48cb99:
            0f 29 84 24 80 00 00 movaps %xmm0,0x80(%rsp)
48cba0:
            00
48cba1:
            66 0f 6f 47 70
                                movdqa 0x70(%rdi),%xmm0
            0f 29 84 24 90 00 00 movaps %xmm0,0x90(%rsp)
48cba6:
48cbad:
48cbae:
            66 0f 6f 87 80 00 00 movdqa 0x80(%rdi),%xmm0
48cbb5:
            0f 29 84 24 a0 00 00 movaps %xmm0,0xa0(%rsp)
48cbb6:
48cbbd:
            00
48cbbe:
            66 0f 6f 87 90 00 00 movdqa 0x90(%rdi),%xmm0
48cbc5:
            00
48cbc6:
            0f 29 84 24 b0 00 00 movaps %xmm0,0xb0(%rsp)
48cbcd:
            00
            66 0f 6f 87 a0 00 00 movdqa 0xa0(%rdi),%xmm0
48cbce:
48cbd5:
            00
48cbd6:
            0f 29 84 24 c0 00 00 movaps %xmm0,0xc0(%rsp)
48cbdd:
            00
48cbde:
            66 0f 6f 87 b0 00 00 movdqa 0xb0(%rdi),%xmm0
48cbe5:
48cbe6:
            0f 29 84 24 d0 00 00 movaps %xmm0,0xd0(%rsp)
48cbed:
            00
48cbee:
            66 0f 6f 87 c0 00 00 movdqa 0xc0(%rdi),%xmm0
            00
48cbf5:
48cbf6:
            66 48 0f 7e c0
                                movg %xmm0,%rax
            0f 29 84 24 e0 00 00 movaps %xmm0,0xe0(%rsp)
48cbfb:
48cc02:
            00
                                    $0x3e,%rax
48cc03:
            48 Of ba e0 3e
                                bt
48cc08:
            66 0f 6f 87 d0 00 00 movdqa 0xd0(%rdi),%xmm0
48cc0f:
            00
48cc10:
            0f 29 84 24 f0 00 00 movaps %xmm0,0xf0(%rsp)
48cc17:
            00
48cc18:
            66 0f 6f 87 e0 00 00 movdga 0xe0(%rdi),%xmm0
48cc1f:
48cc20:
            0f 29 84 24 00 01 00 movaps %xmm0,0x100(%rsp)
48cc27:
            00
48cc28:
            0f 83 2a 02 00 00
                                    48ce58 <uw_update_context_1+0x318>
                                jae
48cc2e:
            80 bc 24 ff 00 00 00
                               cmpb $0x0,0xff(%rsp)
48cc35:
            00
48cc36:
            0f 84 1c 02 00 00
                                je
                                    48ce58 <uw_update_context_1+0x318>
            41 f6 87 c7 00 00 00 testb $0x40,0xc7(%r15)
48cc3c:
48cc43:
            40
48cc44:
            74 08
                                    48cc4e <uw update context 1+0x10e>
                                je
48cc46:
            41 c6 87 df 00 00 00 movb $0x0,0xdf(%r15)
48cc4d:
            00
            48 8b 44 24 08
48cc4e:
                                mov
                                      0x8(%rsp),%rax
            49 c7 47 38 00 00 00 movq $0x0,0x38(%r15)
48cc53:
48cc5a:
            00
48cc5b:
            8b 80 40 01 00 00
                                      0x140(\%rax),\%eax
                                mov
```

```
48cc61:
             83 f8 01
                                       $0x1.%eax
                                 cmp
48cc64:
             0f 84 6e 02 00 00
                                      48ced8 <uw update context 1+0x398>
                                 ie
48cc6a:
             83 f8 02
                                 cmp
                                       $0x2.%eax
48cc6d:
             0f 85 98 01 00 00
                                      48ce0b <uw update context 1+0x2cb>
                                 ine
48cc73:
             48 8b 44 24 08
                                       0x8(\%rsp),\%rax
                                 mov
48cc78:
             31 f6
                                      %esi,%esi
                                 xor
48cc7a:
             31 c9
                                      %ecx,%ecx
                                 xor
             48 8b b8 38 01 00 00 mov
                                       0x138(%rax),%rdi
48cc7c:
48cc83:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48cc88:
             48 83 c7 01
                                 add
                                      $0x1,%rdi
             0f b6 57 ff
                                 movzbl -0x1(%rdi),%edx
48cc8c:
48cc90:
             48 89 d0
                                       %rdx.%rax
                                 mov
                                      $0x7f,%eax
48cc93:
             83 e0 7f
                                 and
48cc96:
             48 d3 e0
                                 shl
                                      %cl,%rax
                                 add $0x7,%ecx
48cc99:
             83 c1 07
48cc9c:
             48 09 c6
                                      %rax,%rsi
                                 or
48cc9f:
             84 d2
                                 test %dl,%dl
48cca1:
             78 e5
                                     48cc88 <uw_update_context_1+0x148>
                                 is
                                     0x20(%rsp),%rdx
48cca3:
             48 8d 54 24 20
                                 lea
48cca8:
             48 01 fe
                                 add
                                      %rdi,%rsi
48ccab:
             31 c9
                                      %ecx.%ecx
                                 xor
                                 callq 48c380 <execute_stack_op>
48ccad:
             e8 ce f6 ff ff
48ccb2:
             49 89 c5
                                 mov
                                       %rax,%r13
             48 8d 44 24 20
                                      0x20(%rsp),%rax
48ccb5:
                                 lea
48ccba:
             48 8b 6c 24 08
                                 mov
                                       0x8(%rsp),%rbp
48ccbf:
             4c 8d 35 26 ef 01 00 lea
                                      0x1ef26(%rip),%r14
                                                              # 4abbec
< PRETTY FUNCTION .8641+0x55c>
             4d 89 af 90 00 00 00 mov
48ccc6:
                                       %r13,0x90(%r15)
                                      %ebx,%ebx
48cccd:
             31 db
                                 xor
48cccf:
             49 bc 00 00 00 00 movabs $0x40000000000000,%r12
             00 00 40
48ccd6:
48ccd9:
             48 89 04 24
                                       %rax,(%rsp)
                                 mov
48ccdd:
             0f 1f 00
                                 nopl (%rax)
                                 cmpl $0x5,0x8(%rbp)
48cce0:
             83 7d 08 05
             77 37
                                      48cd1d <uw_update_context_1+0x1dd>
48cce4:
48cce6:
             8b 45 08
                                       0x8(\%rbp),\%eax
                                 movslq (%r14,%rax,4),%rax
             49 63 04 86
48cce9:
                                      %r14,%rax
48cced:
             4c 01 f0
                                 add
48ccf0:
                                 *%rax
             ff e0
                          jmpq
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48ccf2:
48ccf8:
             48 8b 45 00
                                       0x0(%rbp),%rax
                                 mov
48ccfc:
             48 8d 35 1d 05 23 00 lea
                                      0x23051d(%rip),%rsi
                                                               #6bd220
<dwarf reg size table>
             4c 01 e8
                                      %r13,%rax
48cd03:
                                 add
48cd06:
             80 3c 1e 08
                                 cmpb $0x8,(%rsi,%rbx,1)
48cd0a:
             0f 87 fb 00 00 00
                                      48ce0b <uw update context 1+0x2cb>
                                 ja
             41 c6 84 1f d8 00 00 movb $0x1,0xd8(%r15,%rbx,1)
48cd10:
48cd17:
             00 01
48cd19:
             49 89 04 df
                                       %rax,(%r15,%rbx,8)
                                 mov
             48 83 c3 01
                                       $0x1,%rbx
48cd1d:
                                 add
48cd21:
             48 83 c5 10
                                       $0x10,%rbp
                                 add
                                       $0x12,%rbx
48cd25:
             48 83 fb 12
                                 cmp
```

```
48cd29:
            75 b5
                                      48cce0 <uw update context 1+0x1a0>
48cd2b:
            48 8b 5c 24 08
                                       0x8(\%rsp),\%rbx
                                 mov
48cd30:
            49 8b 87 c0 00 00 00 mov
                                       0xc0(%r15),%rax
48cd37:
            80 bb 73 01 00 00 00 cmpb $0x0,0x173(%rbx)
48cd3e:
            0f 85 0c 02 00 00
                                     48cf50 <uw_update_context_1+0x410>
48cd44:
            48 ba ff ff ff ff
                                 movabs $0x7fffffffffffff,%rdx
48cd4b:
            ff ff 7f
48cd4e:
            48 21 d0
                                      %rdx,%rax
                                 and
48cd51:
            49 89 87 c0 00 00 00 mov
                                       %rax,0xc0(%r15)
            48 81 c4 18 01 00 00 add
48cd58:
                                      $0x118,%rsp
48cd5f:
            5b
                          pop
                                %rbx
48cd60:
            5d
                          pop
                                %rbp
            41 5c
48cd61:
                                      %r12
                                 pop
48cd63:
            41 5d
                                      %r13
                                 pop
48cd65:
            41 5e
                                      %r14
                                 pop
            41 5f
48cd67:
                                      %r15
                                 pop
48cd69:
            с3
                          retq
48cd6a:
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
                                       0x0(%rbp),%rdi
48cd70:
            48 8b 7d 00
                                 mov
48cd74:
            31 f6
                                 xor
                                      %esi,%esi
48cd76:
            31 c9
                                      %ecx,%ecx
                                 xor
48cd78:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48cd7f:
            00
48cd80:
                                      $0x1,%rdi
            48 83 c7 01
                                 add
                                 movzbl -0x1(%rdi),%edx
48cd84:
            0f b6 57 ff
48cd88:
            48 89 d0
                                 mov
                                       %rdx,%rax
48cd8b:
                                      $0x7f,%eax
            83 e0 7f
                                 and
                                      %cl,%rax
48cd8e:
            48 d3 e0
                                 shl
                                      $0x7,%ecx
48cd91:
            83 c1 07
                                 add
48cd94:
            48 09 c6
                                      %rax,%rsi
                                 or
48cd97:
                                 test %dl,%dl
            84 d2
48cd99:
            78 e5
                                     48cd80 <uw_update_context_1+0x240>
                                 js
48cd9b:
            48 8b 14 24
                                 mov
                                       (%rsp),%rdx
48cd9f:
            48 01 fe
                                 add
                                      %rdi,%rsi
            4c 89 e9
                                      %r13,%rcx
48cda2:
                                 mov
48cda5:
            e8 d6 f5 ff ff
                                 callq 48c380 < execute stack op>
            4d 85 a7 c0 00 00 00 test %r12,0xc0(%r15)
48cdaa:
                                     48cd19 <uw update context 1+0x1d9>
48cdb1:
            0f 84 62 ff ff ff
                                 ie
48cdb7:
            41 c6 84 1f d8 00 00 movb $0x0,0xd8(%r15,%rbx,1)
            00 00
48cdbe:
48cdc0:
            e9 54 ff ff ff
                                 jmpq 48cd19 <uw_update_context_1+0x1d9>
48cdc5:
            0f 1f 00
                                 nopl (%rax)
48cdc8:
            48 8b 7d 00
                                       0x0(%rbp),%rdi
                                 mov
48cdcc:
            31 f6
                                      %esi,%esi
                                 xor
48cdce:
            31 c9
                                 xor
                                      %ecx,%ecx
48cdd0:
            48 83 c7 01
                                      $0x1.%rdi
                                 add
48cdd4:
            0f b6 57 ff
                                 movzbl -0x1(%rdi),%edx
            48 89 d0
                                       %rdx,%rax
48cdd8:
                                 mov
48cddb:
            83 e0 7f
                                      $0x7f,%eax
                                 and
            48 d3 e0
                                      %cl,%rax
48cdde:
                                 shl
48cde1:
            83 c1 07
                                      $0x7,%ecx
                                 add
48cde4:
            48 09 c6
                                      %rax,%rsi
                                 or
```

```
48cde7:
             84 d2
                                 test %dl.%dl
48cde9:
             78 e5
                                      48cdd0 <uw_update_context_1+0x290>
48cdeb:
             48 8b 14 24
                                 mov
                                       (%rsp),%rdx
48cdef:
             48 01 fe
                                 add
                                       %rdi,%rsi
48cdf2:
             4c 89 e9
                                 mov %r13,%rcx
48cdf5:
             e8 86 f5 ff ff
                                 callq 48c380 < execute stack op>
48cdfa:
             48 8d 35 1f 04 23 00 lea 0x23041f(%rip),%rsi
                                                              #6bd220
<dwarf reg size table>
48ce01:
             80 3c 1e 08
                                 cmpb $0x8,(%rsi,%rbx,1)
                                      48cd10 <uw_update_context_1+0x1d0>
48ce05:
             0f 86 05 ff ff ff
48ce0b:
                                 callq 40e090 <abort>
             e8 80 12 f8 ff
                                       0x0(\%rbp),\%rdx
48ce10:
             48 8b 55 00
             48 63 c2
                                 movslq %edx,%rax
48ce14:
             80 bc 04 f8 00 00 00 cmpb $0x0,0xf8(%rsp,%rax,1)
48ce17:
48ce1e:
             00
             75 7f
48ce1f:
                                      48cea0 <uw update context 1+0x360>
                                 ine
48ce21:
             4d 85 a7 c0 00 00 00 test %r12,0xc0(%r15)
48ce28:
             48 8b 44 c4 20
                                       0x20(%rsp,%rax,8),%rax
                                 mov
48ce2d:
             0f 84 e6 fe ff ff
                                      48cd19 <uw update context 1+0x1d9>
                                 ie
48ce33:
             eb 82
                                 imp
                                       48cdb7 <uw_update_context_1+0x277>
48ce35:
             0f 1f 00
                                 nopl (%rax)
48ce38:
             48 8b 45 00
                                 mov
                                       0x0(%rbp),%rax
48ce3c:
             4c 01 e8
                                 add
                                       %r13,%rax
             4d 85 a7 c0 00 00 00 test %r12,0xc0(%r15)
48ce3f:
                                      48cd19 <uw_update_context_1+0x1d9>
48ce46:
             Of 84 cd fe ff ff
48ce4c:
             e9 66 ff ff ff
                                 jmpg 48cdb7 <uw update context 1+0x277>
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48ce51:
                                 cmpg $0x0,0x58(\%rsp)
48ce58:
             48 83 7c 24 58 00
                                      48cc3c <uw_update_context_1+0xfc>
48ce5e:
             0f 85 d8 fd ff ff
                                 ine
48ce64:
             80 3d bc 03 23 00 08 cmpb $0x8,0x2303bc(%rip)
                                                                 #6bd227
<dwarf reg size table+0x7>
48ce6b:
             49 8b 87 90 00 00 00 mov
                                       0x90(%r15),%rax
48ce72:
             75 97
                                 jne
                                     48ce0b <uw_update_context_1+0x2cb>
48ce74:
             f6 84 24 e7 00 00 00 testb $0x40,0xe7(%rsp)
48ce7b:
             40
48ce7c:
             48 89 44 24 18
                                 mov
                                       %rax,0x18(%rsp)
                                      48ce8b <uw_update_context_1+0x34b>
             74 08
48ce81:
             c6 84 24 ff 00 00 00 movb $0x0,0xff(%rsp)
48ce83:
48ce8a:
             00
48ce8b:
             48 8d 44 24 18
                                      0x18(%rsp),%rax
                                 lea
48ce90:
             48 89 44 24 58
                                       %rax,0x58(%rsp)
                                 mov
48ce95:
             e9 a2 fd ff ff
                                 impg 48cc3c <uw update context 1+0xfc>
                                 nopw 0x0(\%rax,\%rax,1)
48ce9a:
             66 0f 1f 44 00 00
                                       $0x11,%edx
48cea0:
             83 fa 11
                                 cmp
48cea3:
             0f 8f 62 ff ff ff
                                 jg
                                      48ce0b <uw_update_context_1+0x2cb>
48cea9:
             4c 85 a4 24 e0 00 00 test %r12,0xe0(%rsp)
48ceb0:
             00
                                       0x20(%rsp,%rax,8),%rdx
48ceb1:
             48 8b 54 c4 20
                                 mov
             75 78
                                      48cf30 <uw_update_context_1+0x3f0>
48ceb6:
                                 ine
                                      0x230361(%rip),%rsi
48ceb8:
             48 8d 35 61 03 23 00 lea
                                                               #6bd220
<dwarf reg size table>
             80 3c 06 08
48cebf:
                                 cmpb $0x8,(%rsi,%rax,1)
```

```
48cec3:
             0f 85 42 ff ff ff
                                      48ce0b <uw update context 1+0x2cb>
 48cec9:
             48 8b 02
                                        (%rdx),%rax
                                 mov
 48cecc:
             e9 29 ff ff ff
                                 impg 48cdfa <uw update context 1+0x2ba>
 48ced1:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
                                        0x8(%rsp),%rax
 48ced8:
             48 8b 44 24 08
                                 mov
                                        0x130(%rax),%rax
 48cedd:
             48 8b 80 30 01 00 00 mov
 48cee4:
             83 f8 11
                                 cmp
                                        $0x11,%eax
             Of 8f 1e ff ff ff
                                      48ce0b <uw update context 1+0x2cb>
 48cee7:
                                 ig
             f6 84 24 e7 00 00 00 testb $0x40,0xe7(%rsp)
 48ceed:
             40
 48cef4:
             48 98
 48cef5:
                                 cltq
             4c 8b 54 c4 20
                                        0x20(%rsp,%rax,8),%r10
 48cef7:
                                 mov
                                       48cf40 <uw update_context_1+0x400>
 48cefc:
             75 42
                                 ine
 48cefe:
             48 8d 15 1b 03 23 00 lea
                                      0x23031b(%rip),%rdx
                                                                #6bd220
<dwarf_reg_size_table>
                                 cmpb $0x8,(%rdx,%rax,1)
 48cf05:
             80 3c 02 08
 48cf09:
             Of 85 fc fe ff ff
                                 ine
                                      48ce0b <uw_update_context_1+0x2cb>
 48cf0f:
             4d 8b 12
                                        (%r10),%r10
                                 mov
 48cf12:
             48 8b 44 24 08
                                        0x8(\%rsp),\%rax
                                 mov
 48cf17:
             4c 03 90 28 01 00 00 add
                                       0x128(%rax),%r10
 48cf1e:
             4d 89 d5
                                        %r10,%r13
                                 mov
 48cf21:
             e9 8f fd ff ff
                                 impq 48ccb5 <uw_update_context_1+0x175>
 48cf26:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
             00 00 00
 48cf2d:
                                        %rdx,%rax
 48cf30:
             48 89 d0
                                 mov
 48cf33:
             e9 c2 fe ff ff
                                 jmpq 48cdfa <uw_update_context_1+0x2ba>
 48cf38:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48cf3f:
             00
 48cf40:
             80 bc 04 f8 00 00 00 cmpb $0x0,0xf8(%rsp,%rax,1)
 48cf47:
             00
             74 b4
 48cf48:
                                      48cefe <uw update context 1+0x3be>
                                 ie
                                 jmp 48cf12 <uw_update_context_1+0x3d2>
 48cf4a:
             eb c6
 48cf4c:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
             48 ba 00 00 00 00 00 movabs $0x80000000000000,%rdx
 48cf50:
 48cf57:
             00 00 80
 48cf5a:
             48 09 d0
                                 or
                                      %rdx,%rax
 48cf5d:
             49 89 87 c0 00 00 00 mov
                                        %rax,0xc0(%r15)
                                 jmpg 48cd58 <uw update context 1+0x218>
 48cf64:
             e9 ef fd ff ff
 48cf69:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
00000000048cf70 <uw_init_context_1>:
 48cf70:
             41 55
                                 push %r13
             41 54
                                 push %r12
 48cf72:
                                       %eax,%eax
 48cf74:
             31 c0
                                 xor
 48cf76:
             55
                           push
                                %rbp
 48cf77:
             53
                           push
                                %rbx
 48cf78:
             b9 1e 00 00 00
                                 mov
                                        $0x1e,%ecx
             48 89 fb
                                        %rdi,%rbx
 48cf7d:
                                 mov
 48cf80:
             49 89 f5
                                        %rsi,%r13
                                 mov
             49 89 d4
                                        %rdx,%r12
 48cf83:
                                 mov
             48 81 ec 98 01 00 00 sub
                                       $0x198,%rsp
 48cf86:
 48cf8d:
             f3 48 ab
                                 rep stos %rax,%es:(%rdi)
```

```
48cf90:
             48 8d 6c 24 10
                                 lea 0x10(\%rsp).\%rbp
48cf95:
             48 89 df
                                        %rbx,%rdi
                                 mov
48cf98:
             48 8b 84 24 b8 01 00 mov
                                       0x1b8(%rsp),%rax
48cf9f:
             00
48cfa0:
             48 89 ee
                                       %rbp,%rsi
                                 mov
             48 89 83 98 00 00 00 mov
48cfa3:
                                       %rax,0x98(%rbx)
48cfaa:
             48 b8 00 00 00 00 00 movabs $0x400000000000000,%rax
48cfb1:
             00 00 40
48cfb4:
             48 89 83 c0 00 00 00 mov
                                       %rax,0xc0(%rbx)
48cfbb:
             e8 30 ed ff ff
                                 callq 48bcf0 <uw_frame_state_for>
                                 test %eax,%eax
48cfc0:
             85 c0
             0f 85 14 01 00 00
                                      48d0dc <uw init context 1+0x16c>
48cfc2:
                                 ine
48cfc8:
             48 83 3d 58 cf 22 00 cmpg $0x0,0x22cf58(%rip)
                                                                # 6b9f28 < .got+0x30>
48cfcf:
             00
             74 17
                                      48cfe9 <uw_init_context_1+0x79>
48cfd0:
                                 ie
             48 8d 35 97 ec ff ff
                                 lea
                                      -0x1369(%rip),%rsi
                                                             # 48bc70
48cfd2:
<init dwarf reg size table>
                                                               #6bd210
48cfd9:
             48 8d 3d 30 02 23 00 lea
                                      0x230230(%rip),%rdi
<once regsizes.9764>
48cfe0:
             e8 1b 30 b7 ff
                                 callq 0 < nl current LC CTYPE>
48cfe5:
             85 c0
                                 test %eax,%eax
48cfe7:
             74 09
                                 je
                                      48cff2 <uw_init_context_1+0x82>
48cfe9:
             80 3d 30 02 23 00 00 cmpb $0x0.0x230230(%rip)
                                                                 #6bd220
<dwarf_reg_size_table>
48cff0:
             74 6e
                                 ie
                                      48d060 < uw init context 1+0xf0>
48cff2:
             80 3d 2e 02 23 00 08 cmpb $0x8,0x23022e(%rip)
                                                                 #6bd227
<dwarf reg size table+0x7>
             0f 85 dd 00 00 00
48cff9:
                                      48d0dc <uw init context 1+0x16c>
                                 ine
             f6 83 c7 00 00 00 40 testb $0x40,0xc7(%rbx)
48cfff:
48d006:
             4c 89 6c 24 08
                                 mov
                                       %r13,0x8(%rsp)
             74 07
                                      48d014 <uw init context 1+0xa4>
48d00b:
                                 ie
             c6 83 df 00 00 00 00 movb $0x0,0xdf(%rbx)
48d00d:
48d014:
             48 8d 44 24 08
                                 lea 0x8(%rsp),%rax
48d019:
             48 89 ee
                                        %rbp,%rsi
                                 mov
             48 89 df
                                        %rbx,%rdi
48d01c:
                                 mov
48d01f:
             c7 84 24 50 01 00 00 movl $0x1,0x150(%rsp)
             01 00 00 00
48d026:
             48 c7 84 24 40 01 00 movg $0x7,0x140(%rsp)
48d02a:
48d031:
             00 07 00 00 00
48d036:
             48 89 43 38
                                       %rax,0x38(%rbx)
                                 mov
48d03a:
             48 c7 84 24 38 01 00 movq $0x0,0x138(%rsp)
48d041:
             00 00 00 00 00
48d046:
             e8 f5 fa ff ff
                                 callq 48cb40 <uw update context 1>
             4c 89 a3 98 00 00 00 mov
                                        %r12,0x98(%rbx)
48d04b:
48d052:
             48 81 c4 98 01 00 00 add
                                       $0x198,%rsp
48d059:
             5b
                                %rbx
                          pop
48d05a:
             5d
                                %rbp
                          pop
             41 5c
48d05b:
                                 pop
                                       %r12
             41 5d
48d05d:
                                 pop
                                       %r13
48d05f:
             с3
                          reta
             c6 05 b9 01 23 00 08 movb $0x8,0x2301b9(%rip)
                                                                 #6bd220
48d060:
<dwarf_reg_size_table>
```

```
48d067:
             c6 05 b3 01 23 00 08 movb $0x8.0x2301b3(%rip)
                                                                #6bd221
<dwarf reg size table+0x1>
 48d06e:
             c6 05 ad 01 23 00 08 movb $0x8,0x2301ad(%rip)
                                                                #6bd222
<dwarf reg size table+0x2>
 48d075:
             c6 05 a7 01 23 00 08 movb $0x8,0x2301a7(%rip)
                                                                #6bd223
<dwarf reg size table+0x3>
 48d07c:
             c6 05 a1 01 23 00 08 movb $0x8,0x2301a1(%rip)
                                                                #6bd224
<dwarf_reg_size_table+0x4>
 48d083:
             c6 05 9b 01 23 00 08 movb $0x8,0x23019b(%rip)
                                                                #6bd225
<dwarf reg size table+0x5>
             c6 05 95 01 23 00 08 movb $0x8,0x230195(%rip)
 48d08a:
                                                                #6bd226
<dwarf_reg size table+0x6>
 48d091:
             c6 05 8f 01 23 00 08 movb $0x8,0x23018f(%rip)
                                                                #6bd227
<dwarf reg size table+0x7>
             c6 05 89 01 23 00 08 movb $0x8,0x230189(%rip)
 48d098:
                                                                #6bd228
<dwarf reg size table+0x8>
 48d09f:
             c6 05 83 01 23 00 08 movb $0x8,0x230183(%rip)
                                                                #6bd229
<dwarf reg size table+0x9>
 48d0a6:
             c6 05 7d 01 23 00 08 movb $0x8,0x23017d(%rip)
                                                                #6bd22a
<dwarf_reg_size_table+0xa>
 48d0ad:
             c6 05 77 01 23 00 08 movb $0x8,0x230177(%rip)
                                                                #6bd22b
<dwarf_reg_size_table+0xb>
 48d0b4:
             c6 05 71 01 23 00 08 movb $0x8.0x230171(%rip)
                                                                # 6bd22c
<dwarf_reg_size_table+0xc>
             c6 05 6b 01 23 00 08 movb $0x8,0x23016b(%rip)
 48d0bb:
                                                                #6bd22d
<dwarf reg size table+0xd>
 48d0c2:
             c6 05 65 01 23 00 08 movb $0x8,0x230165(%rip)
                                                                # 6bd22e
<dwarf reg size table+0xe>
             c6 05 5f 01 23 00 08 movb $0x8,0x23015f(%rip)
 48d0c9:
                                                               # 6bd22f
<dwarf_reg_size_table+0xf>
             c6 05 59 01 23 00 08 movb $0x8,0x230159(%rip)
 48d0d0:
                                                                #6bd230
<dwarf_reg_size_table+0x10>
 48d0d7:
             e9 16 ff ff ff
                                jmpq 48cff2 <uw_init_context_1+0x82>
                                 callq 40e090 <abort>
 48d0dc:
             e8 af 0f f8 ff
                                 nopl 0x0(\%rax,\%rax,1)
 48d0e1:
             0f 1f 44 00 00
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48d0e6:
             00 00 00
 48d0ed:
00000000048d0f0 <uw update context>:
 48d0f0:
             55
                          push
                                %rbp
 48d0f1:
             53
                                %rbx
                          push
 48d0f2:
             48 89 f5
                                 mov
                                       %rsi,%rbp
             48 89 fb
 48d0f5:
                                       %rdi,%rbx
                                 mov
 48d0f8:
             48 83 ec 08
                                      $0x8,%rsp
                                 sub
 48d0fc:
             e8 3f fa ff ff
                                 callq 48cb40 <uw_update_context_1>
 48d101:
             48 8b 85 68 01 00 00 mov
                                       0x168(%rbp),%rax
                                       %rax,%rdx
 48d108:
             48 89 c2
                                 mov
             48 c1 e2 04
                                 shl $0x4,%rdx
 48d10b:
             83 7c 15 08 06
                                 cmpl $0x6,0x8(%rbp,%rdx,1)
 48d10f:
                                     48d160 <uw update context+0x70>
 48d114:
             74 4a
                                ie
             83 f8 11
                                       $0x11,%eax
 48d116:
                                 cmp
 48d119:
             7f 57
                                 jg
                                     48d172 <uw_update_context+0x82>
```

```
f6 83 c7 00 00 00 40 testb $0x40,0xc7(%rbx)
 48d11b:
 48d122:
             48 98
                                 clta
 48d124:
             48 8b 14 c3
                                 mov
                                       (%rbx,%rax,8),%rdx
 48d128:
             75 26
                                      48d150 <uw update context+0x60>
                                 ine
 48d12a:
             48 8d 0d ef 00 23 00 lea
                                      0x2300ef(%rip),%rcx
                                                              #6bd220
<dwarf reg size table>
 48d131:
             80 3c 01 08
                                 cmpb $0x8,(%rcx,%rax,1)
             75.3b
                                      48d172 <uw update context+0x82>
 48d135:
                                 ine
 48d137:
             48 8b 02
                                       (%rdx),%rax
                                 mov
 48d13a:
             48 89 83 98 00 00 00 mov
                                       %rax,0x98(%rbx)
                                 add
 48d141:
             48 83 c4 08
                                       $0x8,%rsp
             5b
                                %rbx
 48d145:
                          pop
             5d
                                %rbp
 48d146:
                          pop
 48d147:
             c3
                          retq
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48d148:
 48d14f:
             00
 48d150:
             80 bc 03 d8 00 00 00 cmpb $0x0,0xd8(%rbx,%rax,1)
             00
 48d157:
 48d158:
             74 d0
                                      48d12a <uw update context+0x3a>
                                 ie
 48d15a:
             48 89 d0
                                 mov
                                       %rdx,%rax
 48d15d:
             eb db
                                       48d13a <uw update context+0x4a>
                                 jmp
 48d15f:
             90
                          nop
 48d160:
             48 c7 83 98 00 00 00 movg $0x0,0x98(%rbx)
             00 00 00 00
 48d167:
                                       $0x8,%rsp
 48d16b:
             48 83 c4 08
                                 add
 48d16f:
             5b
                                %rbx
                          pop
                                %rbp
 48d170:
             5d
                          pop
 48d171:
             c3
                          retq
                                 callq 40e090 <abort>
 48d172:
             e8 19 0f f8 ff
 48d177:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
             00 00
 48d17e:
00000000048d180 <_Unwind_RaiseException_Phase2>:
 48d180:
             41 55
                                 push
                                       %r13
             41 54
 48d182:
                                 push
                                       %r12
 48d184:
             49 89 fc
                                 mov
                                       %rdi,%r12
                          push %rbp
 48d187:
             55
 48d188:
                          push %rbx
             53
 48d189:
             48 89 f3
                                 mov
                                       %rsi,%rbx
             48 81 ec 88 01 00 00 sub
 48d18c:
                                      $0x188,%rsp
 48d193:
             49 89 e5
                                       %rsp,%r13
                                 mov
 48d196:
             eb 44
                                 imp
                                       48d1dc < Unwind RaiseException Phase2+0x5c>
 48d198:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48d19f:
             00
 48d1a0:
             48 8b 84 24 50 01 00 mov
                                       0x150(%rsp),%rax
 48d1a7:
             00
             48 85 c0
 48d1a8:
                                 test %rax,%rax
             74 20
                                      48d1cd < Unwind_RaiseException_Phase2+0x4d>
 48d1ab:
                                 je
             89 ee
 48d1ad:
                                 mov
                                       %ebp,%esi
             49 89 d8
                                       %rbx,%r8
 48d1af:
                                 mov
             4c 89 e1
                                       %r12,%rcx
 48d1b2:
                                 mov
                                      $0x2,%esi
 48d1b5:
             83 ce 02
                                 or
```

```
48d1b8:
             49 8b 14 24
                                       (%r12),%rdx
                                 mov
 48d1bc:
             bf 01 00 00 00
                                       $0x1,%edi
                                 mov
 48d1c1:
             ff d0
                          callq *%rax
 48d1c3:
             83 f8 07
                                       $0x7,%eax
                                 cmp
             74 4b
                                      48d213 < Unwind RaiseException Phase2+0x93>
 48d1c6:
                                 ie
 48d1c8:
             83 f8 08
                                       $0x8,%eax
                                 cmp
 48d1cb:
             75 41
                                 ine
                                      48d20e < _Unwind_RaiseException_Phase2+0x8e>
             85 ed
 48d1cd:
                                 test %ebp,%ebp
 48d1cf:
             75 50
                                      48d221 < Unwind RaiseException Phase2+0xa1>
                                 ine
 48d1d1:
             4c 89 ee
                                 mov
                                       %r13,%rsi
                                       %rbx,%rdi
 48d1d4:
             48 89 df
                                 mov
             e8 14 ff ff ff
                                 callq 48d0f0 <uw update context>
 48d1d7:
 48d1dc:
             4c 89 ee
                                       %r13,%rsi
                                 mov
 48d1df:
             48 89 df
                                       %rbx,%rdi
                                 mov
 48d1e2:
             31 ed
                                      %ebp,%ebp
                                 xor
             e8 07 eb ff ff
                                 callq 48bcf0 <uw frame state for>
 48d1e4:
 48d1e9:
             48 8b 93 c0 00 00 00 mov
                                       0xc0(%rbx), %rdx
 48d1f0:
             48 8b 8b 90 00 00 00 mov
                                       0x90(%rbx),%rcx
                                      $0x3f,%rdx
 48d1f7:
             48 c1 ea 3f
                                 shr
 48d1fb:
             48 29 d1
                                 sub
                                      %rdx,%rcx
 48d1fe:
             49 39 4c 24 18
                                       %rcx,0x18(%r12)
                                 cmp
                                 sete %bpl
 48d203:
             40 0f 94 c5
 48d207:
             c1 e5 02
                                 shl
                                      $0x2.%ebp
 48d20a:
             85 c0
                                 test
                                      %eax,%eax
 48d20c:
             74 92
                                      48d1a0 < Unwind_RaiseException_Phase2+0x20>
                                 ie
 48d20e:
             b8 02 00 00 00
                                 mov
                                       $0x2,%eax
             48 81 c4 88 01 00 00 add
                                       $0x188,%rsp
 48d213:
 48d21a:
             5b
                                %rbx
                          pop
 48d21b:
             5d
                                %rbp
                          pop
 48d21c:
             41 5c
                                       %r12
                                 pop
             41 5d
 48d21e:
                                 pop
                                       %r13
 48d220:
             с3
                          reta
 48d221:
             e8 6a 0e f8 ff
                                 callq 40e090 <abort>
 48d226:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48d22d:
             00 00 00
00000000048d230 < _Unwind_ForcedUnwind_Phase2>:
             41 57
 48d230:
                                 push %r15
             41 56
 48d232:
                                 push
                                       %r14
 48d234:
             41 55
                                       %r13
                                 push
 48d236:
             41 54
                                       %r12
                                 push
 48d238:
             49 89 f4
                                 mov
                                       %rsi,%r12
 48d23b:
             55
                          push %rbp
 48d23c:
             53
                          push
                                %rbx
 48d23d:
             48 89 fd
                                 mov
                                       %rdi,%rbp
 48d240:
             48 81 ec 88 01 00 00 sub
                                      $0x188,%rsp
                                 mov
 48d247:
             4c 8b 77 10
                                       0x10(%rdi),%r14
             4c 8b 7f 18
                                       0x18(%rdi),%r15
 48d24b:
                                 mov
             49 89 e5
 48d24f:
                                 mov
                                       %rsp,%r13
             eb 58
                                       48d2ac < Unwind ForcedUnwind Phase2+0x7c>
 48d252:
                                 jmp
             0f 1f 40 00
 48d254:
                                 nopl 0x0(\%rax)
                                       %r15,%r9
 48d258:
             4d 89 f9
                                 mov
```

```
48d25b:
            4d 89 e0
                                      %r12,%r8
                                mov
48d25e:
            48 89 e9
                                      %rbp,%rcx
                                mov
48d261:
            be 0a 00 00 00
                                      $0xa,%esi
                                mov
48d266:
            bf 01 00 00 00
                                      $0x1.%edi
                                mov
                                callq *%r14
48d26b:
            41 ff d6
48d26e:
            85 c0
                                test %eax,%eax
48d270:
            75 73
                                jne
                                     48d2e5 < _Unwind_ForcedUnwind_Phase2+0xb5>
48d272:
            48 8b 84 24 50 01 00 mov
                                      0x150(%rsp), %rax
48d279:
            00
                                test %rax,%rax
48d27a:
            48 85 c0
            74 22
                                    48d2a1 < Unwind ForcedUnwind Phase2+0x71>
48d27d:
                                je
48d27f:
            4d 89 e0
                                      %r12.%r8
                                mov
48d282:
            48 89 e9
                                      %rbp,%rcx
                                mov
48d285:
            48 8b 55 00
                                      0x0(%rbp), %rdx
                                mov
                                      $0xa,%esi
48d289:
            be 0a 00 00 00
                                mov
            bf 01 00 00 00
                                      $0x1,%edi
48d28e:
                                mov
48d293:
            ff d0
                         callq *%rax
48d295:
            83 f8 07
                                      $0x7,%eax
                                cmp
48d298:
            89 c3
                                mov
                                      %eax,%ebx
48d29a:
            74 4e
                                je
                                    48d2ea <_Unwind_ForcedUnwind_Phase2+0xba>
48d29c:
            83 f8 08
                                      $0x8,%eax
                                cmp
48d29f:
            75 44
                                jne
                                     48d2e5 < _Unwind_ForcedUnwind_Phase2+0xb5>
48d2a1:
            4c 89 ee
                                mov
                                      %r13.%rsi
            4c 89 e7
                                      %r12.%rdi
48d2a4:
                                mov
            e8 44 fe ff ff
48d2a7:
                                callq 48d0f0 <uw_update_context>
48d2ac:
            4c 89 ee
                                mov
                                      %r13,%rsi
            4c 89 e7
                                      %r12,%rdi
48d2af:
                                mov
                                callq 48bcf0 <uw frame state for>
48d2b2:
            e8 39 ea ff ff
                                test %eax,%eax
48d2b7:
            85 c0
48d2b9:
            89 c3
                                mov
                                      %eax,%ebx
                                    48d2c2 < Unwind ForcedUnwind Phase2+0x92>
48d2bb:
            74 05
                                je
            83 f8 05
48d2bd:
                                      $0x5,%eax
                                cmp
48d2c0:
            75 23
                                ine
                                    48d2e5 < Unwind ForcedUnwind Phase2+0xb5>
48d2c2:
            83 fb 05
                                      $0x5,%ebx
                                cmp
48d2c5:
            48 8b 55 00
                                mov
                                      0x0(\%rbp),\%rdx
48d2c9:
            75 8d
                                ine
                                     48d258 < Unwind ForcedUnwind Phase2+0x28>
48d2cb:
            4d 89 f9
                                      %r15,%r9
                                mov
                                      %r12,%r8
48d2ce:
            4d 89 e0
                                mov
48d2d1:
            48 89 e9
                                      %rbp,%rcx
                                mov
48d2d4:
            be 1a 00 00 00
                                      $0x1a,%esi
                                mov
48d2d9:
            bf 01 00 00 00
                                      $0x1,%edi
                                mov
                                callq *%r14
48d2de:
            41 ff d6
48d2e1:
            85 c0
                                test %eax.%eax
            74 05
                                    48d2ea <_Unwind_ForcedUnwind_Phase2+0xba>
48d2e3:
                                je
48d2e5:
            bb 02 00 00 00
                                mov
                                      $0x2,%ebx
            48 81 c4 88 01 00 00 add
48d2ea:
                                     $0x188,%rsp
            89 d8
48d2f1:
                                      %ebx,%eax
                                mov
48d2f3:
            5b
                               %rbx
                         pop
48d2f4:
            5d
                         pop
                               %rbp
            41 5c
48d2f5:
                                     %r12
                                pop
            41 5d
                                     %r13
48d2f7:
                                pop
            41 5e
48d2f9:
                                pop
                                     %r14
```

```
48d2fd:
             с3
                           reta
 48d2fe:
             66 90
                                 xchg %ax,%ax
00000000048d300 <uw install context 1>:
 48d300:
             48 83 ec 18
                                       $0x18,%rsp
                                 sub
 48d304:
             f6 86 c7 00 00 00 40 testb $0x40,0xc7(%rsi)
 48d30b:
             49 89 f9
                                        %rdi.%r9
                                 mov
 48d30e:
             49 89 f0
                                        %rsi,%r8
                                 mov
 48d311:
             0f 84 a9 00 00 00
                                      48d3c0 <uw_install_context_1+0xc0>
                                 je
             80 be df 00 00 00 00 cmpb $0x0,0xdf(%rsi)
 48d317:
             0f 84 9c 00 00 00
                                      48d3c0 <uw install context 1+0xc0>
 48d31e:
                                 ie
 48d324:
                                       %eax,%eax
             31 c0
                                 xor
 48d326:
             4c 8d 15 f3 fe 22 00 lea
                                      0x22fef3(%rip),%r10
                                                               # 6bd220
<dwarf_reg_size_table>
 48d32d:
             eb 22
                                       48d351 <uw install context 1+0x51>
                                 jmp
 48d32f:
             90
                           nop
 48d330:
             48 85 d2
                                 test %rdx,%rdx
 48d333:
             74 0e
                                      48d343 <uw install context 1+0x43>
 48d335:
             41 80 3c 02 08
                                 cmpb $0x8,(%r10,%rax,1)
 48d33a:
             0f 85 7a 01 00 00
                                       48d4ba <uw_install_context_1+0x1ba>
                                 ine
 48d340:
             48 89 32
                                 mov
                                        %rsi,(%rdx)
 48d343:
             48 83 c0 01
                                 add
                                       $0x1.%rax
                                        $0x11,%rax
 48d347:
             48 83 f8 11
                                 cmp
 48d34b:
             0f 84 ef 00 00 00
                                      48d440 <uw_install_context_1+0x140>
                                 ie
 48d351:
             41 80 bc 01 d8 00 00 cmpb $0x0,0xd8(%r9,%rax,1)
             00 00
 48d358:
             49 8b 14 c1
 48d35a:
                                        (%r9,%rax,8),%rdx
                                 mov
                                        (%r8,%rax,8),%rsi
 48d35e:
             49 8b 34 c0
                                 mov
 48d362:
             0f 85 52 01 00 00
                                      48d4ba <uw_install_context_1+0x1ba>
                                 jne
             41 80 bc 00 d8 00 00 cmpb $0x0,0xd8(%r8,%rax,1)
 48d368:
             00 00
 48d36f:
 48d371:
             75 bd
                                      48d330 <uw install context 1+0x30>
 48d373:
             48 85 f6
                                 test %rsi,%rsi
                                 setne %dil
 48d376:
             40 0f 95 c7
 48d37a:
             48 85 d2
                                 test %rdx,%rdx
 48d37d:
                                 setne %cl
             0f 95 c1
 48d380:
             40 84 cf
                                 test %cl.%dil
 48d383:
             74 be
                                      48d343 <uw_install_context_1+0x43>
 48d385:
             48 39 f2
                                        %rsi,%rdx
                                 cmp
 48d388:
             74 b9
                                      48d343 <uw_install_context_1+0x43>
                                 je
 48d38a:
             41 0f b6 0c 02
                                 movzbl (%r10,%rax,1),%ecx
 48d38f:
             83 f9 08
                                       $0x8,%ecx
                                 cmp
 48d392:
             73 74
                                      48d408 <uw_install_context_1+0x108>
                                 jae
 48d394:
             f6 c1 04
                                 test $0x4,%cl
 48d397:
             0f 85 0a 01 00 00
                                      48d4a7 <uw install context 1+0x1a7>
                                 ine
 48d39d:
             85 c9
                                 test %ecx,%ecx
                                      48d343 <uw_install_context_1+0x43>
 48d39f:
             74 a2
             0f b6 3e
 48d3a1:
                                 movzbl (%rsi),%edi
 48d3a4:
             f6 c1 02
                                 test $0x2,%cl
                                        %dil,(%rdx)
 48d3a7:
             40 88 3a
                                 mov
 48d3aa:
             74 97
                                      48d343 <uw_install_context_1+0x43>
                                 je
```

%r15

pop

48d2fb:

41 5f

```
89 c9
48d3ac:
                                       %ecx,%ecx
48d3ae:
             0f b7 74 0e fe
                                 movzwl -0x2(%rsi,%rcx,1),%esi
48d3b3:
             66 89 74 0a fe
                                 mov
                                       %si,-0x2(%rdx,%rcx,1)
48d3b8:
             eb 89
                                 imp 48d343 <uw install context 1+0x43>
48d3ba:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48d3c0:
             49 83 78 38 00
                                 cmpq $0x0,0x38(\%r8)
48d3c5:
             0f 85 59 ff ff ff
                                 jne 48d324 <uw_install_context_1+0x24>
             80 3d 55 fe 22 00 08 cmpb $0x8,0x22fe55(%rip)
48d3cb:
                                                                #6bd227
<dwarf reg size table+0x7>
             49 8b 80 90 00 00 00 mov
                                       0x90(\%r8),\%rax
48d3d2:
48d3d9:
             0f 85 db 00 00 00
                                      48d4ba <uw install context 1+0x1ba>
                                 ine
             41 f6 80 c7 00 00 00 testb $0x40,0xc7(%r8)
48d3df:
48d3e6:
             40
48d3e7:
             48 89 44 24 08
                                 mov
                                       %rax,0x8(%rsp)
             74 08
                                      48d3f6 <uw_install_context_1+0xf6>
48d3ec:
             41 c6 80 df 00 00 00 movb $0x0,0xdf(%r8)
48d3ee:
48d3f5:
             00
48d3f6:
             48 8d 44 24 08
                                      0x8(\%rsp),\%rax
                                 lea
48d3fb:
             49 89 40 38
                                 mov
                                       %rax,0x38(%r8)
48d3ff:
             e9 20 ff ff ff
                                 impq 48d324 <uw_install_context_1+0x24>
48d404:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
48d408:
             48 8b 3e
                                 mov
                                       (%rsi),%rdi
48d40b:
             48 83 c0 01
                                 add
                                      $0x1.%rax
             48 89 3a
                                       %rdi,(%rdx)
48d40f:
                                 mov
48d412:
             89 cf
                                       %ecx,%edi
                                 mov
48d414:
             4c 8b 5c 3e f8
                                       -0x8(%rsi,%rdi,1),%r11
                                 mov
             4c 89 5c 3a f8
                                       %r11,-0x8(%rdx,%rdi,1)
48d419:
                                 mov
             48 8d 7a 08
                                 lea 0x8(%rdx),%rdi
48d41e:
             48 83 e7 f8
                                       $0xfffffffffff8,%rdi
48d422:
                                 and
48d426:
             48 29 fa
                                       %rdi,%rdx
                                 sub
48d429:
             01 d1
                                      %edx,%ecx
                                 add
48d42b:
             48 29 d6
                                 sub
                                       %rdx,%rsi
             c1 e9 03
48d42e:
                                 shr
                                      $0x3,%ecx
48d431:
             48 83 f8 11
                                       $0x11,%rax
                                 cmp
                                       %ecx,%ecx
48d435:
             89 c9
                                 mov
48d437:
             f3 48 a5
                                 rep movsq %ds:(%rsi),%es:(%rdi)
48d43a:
             0f 85 11 ff ff ff
                                      48d351 <uw_install_context_1+0x51>
                                 ine
48d440:
             31 c0
                                 xor
                                      %eax,%eax
48d442:
             41 f6 81 c7 00 00 00 testb $0x40,0xc7(%r9)
             40
48d449:
                                      48d460 <uw_install_context_1+0x160>
48d44a:
             75 14
                                 ine
48d44c:
             49 83 79 38 00
                                 cmpg $0x0.0x38(\%r9)
48d451:
             74 1d
                                 je
                                      48d470 < uw install context 1+0x170>
48d453:
             48 83 c4 18
                                 add
                                       $0x18,%rsp
48d457:
             c3
                          retq
48d458:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48d45f:
             00
             41 80 b9 df 00 00 00 cmpb $0x0,0xdf(%r9)
48d460:
             00
48d467:
             74 e2
48d468:
                                      48d44c <uw install context 1+0x14c>
             48 83 c4 18
                                 add
48d46a:
                                       $0x18,%rsp
48d46e:
             c3
                          retq
```

```
48d46f:
             90
                          nop
             41 f6 80 c7 00 00 00 testb $0x40,0xc7(%r8)
 48d470:
 48d477:
             40
 48d478:
             49 8b 40 38
                                 mov
                                       0x38(%r8),%rax
 48d47c:
             74 0a
                                      48d488 <uw install context 1+0x188>
                                 je
 48d47e:
             41 80 b8 df 00 00 00 cmpb $0x0,0xdf(%r8)
 48d485:
             00
             75.0c
                                      48d494 <uw_install_context_1+0x194>
 48d486:
                                 ine
 48d488:
             80 3d 98 fd 22 00 08 cmpb $0x8,0x22fd98(%rip)
                                                                #6bd227
<dwarf_reg_size_table+0x7>
             75 29
 48d48f:
                                 ine
                                      48d4ba <uw_install_context_1+0x1ba>
 48d491:
             48 8b 00
                                 mov
                                       (%rax),%rax
 48d494:
             49 2b 81 90 00 00 00 sub
                                      0x90(%r9),%rax
 48d49b:
             49 03 80 d0 00 00 00 add
                                       0xd0(%r8),%rax
 48d4a2:
             48 83 c4 18
                                       $0x18,%rsp
                                 add
 48d4a6:
             с3
                          retq
 48d4a7:
             8b 3e
                                       (%rsi),%edi
                                 mov
48d4a9:
             89 c9
                                       %ecx,%ecx
                                 mov
 48d4ab:
             89 3a
                                       %edi,(%rdx)
                                 mov
 48d4ad:
             8b 74 0e fc
                                 mov
                                       -0x4(%rsi,%rcx,1),%esi
 48d4b1:
             89 74 0a fc
                                       %esi,-0x4(%rdx,%rcx,1)
                                 mov
 48d4b5:
             e9 89 fe ff ff
                                 impq 48d343 <uw_install_context_1+0x43>
 48d4ba:
             e8 d1 0b f8 ff
                                 calla 40e090 <abort>
 48d4bf:
             90
                          nop
00000000048d4c0 < Unwind GetGR>:
 48d4c0:
             83 fe 11
                                       $0x11,%esi
 48d4c3:
             7f 37
                                      48d4fc < Unwind GetGR+0x3c>
                                 jg
             f6 87 c7 00 00 00 40 testb $0x40,0xc7(%rdi)
 48d4c5:
 48d4cc:
             48 63 f6
                                 movslq %esi,%rsi
 48d4cf:
             48 8b 04 f7
                                 mov
                                       (%rdi,%rsi,8),%rax
                                      48d4f0 < Unwind_GetGR+0x30>
 48d4d3:
             75 1b
                                 jne
 48d4d5:
             48 8d 15 44 fd 22 00 lea
                                      0x22fd44(%rip),%rdx
                                                               #6bd220
<dwarf_reg_size_table>
             80 3c 32 08
                                 cmpb $0x8,(%rdx,%rsi,1)
 48d4dc:
 48d4e0:
             75 1a
                                      48d4fc < Unwind GetGR+0x3c>
             48 8b 00
                                       (%rax),%rax
 48d4e2:
                                 mov
 48d4e5:
             с3
                          reta
 48d4e6:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48d4ed:
             00 00 00
48d4f0:
             80 bc 37 d8 00 00 00 cmpb $0x0,0xd8(%rdi,%rsi,1)
 48d4f7:
             00
 48d4f8:
             74 db
                                      48d4d5 < Unwind GetGR+0x15>
                                 je
 48d4fa:
             f3 c3
                                 repz retq
 48d4fc:
             48 83 ec 08
                                 sub
                                      $0x8,%rsp
 48d500:
             e8 8b 0b f8 ff
                                 callq 40e090 <abort>
 48d505:
             90
                          nop
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48d506:
             00 00 00
 48d50d:
00000000048d510 < Unwind GetCFA>:
 48d510:
             48 8b 87 90 00 00 00 mov 0x90(%rdi),%rax
```

```
48d517:
             c3
                          retq
 48d518:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48d51f:
             00
000000000048d520 < Unwind SetGR>:
 48d520:
             83 fe 11
                                       $0x11,%esi
                                 cmp
 48d523:
             7f 30
                                      48d555 <_Unwind_SetGR+0x35>
                                 jg
             f6 87 c7 00 00 00 40 testb $0x40,0xc7(%rdi)
 48d525:
             48 63 f6
                                 movslq %esi,%rsi
 48d52c:
 48d52f:
             74 0f
                                     48d540 < Unwind SetGR+0x20>
                                 je
             80 bc 37 d8 00 00 00 cmpb $0x0,0xd8(%rdi,%rsi,1)
 48d531:
 48d538:
 48d539:
             74 05
                                     48d540 < Unwind SetGR+0x20>
                                 je
 48d53b:
             48 89 14 f7
                                       %rdx,(%rdi,%rsi,8)
                                 mov
 48d53f:
             c3
                          retq
             48 8d 0d d9 fc 22 00 lea 0x22fcd9(%rip),%rcx
 48d540:
                                                              #6bd220
<dwarf_reg_size_table>
 48d547:
             48 8b 04 f7
                                       (%rdi,%rsi,8),%rax
                                 mov
                                 cmpb $0x8,(%rcx,%rsi,1)
 48d54b:
             80 3c 31 08
 48d54f:
             75 04
                                 ine
                                     48d555 <_Unwind_SetGR+0x35>
 48d551:
             48 89 10
                                       %rdx,(%rax)
                                 mov
 48d554:
             с3
                          retq
 48d555:
             48 83 ec 08
                                 sub
                                      $0x8,%rsp
                                 callq 40e090 <abort>
 48d559:
             e8 32 0b f8 ff
 48d55e:
             66 90
                                 xchg %ax,%ax
00000000048d560 < Unwind GetIP>:
             48 8b 87 98 00 00 00 mov
 48d560:
                                       0x98(%rdi),%rax
 48d567:
             c3
                          retq
 48d568:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48d56f:
             00
00000000048d570 < Unwind GetIPInfo>:
 48d570:
             48 8b 87 c0 00 00 00 mov
                                       0xc0(%rdi),%rax
                                      $0x3f,%rax
 48d577:
             48 c1 f8 3f
                                 sar
 48d57b:
             83 e0 01
                                 and
                                      $0x1,%eax
                                       %eax,(%rsi)
 48d57e:
             89 06
                                 mov
             48 8b 87 98 00 00 00 mov
                                       0x98(%rdi),%rax
 48d580:
 48d587:
             c3
                          reta
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48d588:
 48d58f:
             00
00000000048d590 < Unwind SetIP>:
             48 89 b7 98 00 00 00 mov
 48d590:
                                       %rsi,0x98(%rdi)
 48d597:
                          retq
 48d598:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48d59f:
             00
```

## 00000000048d5a0 <\_Unwind\_GetLanguageSpecificData>:

48d5a0: 48 8b 87 a0 00 00 00 mov 0xa0(%rdi),%rax

48d5a7: c3 retq

48d5a8: 0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)

48d5af: 00 00000000048d5b0 < Unwind GetRegionStart>: 48d5b0: 48 8b 87 b8 00 00 00 mov 0xb8(%rdi),%rax 48d5b7: с3 reta 0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1) 48d5b8: 48d5bf: 00000000048d5c0 < \_Unwind\_FindEnclosingFunction>: 48d5c0: 48 83 ec 28 sub \$0x28,%rsp 48 83 ef 01 \$0x1,%rdi 48d5c4: sub 48 89 e6 %rsp,%rsi 48d5c8: mov e8 10 25 00 00 callq 48fae0 < Unwind Find FDE> 48d5cb: 48d5d0: 48 85 c0 test %rax,%rax 74 0b 48d5d3: 48d5e0 < Unwind\_FindEnclosingFunction+0x20> je 48 8b 44 24 10 48d5d5: 0x10(%rsp), %raxmov 48d5da: 48 83 c4 28 add \$0x28,%rsp 48d5de: **c**3 retq 48d5df: 90 nop 48d5e0: 31 c0 xor %eax,%eax 48d5e2: eb f6 48d5da < Unwind FindEnclosingFunction+0x1a> jmp 48d5e4: 66 90 xchg %ax,%ax 66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1) 48d5e6: 48d5ed: 00 00 00 00000000048d5f0 < Unwind GetDataRelBase>: 48d5f0: 48 8b 87 b0 00 00 00 mov 0xb0(%rdi),%rax 48d5f7: **c**3 retq 0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1) 48d5f8: 48d5ff: 00 00000000048d600 < \_Unwind\_GetTextRelBase>: 48d600: 48 8b 87 a8 00 00 00 mov 0xa8(%rdi),%rax 48d607: **c**3 retq 0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1) 48d608: 48d60f: 00 00000000048d610 < frame state for>: 48d610: 55 push %rbp 53 48d611: push %rbx 48d612: 31 c0 %eax,%eax xor 48d614: 49 89 f8 %rdi,%r8 mov 48d617: b9 1e 00 00 00 \$0x1e,%ecx mov 48d61c: 48 89 f5 %rsi,%rbp mov 48d61f: 48 81 ec 78 02 00 00 sub \$0x278,%rsp 48d626: 49 83 c0 01 add \$0x1,%r8 48d62a: 48 89 e2 %rsp,%rdx mov 48d62d: 48 8d 9c 24 f0 00 00 lea 0xf0(%rsp),%rbx48d634: 00 48 89 d7 %rdx,%rdi 48d635: mov f3 48 ab rep stos %rax,%es:(%rdi) 48d638:

48d63b:

48 89 de

mov

%rbx,%rsi

```
48d63e:
            48 b8 00 00 00 00 00 movabs $0x400000000000000,%rax
48d645:
            00 00 40
48d648:
            48 89 d7
                                       %rdx,%rdi
                                mov
48d64b:
            48 89 84 24 c0 00 00 mov
                                       %rax,0xc0(%rsp)
            00
48d652:
48d653:
            4c 89 84 24 98 00 00 mov
                                      %r8,0x98(%rsp)
48d65a:
            00
            e8 90 e6 ff ff
                                callq 48bcf0 <uw frame state for>
48d65b:
            85 c0
                                test %eax,%eax
48d660:
                                     48d710 < __frame_state_for+0x100>
48d662:
            0f 85 a8 00 00 00
                                jne
            83 bc 24 30 02 00 00 cmpl $0x2,0x230(%rsp)
48d668:
48d66f:
            0f 84 9a 00 00 00
                                     48d710 < frame state for +0x100 >
48d670:
                                je
            48 89 de
                                      %rbx,%rsi
48d676:
                                mov
48d679:
            31 d2
                                     %edx,%edx
                                xor
                                      48d69c < frame state for+0x8c>
48d67b:
            eb 1f
                                jmp
                                nopl (%rax)
48d67d:
            0f 1f 00
            80 f9 02
                                      $0x2,%cl
48d680:
                                cmp
48d683:
            74 26
                                     48d6ab < frame state for+0x9b>
                                je
48d685:
            48 c7 44 d5 20 00 00 movq $0x0,0x20(%rbp,%rdx,8)
48d68c:
            00 00
48d68e:
            48 83 c2 01
                                add
                                      $0x1,%rdx
48d692:
            48 83 c6 10
                                add
                                      $0x10.%rsi
48d696:
            48 83 fa 12
                                cmp
                                      $0x12,%rdx
            74 25
                                     48d6c1 < __frame_state_for+0xb1>
48d69a:
                                je
48d69c:
            8b 4e 08
                                      0x8(%rsi),%ecx
                                mov
            80 f9 01
                                      $0x1,%cl
48d69f:
                                cmp
                                      %cl,0xb4(%rbp,%rdx,1)
48d6a2:
            88 8c 15 b4 00 00 00 mov
                                     48d680 < __frame_state_for+0x70>
48d6a9:
            75 d5
                                jne
48d6ab:
            48 8b 06
                                      (%rsi),%rax
                                mov
                                      $0x10,%rsi
48d6ae:
            48 83 c6 10
                                add
            48 89 44 d5 20
                                      %rax,0x20(%rbp,%rdx,8)
48d6b2:
                                mov
48d6b7:
            48 83 c2 01
                                add
                                      $0x1,%rdx
48d6bb:
            48 83 fa 12
                                      $0x12,%rdx
                                cmp
                                jne
48d6bf:
            75 db
                                     48d69c < __frame_state_for+0x8c>
48d6c1:
            48 8b 84 24 18 02 00 mov
                                      0x218(%rsp),%rax
48d6c8:
            00
48d6c9:
            48 89 45 10
                                       %rax,0x10(%rbp)
                                mov
48d6cd:
            48 8b 84 24 20 02 00 mov
                                      0x220(%rsp),%rax
48d6d4:
            00
                                      %ax,0xb0(%rbp)
            66 89 85 b0 00 00 00 mov
48d6d5:
48d6dc:
            48 8b 84 24 58 02 00 mov
                                      0x258(%rsp),%rax
48d6e3:
            00
            66 89 85 b2 00 00 00 mov
48d6e4:
                                       %ax,0xb2(%rbp)
48d6eb:
            48 8b 84 24 d0 00 00 mov
                                      0xd0(%rsp),%rax
48d6f2:
            00
48d6f3:
            48 89 45 18
                                       %rax,0x18(%rbp)
                                mov
            48 8b 84 24 68 02 00 mov
48d6f7:
                                      0x268(%rsp),%rax
48d6fe:
            00
48d6ff:
            48 89 45 08
                                      %rax,0x8(%rbp)
                                mov
            48 81 c4 78 02 00 00 add
                                      $0x278,%rsp
48d703:
48d70a:
            48 89 e8
                                      %rbp,%rax
                                mov
```

```
48d70d:
             5b
                                %rbx
                           pop
 48d70e:
             5d
                           pop
                                %rbp
 48d70f:
             c3
                           retq
 48d710:
             48 81 c4 78 02 00 00 add
                                       $0x278,%rsp
             31 c0
                                       %eax,%eax
 48d717:
                                 xor
 48d719:
             5b
                                %rbx
                           pop
 48d71a:
             5d
                                %rbp
                           pop
 48d71b:
             с3
                           retq
 48d71c:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
00000000048d720 <_Unwind_DebugHook>:
 48d720:
             с3
                           reta
 48d721:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48d726:
 48d72d:
             00 00 00
00000000048d730 <_Unwind_RaiseException>:
 48d730:
                           push %rbp
             55
 48d731:
             48 89 e5
                                        %rsp,%rbp
                                 mov
 48d734:
             41 57
                                 push %r15
 48d736:
             41 56
                                       %r14
                                 push
 48d738:
             41 55
                                 push
                                       %r13
 48d73a:
             41 54
                                 push %r12
             4c 8d b5 60 fc ff ff
 48d73c:
                                 lea
                                      -0x3a0(%rbp),%r14
 48d743:
             53
                                 %rbx
                           push
 48d744:
             52
                                 %rdx
                           push
             48 8d 75 10
                                      0x10(%rbp),%rsi
 48d745:
                                 lea
 48d749:
             50
                                 %rax
                           push
             49 89 fc
 48d74a:
                                 mov
                                        %rdi,%r12
 48d74d:
             4c 89 f7
                                        %r14,%rdi
                                 mov
             4c 8d ad 40 fe ff ff
 48d750:
                                      -0x1c0(%rbp), %r13
                                 lea
             48 8d 9d 50 fd ff ff
 48d757:
                                 lea
                                      -0x2b0(%rbp), %rbx
 48d75e:
             48 81 ec 68 03 00 00 sub
                                       $0x368,%rsp
 48d765:
             48 8b 55 08
                                        0x8(%rbp),%rdx
                                 mov
                                  callq 48cf70 <uw_init_context_1>
 48d769:
             e8 02 f8 ff ff
 48d76e:
             66 0f 6f 85 60 fc ff
                                 movdga -0x3a0(%rbp),%xmm0
 48d775:
             0f 29 85 50 fd ff ff
                                 movaps \%xmm0,-0x2b0(\%rbp)
 48d776:
 48d77d:
             66 0f 6f 85 70 fc ff
                                 movdga -0x390(%rbp),%xmm0
 48d784:
             ff
 48d785:
             0f 29 85 60 fd ff ff
                                 movaps %xmm0,-0x2a0(%rbp)
 48d78c:
             66 0f 6f 85 80 fc ff
                                 movdga -0x380(%rbp),%xmm0
 48d793:
             ff
             0f 29 85 70 fd ff ff
                                 movaps %xmm0,-0x290(%rbp)
 48d794:
 48d79b:
             66 0f 6f 85 90 fc ff
                                 movdqa -0x370(%rbp),%xmm0
 48d7a2:
 48d7a3:
             0f 29 85 80 fd ff ff
                                 movaps %xmm0,-0x280(%rbp)
             66 0f 6f 85 a0 fc ff
 48d7aa:
                                  movdqa -0x360(%rbp),%xmm0
 48d7b1:
             ff
             0f 29 85 90 fd ff ff
 48d7b2:
                                  movaps \%xmm0,-0x270(\%rbp)
             66 0f 6f 85 b0 fc ff
                                 movdga -0x350(%rbp),%xmm0
 48d7b9:
 48d7c0:
             ff
```

```
48d7c1:
            0f 29 85 a0 fd ff ff
                                movaps \%xmm0,-0x260(\%rbp)
48d7c8:
            66 0f 6f 85 c0 fc ff
                                movdga -0x340(%rbp),%xmm0
48d7cf:
            ff
48d7d0:
            0f 29 85 b0 fd ff ff
                                movaps %xmm0,-0x250(%rbp)
48d7d7:
            66 0f 6f 85 d0 fc ff
                                movdga -0x330(%rbp),%xmm0
48d7de:
48d7df:
            0f 29 85 c0 fd ff ff
                                movaps %xmm0,-0x240(%rbp)
            66 0f 6f 85 e0 fc ff
                                movdga -0x320(%rbp),%xmm0
48d7e6:
48d7ed:
            0f 29 85 d0 fd ff ff
48d7ee:
                                movaps \%xmm0,-0x230(\%rbp)
            66 0f 6f 85 f0 fc ff
                                movdqa -0x310(%rbp),%xmm0
48d7f5:
48d7fc:
48d7fd:
            0f 29 85 e0 fd ff ff
                                movaps %xmm0,-0x220(%rbp)
            66 0f 6f 85 00 fd ff
48d804:
                                movdqa -0x300(%rbp),%xmm0
48d80b:
            0f 29 85 f0 fd ff ff
                                movaps %xmm0,-0x210(%rbp)
48d80c:
48d813:
            66 0f 6f 85 10 fd ff
                                movdga -0x2f0(%rbp),%xmm0
            ff
48d81a:
            0f 29 85 00 fe ff ff
                                movaps \%xmm0,-0x200(\%rbp)
48d81b:
48d822:
            66 0f 6f 85 20 fd ff
                                movdga -0x2e0(%rbp),%xmm0
48d829:
            ff
            0f 29 85 10 fe ff ff
48d82a:
                                movaps \%xmm0,-0x1f0(\%rbp)
48d831:
            66 0f 6f 85 30 fd ff
                                movdga -0x2d0(%rbp),%xmm0
48d838:
            ff
            0f 29 85 20 fe ff ff
                                movaps \%xmm0,-0x1e0(\%rbp)
48d839:
48d840:
            66 0f 6f 85 40 fd ff
                                movdqa -0x2c0(%rbp),%xmm0
48d847:
            ff
48d848:
            0f 29 85 30 fe ff ff
                                movaps \%xmm0,-0x1d0(\%rbp)
                                      48d890 < _Unwind_RaiseException+0x160>
48d84f:
            eb 3f
                                jmp
48d851:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
                                test %eax,%eax
48d858:
            85 c0
            75 64
                                     48d8c0 < _Unwind_RaiseException+0x190>
48d85a:
                                ine
48d85c:
            48 8b 45 90
                                mov
                                       -0x70(%rbp),%rax
48d860:
            48 85 c0
                                test %rax,%rax
                                     48d885 < Unwind_RaiseException+0x155>
48d863:
            74 20
                                je
48d865:
            49 89 d8
                                mov
                                       %rbx,%r8
48d868:
            4c 89 e1
                                       %r12,%rcx
                                mov
            49 8b 14 24
                                       (%r12),%rdx
48d86b:
                                mov
48d86f:
            be 01 00 00 00
                                       $0x1,%esi
                                mov
            bf 01 00 00 00
48d874:
                                       $0x1,%edi
                                mov
                          callq *%rax
48d879:
            ff d0
48d87b:
            83 f8 06
                                       $0x6,%eax
                                cmp
48d87e:
            74 50
                                     48d8d0 < Unwind RaiseException+0x1a0>
                                je
48d880:
            83 f8 08
                                       $0x8,%eax
                                cmp
48d883:
            75 3b
                                jne
                                     48d8c0 < Unwind_RaiseException+0x190>
48d885:
            4c 89 ee
                                       %r13,%rsi
                                mov
48d888:
            48 89 df
                                       %rbx,%rdi
                                mov
                                callq 48d0f0 <uw_update_context>
48d88b:
            e8 60 f8 ff ff
            4c 89 ee
48d890:
                                mov
                                       %r13,%rsi
            48 89 df
48d893:
                                       %rbx,%rdi
                                mov
            e8 55 e4 ff ff
                                callq 48bcf0 <uw frame state for>
48d896:
48d89b:
            83 f8 05
                                cmp
                                       $0x5,%eax
```

```
75 b8
48d89e:
                                      48d858 < Unwind RaiseException+0x128>
                                ine
                                       -0x28(%rbp),%rbx
48d8a0:
            48 8b 5d d8
                                mov
48d8a4:
            4c 8b 65 e0
                                       -0x20(%rbp), %r12
                                mov
48d8a8:
            4c 8b 6d e8
                                       -0x18(%rbp), %r13
                                mov
            4c 8b 75 f0
                                       -0x10(%rbp), %r14
48d8ac:
                                mov
48d8b0:
            4c 8b 7d f8
                                       -0x8(\%rbp),\%r15
                                mov
48d8b4:
            c9
                          leaveg
48d8b5:
            c3
                          retq
48d8b6:
            66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
48d8bd:
            00 00 00
            ь 8 03 00 00 00
48d8c0:
                                mov
                                       $0x3,%eax
                                      48d8a0 < Unwind RaiseException+0x170>
48d8c5:
            eb d9
                                imp
48d8c7:
            66 0f 1f 84 00 00 00
                                nopw 0x0(\%rax,\%rax,1)
48d8ce:
            00 00
48d8d0:
            66 0f 6f 85 60 fc ff
                                movdga -0x3a0(%rbp),%xmm0
48d8d7:
            ff
48d8d8:
            48 89 de
                                mov
                                       %rbx,%rsi
48d8db:
            48 8b 8d e0 fd ff ff
                                       -0x220(%rbp),%rcx
                                mov
48d8e2:
            48 8b 85 10 fe ff ff
                                       -0x1f0(%rbp),%rax
                                mov
48d8e9:
            4c 89 e7
                                mov
                                       %r12,%rdi
48d8ec:
            0f 29 85 50 fd ff ff
                                movaps %xmm0,-0x2b0(%rbp)
48d8f3:
            49 c7 44 24 10 00 00 movg $0x0,0x10(%r12)
48d8fa:
            00 00
            48 c1 e8 3f
                                      $0x3f,%rax
48d8fc:
                                shr
48d900:
            48 29 c1
                                      %rax,%rcx
48d903:
            66 0f 6f 85 70 fc ff
                                movdqa -0x390(%rbp),%xmm0
48d90a:
            ff
            49 89 4c 24 18
48d90b:
                                       %rcx,0x18(%r12)
                                mov
                                movaps %xmm0,-0x2a0(%rbp)
48d910:
            0f 29 85 60 fd ff ff
48d917:
            66 0f 6f 85 80 fc ff
                                movdqa -0x380(%rbp),%xmm0
48d91e:
            ff
48d91f:
            0f 29 85 70 fd ff ff
                                movaps %xmm0,-0x290(%rbp)
48d926:
            66 0f 6f 85 90 fc ff
                                movdqa -0x370(%rbp),%xmm0
48d92d:
            ff
            0f 29 85 80 fd ff ff
                                 movaps \%xmm0,-0x280(\%rbp)
48d92e:
48d935:
            66 0f 6f 85 a0 fc ff
                                movdqa -0x360(%rbp),%xmm0
48d93c:
            ff
            0f 29 85 90 fd ff ff
48d93d:
                                 movaps \%xmm0,-0x270(\%rbp)
48d944:
            66 0f 6f 85 b0 fc ff
                                movdga -0x350(%rbp),%xmm0
48d94b:
            ff
48d94c:
            0f 29 85 a0 fd ff ff
                                movaps %xmm0,-0x260(%rbp)
48d953:
            66 0f 6f 85 c0 fc ff
                                movdga -0x340(%rbp),%xmm0
48d95a:
            ff
            0f 29 85 b0 fd ff ff
                                movaps %xmm0,-0x250(%rbp)
48d95b:
48d962:
            66 0f 6f 85 d0 fc ff
                                movdqa -0x330(%rbp),%xmm0
48d969:
48d96a:
            0f 29 85 c0 fd ff ff
                                movaps %xmm0,-0x240(%rbp)
            66 0f 6f 85 e0 fc ff
48d971:
                                 movdqa -0x320(%rbp),%xmm0
48d978:
            ff
            0f 29 85 d0 fd ff ff
48d979:
                                 movaps \%xmm0,-0x230(\%rbp)
            66 0f 6f 85 f0 fc ff
                                movdga -0x310(%rbp),%xmm0
48d980:
48d987:
            ff
```

```
48d988:
             0f 29 85 e0 fd ff ff
                                  movaps %xmm0,-0x220(%rbp)
 48d98f:
             66 0f 6f 85 00 fd ff
                                  movdga -0x300(%rbp),%xmm0
 48d996:
             ff
 48d997:
             0f 29 85 f0 fd ff ff
                                  movaps %xmm0,-0x210(%rbp)
 48d99e:
             66 0f 6f 85 10 fd ff
                                  movdga -0x2f0(%rbp),%xmm0
 48d9a5:
 48d9a6:
             0f 29 85 00 fe ff ff
                                  movaps %xmm0,-0x200(%rbp)
             66 0f 6f 85 20 fd ff
                                  movdga -0x2e0(%rbp),%xmm0
 48d9ad:
 48d9b4:
 48d9b5:
             0f 29 85 10 fe ff ff
                                  movaps \%xmm0,-0x1f0(\%rbp)
             66 0f 6f 85 30 fd ff
                                  movdqa -0x2d0(%rbp),%xmm0
 48d9bc:
 48d9c3:
             0f 29 85 20 fe ff ff
                                  movaps \%xmm0,-0x1e0(\%rbp)
 48d9c4:
 48d9cb:
             66 0f 6f 85 40 fd ff
                                  movdga -0x2c0(%rbp),%xmm0
 48d9d2:
             0f 29 85 30 fe ff ff
 48d9d3:
                                  movaps \%xmm0,-0x1d0(\%rbp)
 48d9da:
             e8 a1 f7 ff ff
                                  callq 48d180 < Unwind_RaiseException_Phase2>
 48d9df:
             83 f8 07
                                        $0x7,%eax
                                  cmp
                                       48d8a0 < Unwind RaiseException+0x170>
 48d9e2:
             0f 85 b8 fe ff ff
                                  ine
 48d9e8:
             48 89 de
                                  mov
                                        %rbx,%rsi
 48d9eb:
             4c 89 f7
                                        %r14,%rdi
                                  mov
                                  callq 48d300 <uw_install_context_1>
 48d9ee:
             e8 0d f9 ff ff
 48d9f3:
             4c 8b 85 e8 fd ff ff
                                  mov
                                        -0x218(%rbp), %r8
                                        -0x220(%rbp),%rdi
 48d9fa:
             48 8b bd e0 fd ff ff
                                  mov
 48da01:
             4c 89 c6
                                        %r8,%rsi
                                  mov
 48da04:
             e8 17 fd ff ff
                                  callq 48d720 < Unwind_DebugHook>
             48 89 c1
                                        %rax,%rcx
 48da09:
                                  mov
 48da0c:
             4c 89 44 05 08
                                        %r8,0x8(%rbp,%rax,1)
                                  mov
                                        -0x38(%rbp), %rax
 48da11:
             48 8b 45 c8
                                  mov
 48da15:
             48 8d 4c 0d 08
                                      0x8(%rbp,%rcx,1),%rcx
                                  lea
 48da1a:
             48 8b 55 d0
                                        -0x30(%rbp), %rdx
                                  mov
                                        -0x28(%rbp),%rbx
 48da1e:
             48 8b 5d d8
                                  mov
 48da22:
             4c 8b 65 e0
                                  mov
                                        -0x20(%rbp), %r12
 48da26:
             4c 8b 6d e8
                                        -0x18(\%rbp),\%r13
                                  mov
                                        -0x10(%rbp), %r14
 48da2a:
             4c 8b 75 f0
                                  mov
 48da2e:
             4c 8b 7d f8
                                  mov
                                        -0x8(%rbp), %r15
             48 8b 6d 00
                                        0x0(%rbp), %rbp
 48da32:
                                  mov
 48da36:
             48 89 cc
                                        %rcx,%rsp
                                  mov
 48da39:
             c3
                           retq
             66 0f 1f 44 00 00
                                  nopw 0x0(\%rax,\%rax,1)
 48da3a:
00000000048da40 <_Unwind_ForcedUnwind>:
 48da40:
             55
                           push %rbp
 48da41:
             48 89 e5
                                        %rsp,%rbp
                                  mov
 48da44:
             41 57
                                  push %r15
 48da46:
             41 56
                                  push
                                       %r14
 48da48:
             41 55
                                  push
                                        %r13
             41 54
 48da4a:
                                  push
                                        %r12
             49 89 d5
                                        %rdx,%r13
 48da4c:
                                 mov
 48da4f:
             53
                                 %rbx
                           push
 48da50:
                                 %rdx
             52
                           push
                                  lea
 48da51:
             4c 8d a5 e0 fd ff ff
                                       -0x220(%rbp), %r12
```

```
48da58:
            50
                          push %rax
            49 89 f6
48da59:
                                 mov
                                       %rsi,%r14
48da5c:
            48 8d 75 10
                                      0x10(%rbp),%rsi
                                 lea
48da60:
            48 89 fb
                                       %rdi,%rbx
                                 mov
            4c 89 e7
48da63:
                                 mov
                                       %r12,%rdi
48da66:
            48 81 ec e8 01 00 00 sub
                                      $0x1e8,%rsp
48da6d:
            48 8b 55 08
                                       0x8(%rbp),%rdx
                                 mov
48da71:
            e8 fa f4 ff ff
                                 callq 48cf70 <uw init context 1>
            66 0f 6f 85 e0 fd ff
                                 movdga -0x220(%rbp),%xmm0
48da76:
48da7d:
            ff
48da7e:
            48 89 df
                                 mov
                                       %rbx,%rdi
            4c 89 6b 18
48da81:
                                 mov
                                       %r13,0x18(%rbx)
            4c 8d ad d0 fe ff ff
                                      -0x130(%rbp), %r13
48da85:
                                 lea
48da8c:
            4c 89 73 10
                                       %r14,0x10(%rbx)
48da90:
            0f 29 85 d0 fe ff ff
                                 movaps %xmm0,-0x130(%rbp)
48da97:
            4c 89 ee
                                       %r13,%rsi
48da9a:
            66 0f 6f 85 f0 fd ff
                                 movdga -0x210(%rbp),%xmm0
            ff
48daa1:
48daa2:
            0f 29 85 e0 fe ff ff
                                 movaps \%xmm0,-0x120(\%rbp)
48daa9:
            66 0f 6f 85 00 fe ff
                                 movdga -0x200(%rbp),%xmm0
48dab0:
            ff
48dab1:
            0f 29 85 f0 fe ff ff
                                 movaps %xmm0,-0x110(%rbp)
48dab8:
            66 0f 6f 85 10 fe ff
                                 movdga -0x1f0(%rbp),%xmm0
48dabf:
            ff
            0f 29 85 00 ff ff ff
                                 movaps \%xmm0,-0x100(\%rbp)
48dac0:
48dac7:
            66 0f 6f 85 20 fe ff
                                 movdqa -0x1e0(%rbp),%xmm0
48dace:
            ff
            0f 29 85 10 ff ff ff
48dacf:
                                 movaps %xmm0,-0xf0(%rbp)
                                 movdga -0x1d0(%rbp),%xmm0
48dad6:
            66 0f 6f 85 30 fe ff
48dadd:
            ff
            0f 29 85 20 ff ff ff
48dade:
                                 movaps %xmm0,-0xe0(%rbp)
            66 0f 6f 85 40 fe ff
                                 movdga -0x1c0(%rbp),%xmm0
48dae5:
48daec:
48daed:
            0f 29 85 30 ff ff ff
                                 movaps %xmm0,-0xd0(%rbp)
48daf4:
            66 0f 6f 85 50 fe ff
                                 movdqa -0x1b0(%rbp),%xmm0
48dafb:
            ff
            0f 29 85 40 ff ff ff
                                 movaps %xmm0,-0xc0(%rbp)
48dafc:
48db03:
            66 0f 6f 85 60 fe ff
                                 movdga -0x1a0(%rbp),%xmm0
48db0a:
            ff
            0f 29 85 50 ff ff ff
48db0b:
                                 movaps %xmm0,-0xb0(%rbp)
            66 0f 6f 85 70 fe ff
                                 movdqa -0x190(%rbp),%xmm0
48db12:
48db19:
            ff
48db1a:
            0f 29 85 60 ff ff ff
                                 movaps %xmm0,-0xa0(%rbp)
48db21:
            66 0f 6f 85 80 fe ff
                                 movdqa -0x180(%rbp),%xmm0
48db28:
            ff
48db29:
            0f 29 85 70 ff ff ff
                                 movaps \%xmm0,-0x90(\%rbp)
48db30:
            66 0f 6f 85 90 fe ff
                                 movdqa -0x170(%rbp),%xmm0
48db37:
            0f 29 45 80
                                 movaps %xmm0,-0x80(%rbp)
48db38:
            66 0f 6f 85 a0 fe ff
48db3c:
                                 movdqa -0x160(%rbp),%xmm0
48db43:
            ff
48db44:
            0f 29 45 90
                                 movaps \%xmm0,-0x70(\%rbp)
```

```
48db48:
             66 0f 6f 85 b0 fe ff
                                 movdga -0x150(%rbp),%xmm0
 48db4f:
             ff
 48db50:
             0f 29 45 a0
                                 movaps \%xmm0,-0x60(\%rbp)
 48db54:
             66 0f 6f 85 c0 fe ff
                                 movdga -0x140(%rbp),%xmm0
 48db5b:
             ff
 48db5c:
             0f 29 45 b0
                                 movaps \%xmm0,-0x50(\%rbp)
 48db60:
             e8 cb f6 ff ff
                                  callq 48d230 < Unwind_ForcedUnwind_Phase2>
             83 f8 07
                                        $0x7.%eax
 48db65:
                                 cmp
             74 16
                                      48db80 < Unwind ForcedUnwind+0x140>
 48db68:
                                 ie
 48db6a:
             48 8b 5d d8
                                 mov
                                        -0x28(%rbp), %rbx
                                        -0x20(%rbp), %r12
 48db6e:
             4c 8b 65 e0
                                 mov
             4c 8b 6d e8
                                        -0x18(%rbp), %r13
 48db72:
                                 mov
                                        -0x10(%rbp), %r14
 48db76:
             4c 8b 75 f0
                                 mov
 48db7a:
             4c 8b 7d f8
                                        -0x8(\%rbp),\%r15
                                 mov
                           leaveq
 48db7e:
             c9
             с3
 48db7f:
                           retq
 48db80:
             4c 89 ee
                                        %r13,%rsi
                                 mov
 48db83:
             4c 89 e7
                                        %r12,%rdi
                                 mov
 48db86:
             e8 75 f7 ff ff
                                 callq 48d300 <uw install context 1>
 48db8b:
             4c 8b 85 68 ff ff ff
                                 mov
                                        -0x98(\%rbp),\%r8
 48db92:
             48 8b bd 60 ff ff ff
                                        -0xa0(%rbp),%rdi
                                 mov
 48db99:
             4c 89 c6
                                 mov
                                        %r8,%rsi
 48db9c:
             e8 7f fb ff ff
                                 callq 48d720 < Unwind DebugHook>
                                        %rax,%rcx
 48dba1:
             48 89 c1
                                 mov
             4c 89 44 05 08
                                        %r8,0x8(%rbp,%rax,1)
 48dba4:
                                 mov
 48dba9:
             48 8b 45 c8
                                        -0x38(%rbp),%rax
                                 mov
             48 8d 4c 0d 08
                                 lea 0x8(%rbp,%rcx,1),%rcx
 48dbad:
                                        -0x30(%rbp), %rdx
 48dbb2:
             48 8b 55 d0
                                 mov
                                        -0x28(%rbp),%rbx
 48dbb6:
             48 8b 5d d8
                                 mov
 48dbba:
             4c 8b 65 e0
                                        -0x20(%rbp), %r12
                                 mov
 48dbbe:
             4c 8b 6d e8
                                        -0x18(%rbp), %r13
                                 mov
                                        -0x10(%rbp), %r14
 48dbc2:
             4c 8b 75 f0
                                 mov
 48dbc6:
             4c 8b 7d f8
                                 mov
                                        -0x8(\%rbp),\%r15
 48dbca:
             48 8b 6d 00
                                        0x0(%rbp), %rbp
                                 mov
             48 89 cc
                                        %rcx,%rsp
 48dbce:
                                 mov
 48dbd1:
             c3
                           retq
 48dbd2:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48dbd6:
 48dbdd:
             00 00 00
00000000048dbe0 < Unwind Resume>:
 48dbe0:
             55
                           push
                                %rbp
 48dbe1:
             48 89 e5
                                 mov
                                        %rsp,%rbp
 48dbe4:
             41 57
                                 push
                                       %r15
 48dbe6:
             41 56
                                 push %r14
 48dbe8:
             41 55
                                 push %r13
                                 push %r12
 48dbea:
             41 54
             4c 8d a5 e0 fd ff ff
                                      -0x220(%rbp), %r12
 48dbec:
                                 lea
                                 %rbx
 48dbf3:
             53
                          push
             52
                                 %rdx
 48dbf4:
                           push
 48dbf5:
             48 8d 75 10
                                 lea
                                      0x10(%rbp),%rsi
 48dbf9:
             50
                           push %rax
```

```
48dbfa:
            48 89 fb
                                       %rdi.%rbx
                                 mov
48dbfd:
            4c 89 e7
                                       %r12,%rdi
                                 mov
48dc00:
            4c 8d ad d0 fe ff ff
                                 lea
                                      -0x130(%rbp), %r13
48dc07:
            48 81 ec e8 01 00 00 sub
                                      $0x1e8,%rsp
48dc0e:
            48 8b 55 08
                                       0x8(%rbp),%rdx
                                 mov
48dc12:
            e8 59 f3 ff ff
                                 callq 48cf70 <uw init context 1>
48dc17:
            66 0f 6f 85 e0 fd ff
                                 movdga -0x220(%rbp),%xmm0
48dc1e:
            ff
            4c 89 ee
                                       %r13,%rsi
48dc1f:
                                 mov
            48 83 7b 10 00
48dc22:
                                 cmpq $0x0,0x10(\%rbx)
                                       %rbx,%rdi
48dc27:
            48 89 df
                                 mov
            0f 29 85 d0 fe ff ff
                                 movaps \%xmm0,-0x130(\%rbp)
48dc2a:
48dc31:
            66 0f 6f 85 f0 fd ff
                                 movdqa -0x210(%rbp),%xmm0
48dc38:
            ff
48dc39:
            0f 29 85 e0 fe ff ff
                                 movaps %xmm0,-0x120(%rbp)
            66 0f 6f 85 00 fe ff
                                 movdga -0x200(%rbp),%xmm0
48dc40:
48dc47:
48dc48:
            0f 29 85 f0 fe ff ff
                                 movaps %xmm0,-0x110(%rbp)
48dc4f:
            66 0f 6f 85 10 fe ff
                                 movdga -0x1f0(%rbp),%xmm0
48dc56:
48dc57:
            0f 29 85 00 ff ff ff
                                 movaps \%xmm0,-0x100(\%rbp)
48dc5e:
            66 0f 6f 85 20 fe ff
                                 movdqa -0x1e0(%rbp),%xmm0
48dc65:
            ff
            0f 29 85 10 ff ff ff
                                 movaps %xmm0,-0xf0(%rbp)
48dc66:
            66 0f 6f 85 30 fe ff
                                 movdqa -0x1d0(%rbp),%xmm0
48dc6d:
48dc74:
            ff
            0f 29 85 20 ff ff ff
                                 movaps %xmm0,-0xe0(%rbp)
48dc75:
48dc7c:
            66 0f 6f 85 40 fe ff
                                 movdga -0x1c0(%rbp),%xmm0
48dc83:
            ff
            0f 29 85 30 ff ff ff
48dc84:
                                 movaps %xmm0,-0xd0(%rbp)
            66 0f 6f 85 50 fe ff
48dc8b:
                                 movdga -0x1b0(%rbp),%xmm0
48dc92:
            ff
48dc93:
            0f 29 85 40 ff ff ff
                                 movaps %xmm0,-0xc0(%rbp)
48dc9a:
            66 0f 6f 85 60 fe ff
                                 movdga -0x1a0(%rbp),%xmm0
48dca1:
48dca2:
            0f 29 85 50 ff ff ff
                                 movaps %xmm0,-0xb0(%rbp)
            66 0f 6f 85 70 fe ff
                                 movdqa -0x190(%rbp),%xmm0
48dca9:
48dcb0:
48dcb1:
            0f 29 85 60 ff ff ff
                                 movaps %xmm0,-0xa0(%rbp)
48dcb8:
            66 0f 6f 85 80 fe ff
                                 movdqa -0x180(%rbp),%xmm0
48dcbf:
48dcc0:
            0f 29 85 70 ff ff ff
                                 movaps %xmm0,-0x90(%rbp)
48dcc7:
            66 0f 6f 85 90 fe ff
                                 movdqa -0x170(%rbp),%xmm0
48dcce:
            ff
48dccf:
            0f 29 45 80
                                 movaps %xmm0,-0x80(%rbp)
48dcd3:
            66 0f 6f 85 a0 fe ff
                                 movdqa -0x160(%rbp),%xmm0
48dcda:
            ff
            0f 29 45 90
                                 movaps \%xmm0,-0x70(\%rbp)
48dcdb:
            66 0f 6f 85 b0 fe ff
                                 movdqa -0x150(%rbp),%xmm0
48dcdf:
48dce6:
            ff
48dce7:
            0f 29 45 a0
                                 movaps \%xmm0,-0x60(\%rbp)
48dceb:
            66 0f 6f 85 c0 fe ff
                                 movdqa -0x140(%rbp),%xmm0
```

```
48dcf2:
             ff
 48dcf3:
             0f 29 45 b0
                                 movaps \%xmm0,-0x50(\%rbp)
 48dcf7:
             75 Of
                                      48dd08 < Unwind Resume+0x128>
 48dcf9:
             e8 82 f4 ff ff
                                 callq 48d180 < Unwind RaiseException Phase2>
             83 f8 07
                                       $0x7,%eax
 48dcfe:
                                 cmp
                                      48dd0f < Unwind Resume+0x12f>
 48dd01:
             74 0c
                                 je
 48dd03:
             e8 88 03 f8 ff
                                 callq 40e090 <abort>
             e8 23 f5 ff ff
                                 callq 48d230 < Unwind ForcedUnwind Phase2>
 48dd08:
 48dd0d:
                                       48dcfe < Unwind Resume+0x11e>
             eb ef
                                 imp
 48dd0f:
             4c 89 ee
                                 mov
                                        %r13,%rsi
             4c 89 e7
                                        %r12,%rdi
 48dd12:
                                 mov
                                 callq 48d300 <uw_install_context 1>
             e8 e6 f5 ff ff
 48dd15:
             48 8b 95 68 ff ff ff
                                        -0x98(%rbp), %rdx
 48dd1a:
                                 mov
 48dd21:
             48 8b bd 60 ff ff ff
                                        -0xa0(%rbp),%rdi
                                 mov
                                        %rdx,%rsi
 48dd28:
             48 89 d6
                                 mov
             e8 f0 f9 ff ff
 48dd2b:
                                 callq 48d720 < Unwind DebugHook>
 48dd30:
             48 89 c1
                                 mov
                                        %rax,%rcx
 48dd33:
             48 89 54 05 08
                                        %rdx,0x8(%rbp,%rax,1)
                                 mov
 48dd38:
             48 8b 45 c8
                                       -0x38(%rbp),%rax
                                 mov
 48dd3c:
             48 8d 4c 0d 08
                                 lea 0x8(\%rbp,\%rcx,1),\%rcx
 48dd41:
             48 8b 55 d0
                                       -0x30(%rbp), %rdx
                                 mov
 48dd45:
             48 8b 5d d8
                                 mov
                                        -0x28(%rbp), %rbx
 48dd49:
             4c 8b 65 e0
                                       -0x20(%rbp), %r12
                                 mov
                                        -0x18(%rbp), %r13
 48dd4d:
             4c 8b 6d e8
                                 mov
 48dd51:
             4c 8b 75 f0
                                        -0x10(\%rbp),\%r14
                                 mov
 48dd55:
             4c 8b 7d f8
                                        -0x8(%rbp), %r15
                                 mov
             48 8b 6d 00
                                        0x0(%rbp), %rbp
 48dd59:
                                 mov
 48dd5d:
             48 89 cc
                                        %rcx,%rsp
                                 mov
 48dd60:
             c3
                           retq
 48dd61:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48dd66:
             00 00 00
 48dd6d:
00000000048dd70 <_Unwind_Resume_or_Rethrow>:
 48dd70:
             55
                           push %rbp
 48dd71:
             48 89 e5
                                 mov
                                        %rsp,%rbp
 48dd74:
             41 57
                                 push
                                       %r15
 48dd76:
             41 56
                                 push %r14
 48dd78:
             41 55
                                 push
                                       %r13
             41 54
 48dd7a:
                                 push %r12
 48dd7c:
             53
                                %rbx
                           push
 48dd7d:
             52
                           push %rdx
             48 89 fb
 48dd7e:
                                 mov
                                       %rdi,%rbx
 48dd81:
             50
                           push %rax
 48dd82:
             48 81 ec e8 01 00 00 sub
                                       $0x1e8,%rsp
 48dd89:
             48 83 7f 10 00
                                 cmpg $0x0,0x10(\%rdi)
                                      48dea0 < Unwind_Resume_or_Rethrow+0x130>
 48dd8e:
             0f 84 0c 01 00 00
                                 ie
             48 8b 55 08
 48dd94:
                                 mov
                                       0x8(\%rbp),\%rdx
             4c 8d a5 e0 fd ff ff
                                      -0x220(%rbp), %r12
 48dd98:
                                 lea
             48 8d 75 10
 48dd9f:
                                      0x10(%rbp),%rsi
                                 lea
             4c 8d ad d0 fe ff ff
                                      -0x130(%rbp), %r13
 48dda3:
                                 lea
 48ddaa:
             4c 89 e7
                                       %r12,%rdi
                                 mov
```

```
48ddad:
            e8 be f1 ff ff
                                 calla 48cf70 <uw init context 1>
            66 0f 6f 85 e0 fd ff
48ddb2:
                                 movdqa -0x220(%rbp),%xmm0
48ddb9:
            ff
48ddba:
            4c 89 ee
                                       %r13,%rsi
                                 mov
48ddbd:
            48 89 df
                                       %rbx,%rdi
                                 mov
48ddc0:
            0f 29 85 d0 fe ff ff
                                 movaps %xmm0,-0x130(%rbp)
48ddc7:
            66 0f 6f 85 f0 fd ff
                                 movdga -0x210(%rbp),%xmm0
48ddce:
            ff
48ddcf:
            0f 29 85 e0 fe ff ff
                                 movaps \%xmm0,-0x120(\%rbp)
48ddd6:
            66 0f 6f 85 00 fe ff
                                 movdqa -0x200(%rbp),%xmm0
48dddd:
            0f 29 85 f0 fe ff ff
                                 movaps \%xmm0,-0x110(\%rbp)
48ddde:
48dde5:
            66 0f 6f 85 10 fe ff
                                 movdga -0x1f0(%rbp),%xmm0
48ddec:
            0f 29 85 00 ff ff ff
48dded:
                                 movaps %xmm0,-0x100(%rbp)
            66 0f 6f 85 20 fe ff
                                 movdga -0x1e0(%rbp),%xmm0
48ddf4:
48ddfb:
48ddfc:
            0f 29 85 10 ff ff ff
                                 movaps %xmm0,-0xf0(%rbp)
48de03:
            66 0f 6f 85 30 fe ff
                                 movdga -0x1d0(%rbp),%xmm0
48de0a:
48de0b:
            0f 29 85 20 ff ff ff
                                 movaps %xmm0,-0xe0(%rbp)
48de12:
            66 0f 6f 85 40 fe ff
                                 movdqa -0x1c0(%rbp),%xmm0
48de19:
            ff
            0f 29 85 30 ff ff ff
                                 movaps %xmm0,-0xd0(%rbp)
48de1a:
48de21:
            66 0f 6f 85 50 fe ff
                                 movdqa -0x1b0(%rbp),%xmm0
48de28:
            ff
            0f 29 85 40 ff ff ff
                                 movaps \%xmm0,-0xc0(\%rbp)
48de29:
            66 0f 6f 85 60 fe ff
                                 movdga -0x1a0(%rbp),%xmm0
48de30:
48de37:
            ff
            0f 29 85 50 ff ff ff
48de38:
                                 movaps %xmm0,-0xb0(%rbp)
            66 0f 6f 85 70 fe ff
48de3f:
                                 movdga -0x190(%rbp),%xmm0
48de46:
48de47:
            0f 29 85 60 ff ff ff
                                 movaps %xmm0,-0xa0(%rbp)
48de4e:
            66 0f 6f 85 80 fe ff
                                 movdga -0x180(%rbp),%xmm0
48de55:
48de56:
            0f 29 85 70 ff ff ff
                                 movaps \%xmm0,-0x90(\%rbp)
            66 0f 6f 85 90 fe ff
                                 movdqa -0x170(%rbp),%xmm0
48de5d:
48de64:
48de65:
            0f 29 45 80
                                 movaps \%xmm0,-0x80(\%rbp)
            66 0f 6f 85 a0 fe ff
                                 movdga -0x160(%rbp),%xmm0
48de69:
48de70:
48de71:
            0f 29 45 90
                                 movaps \%xmm0,-0x70(\%rbp)
48de75:
            66 0f 6f 85 b0 fe ff
                                 movdqa -0x150(%rbp),%xmm0
48de7c:
            ff
48de7d:
            0f 29 45 a0
                                 movaps \%xmm0,-0x60(\%rbp)
48de81:
            66 0f 6f 85 c0 fe ff
                                 movdqa -0x140(%rbp),%xmm0
48de88:
            ff
            0f 29 45 b0
                                 movaps %xmm0,-0x50(%rbp)
48de89:
                                 callq 48d230 < Unwind_ForcedUnwind_Phase2>
48de8d:
            e8 9e f3 ff ff
            83 f8 07
48de92:
                                 cmp
                                       $0x7,%eax
48de95:
            74 29
                                     48dec0 < Unwind Resume or Rethrow+0x150>
48de97:
            e8 f4 01 f8 ff
                                 callq 40e090 <abort>
```

```
48de9c:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
                                  callg 48d730 < Unwind RaiseException>
 48dea0:
             e8 8b f8 ff ff
 48dea5:
             48 8b 5d d8
                                  mov
                                        -0x28(%rbp),%rbx
 48dea9:
             4c 8b 65 e0
                                        -0x20(%rbp), %r12
                                  mov
             4c 8b 6d e8
                                        -0x18(%rbp), %r13
 48dead:
                                  mov
 48deb1:
             4c 8b 75 f0
                                        -0x10(%rbp), %r14
                                  mov
 48deb5:
             4c 8b 7d f8
                                  mov
                                        -0x8(\%rbp),\%r15
 48deb9:
             с9
                           leaveq
 48deba:
             с3
                           retq
             0f 1f 44 00 00
 48debb:
                                  nopl 0x0(\%rax,\%rax,1)
                                        %r13,%rsi
 48dec0:
             4c 89 ee
                                  mov
             4c 89 e7
                                        %r12.%rdi
 48dec3:
                                  mov
                                  callq 48d300 <uw install context 1>
             e8 35 f4 ff ff
 48dec6:
 48decb:
             4c 8b 85 68 ff ff ff
                                        -0x98(%rbp),%r8
                                  mov
             48 8b bd 60 ff ff ff
 48ded2:
                                        -0xa0(%rbp),%rdi
                                  mov
                                        %r8,%rsi
 48ded9:
             4c 89 c6
                                  mov
 48dedc:
             e8 3f f8 ff ff
                                  callq 48d720 < Unwind_DebugHook>
 48dee1:
             48 89 c1
                                        %rax,%rcx
                                  mov
 48dee4:
             4c 89 44 05 08
                                        %r8,0x8(%rbp,%rax,1)
                                  mov
 48dee9:
             48 8b 45 c8
                                  mov
                                        -0x38(%rbp),%rax
 48deed:
             48 8d 4c 0d 08
                                       0x8(%rbp,%rcx,1),%rcx
                                  lea
 48def2:
             48 8b 55 d0
                                  mov
                                        -0x30(%rbp), %rdx
 48def6:
             48 8b 5d d8
                                  mov
                                        -0x28(%rbp),%rbx
                                        -0x20(%rbp), %r12
 48defa:
             4c 8b 65 e0
                                  mov
 48defe:
             4c 8b 6d e8
                                        -0x18(\%rbp),\%r13
                                  mov
 48df02:
             4c 8b 75 f0
                                        -0x10(%rbp), %r14
                                  mov
 48df06:
             4c 8b 7d f8
                                        -0x8(\%rbp),\%r15
                                  mov
                                        0x0(%rbp), %rbp
 48df0a:
             48 8b 6d 00
                                  mov
 48df0e:
             48 89 cc
                                        %rcx,%rsp
                                  mov
 48df11:
             с3
                           retq
                                  nopl 0x0(\%rax)
 48df12:
             0f 1f 40 00
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48df16:
 48df1d:
             00 00 00
00000000048df20 <_Unwind_DeleteException>:
 48df20:
             48 8b 47 08
                                  mov
                                        0x8(%rdi),%rax
 48df24:
             48 85 c0
                                  test %rax,%rax
             74 0f
 48df27:
                                       48df38 < Unwind DeleteException+0x18>
                                  ie
 48df29:
             48 89 fe
                                  mov
                                        %rdi,%rsi
             bf 01 00 00 00
 48df2c:
                                  mov
                                        $0x1,%edi
 48df31:
             ff e0
                                 *%rax
                           jmpq
 48df33:
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
 48df38:
             f3 c3
                                  repz retq
             66 0f 1f 44 00 00
                                  nopw 0x0(\%rax,\%rax,1)
 48df3a:
00000000048df40 < Unwind Backtrace>:
 48df40:
             55
                           push
                                 %rbp
             48 89 e5
                                        %rsp,%rbp
 48df41:
                                  mov
             41 57
                                        %r15
 48df44:
                                  push
             41 56
                                        %r14
 48df46:
                                  push
                                  push %r13
 48df48:
             41 55
 48df4a:
             41 54
                                  push %r12
```

```
48df4c:
             4c 8d a5 60 fd ff ff
                                      -0x2a0(%rbp), %r12
                                  lea
 48df53:
                                 %rbx
             53
                           push
 48df54:
             49 89 f6
                                  mov
                                        %rsi,%r14
 48df57:
             48 8d 75 10
                                       0x10(%rbp),%rsi
                                  lea
 48df5b:
             49 89 ff
                                        %rdi,%r15
                                  mov
 48df5e:
             4c 89 e7
                                        %r12,%rdi
                                  mov
 48df61:
             4c 8d ad 50 fe ff ff
                                      -0x1b0(%rbp), %r13
                                  lea
             48 81 ec 78 02 00 00 sub
                                       $0x278,%rsp
 48df68:
 48df6f:
             48 8b 55 08
                                        0x8(%rbp),%rdx
                                  mov
 48df73:
             e8 f8 ef ff ff
                                  callq 48cf70 <uw_init_context_1>
                                       48df9d < Unwind Backtrace+0x5d>
 48df78:
             eb 23
                                  jmp
             66 0f 1f 44 00 00
 48df7a:
                                  nopw 0x0(\%rax,\%rax,1)
 48df80:
             4c 89 f6
                                        %r14,%rsi
                                  mov
 48df83:
             4c 89 e7
                                        %r12,%rdi
                                  mov
                                  callq *%r15
 48df86:
             41 ff d7
                                  test %eax,%eax
 48df89:
             85 c0
 48df8b:
             75 26
                                       48dfb3 <_Unwind_Backtrace+0x73>
                                  ine
 48df8d:
             83 fb 05
                                        $0x5,%ebx
                                  cmp
 48df90:
             74 26
                                      48dfb8 < Unwind Backtrace+0x78>
                                  ie
 48df92:
             4c 89 ee
                                  mov
                                        %r13,%rsi
 48df95:
             4c 89 e7
                                        %r12.%rdi
                                  mov
 48df98:
             e8 53 f1 ff ff
                                  callq 48d0f0 <uw_update_context>
 48df9d:
             4c 89 ee
                                  mov
                                        %r13.%rsi
                                        %r12,%rdi
 48dfa0:
             4c 89 e7
                                  mov
                                  callq 48bcf0 <uw_frame_state_for>
 48dfa3:
             e8 48 dd ff ff
 48dfa8:
             85 c0
                                  test %eax,%eax
 48dfaa:
             89 c3
                                  mov
                                        %eax,%ebx
 48dfac:
             74 d2
                                      48df80 < Unwind Backtrace+0x40>
                                  je
 48dfae:
             83 f8 05
                                        $0x5,%eax
                                  cmp
 48dfb1:
             74 cd
                                      48df80 < Unwind_Backtrace+0x40>
                                  je
             bb 03 00 00 00
                                        $0x3,%ebx
 48dfb3:
                                  mov
             48 81 c4 78 02 00 00 add
 48dfb8:
                                       $0x278,%rsp
 48dfbf:
             89 d8
                                  mov
                                        %ebx,%eax
 48dfc1:
             5b
                                 %rbx
                           pop
             41 5c
 48dfc2:
                                       %r12
                                  pop
 48dfc4:
             41 5d
                                  pop
                                       %r13
             41 5e
                                       %r14
 48dfc6:
                                  pop
 48dfc8:
             41 5f
                                       %r15
                                  pop
 48dfca:
             5d
                                 %rbp
                           pop
 48dfcb:
             c3
                           retq
 48dfcc:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
00000000048dfd0 <fde unencoded compare>:
             48 8b 4a 08
                                        0x8(%rdx),%rcx
 48dfd0:
                                  mov
 48dfd4:
             48 39 4e 08
                                  cmp
                                        %rcx,0x8(%rsi)
 48dfd8:
             b8 01 00 00 00
                                        $0x1,%eax
                                  mov
 48dfdd:
             77 02
                                      48dfe1 <fde_unencoded_compare+0x11>
                                  ja
 48dfdf:
             19 c0
                                  sbb
                                       %eax,%eax
             f3 c3
 48dfe1:
                                  repz retq
             0f 1f 00
 48dfe3:
                                  nopl (%rax)
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48dfe6:
             00 00 00
 48dfed:
```

```
00000000048dff0 <frame downheap>:
 48dff0:
             41 57
                                 push %r15
 48dff2:
             41 56
                                 push %r14
 48dff4:
             44 8d 74 09 01
                                      0x1(%rcx,%rcx,1),%r14d
 48dff9:
             41 55
                                 push %r13
 48dffb:
             41 54
                                 push %r12
 48dffd:
                           push %rbp
             55
 48dffe:
             53
                           push %rbx
 48dfff:
             48 83 ec 18
                                 sub
                                       $0x18,%rsp
             45 39 c6
                                       %r8d,%r14d
 48e003:
                                 cmp
 48e006:
             48 89 3c 24
                                 mov
                                        %rdi,(%rsp)
             44 89 44 24 08
                                        %r8d,0x8(%rsp)
 48e00a:
                                 mov
 48e00f:
             0f 8d 8b 00 00 00
                                      48e0a0 <frame downheap+0xb0>
                                 jge
             49 89 f4
 48e015:
                                        %rsi,%r12
                                 mov
 48e018:
             48 89 d3
                                       %rdx,%rbx
                                 mov
 48e01b:
             eb 3c
                                       48e059 <frame_downheap+0x69>
                                 jmp
 48e01d:
             0f 1f 00
                                 nopl (%rax)
 48e020:
             49 8b 37
                                       (%r15),%rsi
                                 mov
 48e023:
             45 89 f5
                                 mov
                                        %r14d,%r13d
 48e026:
             48 63 c9
                                 movslq %ecx,%rcx
 48e029:
             48 89 f2
                                 mov
                                        %rsi,%rdx
 48e02c:
             48 8b 3c 24
                                       (%rsp),%rdi
                                 mov
             4c 8d 34 cb
                                      (%rbx,%rcx,8),%r14
 48e030:
                                 lea
 48e034:
             49 8b 36
                                        (%r14),%rsi
                                 mov
                                 callq *%r12
 48e037:
             41 ff d4
                                      %eax,%eax
 48e03a:
             85 c0
                                 test
             79 62
                                      48e0a0 <frame downheap+0xb0>
 48e03c:
                                 ins
                                        (%r15),%rdx
 48e03e:
             49 8b 17
                                 mov
 48e041:
             49 8b 06
                                        (%r14),%rax
                                 mov
 48e044:
             44 89 e9
                                        %r13d,%ecx
                                 mov
 48e047:
             49 89 16
                                       %rdx,(%r14)
                                 mov
 48e04a:
             47 8d 74 2d 01
                                 lea 0x1(%r13,%r13,1),%r14d
 48e04f:
             44 39 74 24 08
                                        %r14d,0x8(%rsp)
                                 cmp
             49 89 07
 48e054:
                                 mov
                                        %rax,(%r15)
 48e057:
             7e 47
                                      48e0a0 <frame downheap+0xb0>
 48e059:
             49 63 c6
                                 movslq %r14d,%rax
 48e05c:
             45 8d 6e 01
                                      0x1(%r14),%r13d
 48e060:
             48 c1 e0 03
                                 shl
                                      $0x3,%rax
 48e064:
             44 3b 6c 24 08
                                       0x8(%rsp),%r13d
                                 cmp
 48e069:
             4c 8d 3c 03
                                      (%rbx,%rax,1),%r15
                                 lea
 48e06d:
             49 8b 37
                                       (%r15),%rsi
                                 mov
 48e070:
             7d 3e
                                      48e0b0 <frame downheap+0xc0>
                                 jge
             48 8d 6c 03 08
 48e072:
                                 lea
                                      0x8(%rbx,%rax,1),%rbp
 48e077:
             89 4c 24 0c
                                 mov
                                       %ecx,0xc(%rsp)
 48e07b:
             48 8b 3c 24
                                       (%rsp),%rdi
                                 mov
 48e07f:
             48 8b 55 00
                                        0x0(\%rbp),\%rdx
                                 mov
                                 callq *%r12
             41 ff d4
 48e083:
                                 test %eax,%eax
 48e086:
             85 c0
             8b 4c 24 0c
 48e088:
                                       0xc(\%rsp),\%ecx
             79 92
                                      48e020 <frame_downheap+0x30>
 48e08c:
                                 ins
 48e08e:
             48 8b 75 00
                                       0x0(\%rbp),\%rsi
                                 mov
```

```
48e092:
             49 89 ef
                                        %rbp,%r15
                                 mov
 48e095:
             eb 8f
                                       48e026 < frame downheap+0x36>
                                 imp
 48e097:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
 48e09e:
             00 00
 48e0a0:
             48 83 c4 18
                                 add
                                       $0x18,%rsp
 48e0a4:
             5b
                                %rbx
                           pop
 48e0a5:
             5d
                                %rbp
                           pop
             41 5c
                                       %r12
 48e0a6:
                                 pop
 48e0a8:
             41 5d
                                       %r13
                                 pop
 48e0aa:
             41 5e
                                       %r14
                                 pop
             41 5f
 48e0ac:
                                 pop
                                       %r15
             с3
 48e0ae:
                           retq
 48e0af:
             90
                           nop
 48e0b0:
             45 89 f5
                                        %r14d,%r13d
                                 mov
             e9 6e ff ff ff
 48e0b3:
                                 jmpq 48e026 <frame_downheap+0x36>
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48e0b8:
 48e0bf:
             00
00000000048e0c0 < frame heapsort >:
 48e0c0:
             41 57
                                 push %r15
 48e0c2:
             41 56
                                 push %r14
 48e0c4:
             4c 8d 7a 10
                                 lea
                                      0x10(%rdx),%r15
 48e0c8:
             41 55
                                 push
                                       %r13
             41 54
                                        %r12
 48e0ca:
                                 push
             49 89 f5
 48e0cc:
                                 mov
                                        %rsi,%r13
 48e0cf:
             55
                           push %rbp
 48e0d0:
             53
                           push %rbx
             49 89 fc
                                        %rdi,%r12
 48e0d1:
                                 mov
             48 89 d5
                                        %rdx,%rbp
 48e0d4:
                                 mov
 48e0d7:
             48 83 ec 18
                                       $0x18,%rsp
                                 sub
                                        0x8(%rdx),%rax
 48e0db:
             48 8b 42 08
                                 mov
 48e0df:
             48 89 c3
                                        %rax,%rbx
                                 mov
 48e0e2:
             48 89 44 24 08
                                 mov
                                        %rax,0x8(%rsp)
 48e0e7:
             48 d1 eb
                                      %rbx
                                 shr
                                       $0x1,%ebx
 48e0ea:
             83 eb 01
                                 sub
 48e0ed:
             78 24
                                 is
                                      48e113 < frame heapsort + 0x53>
                                        %eax,%r14d
 48e0ef:
             41 89 c6
                                 mov
                                 nopw 0x0(\%rax,\%rax,1)
 48e0f2:
             66 0f 1f 44 00 00
                                        %ebx,%ecx
 48e0f8:
             89 d9
                                 mov
 48e0fa:
             45 89 f0
                                        %r14d,%r8d
                                 mov
 48e0fd:
             4c 89 fa
                                        %r15,%rdx
                                 mov
 48e100:
             4c 89 ee
                                 mov
                                        %r13,%rsi
                                        %r12,%rdi
 48e103:
             4c 89 e7
                                 mov
                                       $0x1,%ebx
 48e106:
             83 eb 01
                                 sub
 48e109:
             e8 e2 fe ff ff
                                 callq 48dff0 <frame_downheap>
 48e10e:
             83 fb ff
                                        $0xffffffff,%ebx
                                 cmp
                                       48e0f8 <frame_heapsort+0x38>
 48e111:
             75 e5
                                 jne
             48 8b 44 24 08
                                        0x8(%rsp),%rax
 48e113:
                                 mov
             8d 58 ff
                                      -0x1(%rax),%ebx
 48e118:
                                 lea
             85 db
                                      %ebx,%ebx
 48e11b:
                                 test
             7e 3d
                                      48e15c <frame heapsort+0x9c>
 48e11d:
                                 movslq %ebx,%rbx
 48e11f:
             48 63 db
```

```
48e122:
             8d 50 fe
                                      -0x2(%rax),%edx
                                 lea
 48e125:
             49 89 de
                                       %rbx,%r14
                                 mov
 48e128:
             49 29 d6
                                 sub
                                       %rdx,%r14
 48e12b:
             49 83 ee 01
                                 sub
                                       $0x1,%r14
 48e12f:
             90
                           nop
 48e130:
             49 8b 0c df
                                       (%r15,%rbx,8),%rcx
                                 mov
 48e134:
             48 8b 55 10
                                 mov
                                        0x10(%rbp),%rdx
             41 89 d8
                                        %ebx,%r8d
 48e138:
                                 mov
 48e13b:
             4c 89 ee
                                        %r13,%rsi
                                 mov
 48e13e:
             4c 89 e7
                                        %r12,%rdi
                                 mov
             48 89 4d 10
                                        %rcx,0x10(%rbp)
 48e141:
                                 mov
             49 89 14 df
                                        %rdx,(%r15,%rbx,8)
 48e145:
                                 mov
 48e149:
             31 c9
                                       %ecx,%ecx
                                 xor
 48e14b:
             4c 89 fa
                                       %r15,%rdx
                                 mov
             48 83 eb 01
 48e14e:
                                       $0x1,%rbx
                                 sub
             e8 99 fe ff ff
                                 callq 48dff0 <frame downheap>
 48e152:
 48e157:
             4c 39 f3
                                 cmp
                                       %r14,%rbx
 48e15a:
             75 d4
                                      48e130 <frame heapsort+0x70>
                                 ine
 48e15c:
             48 83 c4 18
                                 add
                                       $0x18,%rsp
 48e160:
             5b
                           pop
                                %rbx
 48e161:
             5d
                           pop
                                %rbp
 48e162:
             41 5c
                                 pop
                                       %r12
                                       %r13
 48e164:
             41 5d
                                 pop
             41 5e
                                       %r14
 48e166:
                                 pop
 48e168:
             41 5f
                                       %r15
                                 pop
 48e16a:
             c3
                           retq
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
 48e16b:
00000000048e170 <read_encoded_value_with_base>:
 48e170:
             40 80 ff 50
                                 cmp
                                       $0x50,%dil
 48e174:
                                        %rcx,%r10
             49 89 ca
                                 mov
             74 57
                                      48e1d0 < read_encoded_value_with_base+0x60>
 48e177:
                                 ie
 48e179:
             89 f9
                                 mov
                                       %edi,%ecx
 48e17b:
             83 e1 0f
                                       $0xf,%ecx
                                 and
 48e17e:
             80 f9 0c
                                       $0xc,%cl
                                 cmp
 48e181:
             0f 87 1c 01 00 00
                                 ja
                                      48e2a3 < read encoded value with base+0x133>
 48e187:
             4c 8d 05 76 da 01 00 lea
                                      0x1da76(%rip),%r8
                                                             # 4abc04
< PRETTY FUNCTION .8641+0x574>
                                 movzbl %cl,%ecx
 48e18e:
             0f b6 c9
 48e191:
             49 63 04 88
                                 movslq (%r8,%rcx,4),%rax
 48e195:
             4c 01 c0
                                       %r8,%rax
                                 add
 48e198:
             ff e0
                                 *%rax
                          jmpq
                                 nopw 0x0(\%rax,\%rax,1)
 48e19a:
             66 0f 1f 44 00 00
 48e1a0:
             4c 8b 02
                                 mov
                                        (%rdx),%r8
 48e1a3:
             48 8d 42 08
                                 lea
                                      0x8(%rdx),%rax
 48e1a7:
             4d 85 c0
                                 test %r8,%r8
                                      48e1c3 < read_encoded_value_with_base+0x53>
 48e1aa:
             74 17
                                 je
             89 f9
 48e1ac:
                                 mov
                                       %edi,%ecx
             83 e1 70
                                       $0x70,%ecx
 48e1ae:
                                 and
             80 f9 10
 48e1b1:
                                       $0x10,%cl
                                 cmp
             48 0f 44 f2
                                 cmove %rdx,%rsi
 48e1b4:
             49 01 f0
 48e1b8:
                                 add
                                       %rsi,%r8
```

```
48e1bb:
            40 84 ff
                                test %dil.%dil
48e1be:
            79 03
                                      48e1c3 < read encoded value with base+0x53>
48e1c0:
            4d 8b 00
                                       (%r8),%r8
                                mov
48e1c3:
            4d 89 02
                                       %r8,(%r10)
                                mov
48e1c6:
            c3
                          retq
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48e1c7:
48e1ce:
            00 00
            48 8d 42 07
                                     0x7(\%rdx).\%rax
48e1d0:
                                lea
48e1d4:
            48 83 e0 f8
                                      $0xffffffffffff8,%rax
                                 and
48e1d8:
            4c 8b 00
                                mov
                                       (%rax),%r8
            48 8d 40 08
                                     0x8(%rax),%rax
48e1db:
                                lea
48e1df:
            4d 89 02
                                       %r8,(%r10)
                                mov
48e1e2:
            с3
                          retq
            0f 1f 44 00 00
48e1e3:
                                nopl 0x0(\%rax,\%rax,1)
                                movswq (%rdx),%r8
48e1e8:
            4c 0f bf 02
                                     0x2(%rdx),%rax
48e1ec:
            48 8d 42 02
                                lea
            eb b5
48e1f0:
                                imp
                                      48e1a7 < read_encoded_value_with_base+0x37>
48e1f2:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
                                       %rdx,%rax
48e1f8:
            48 89 d0
                                mov
48e1fb:
            45 31 c0
                                xor
                                      %r8d,%r8d
48e1fe:
            31 c9
                                      %ecx,%ecx
                                xor
48e200:
            48 83 c0 01
                                add
                                      $0x1,%rax
48e204:
            44 0f b6 58 ff
                                movzbl -0x1(%rax),%r11d
            4d 89 d9
                                       %r11,%r9
48e209:
                                mov
                                      $0x7f,%r9d
48e20c:
            41 83 e1 7f
                                and
48e210:
            49 d3 e1
                                shl
                                     %cl,%r9
48e213:
            83 c1 07
                                      $0x7,%ecx
                                add
                                     %r9,%r8
48e216:
            4d 09 c8
                                or
                                test %r11b,%r11b
48e219:
            45 84 db
48e21c:
            78 e2
                                     48e200 < read_encoded_value_with_base+0x90>
                                js
                                      48e1a7 < read encoded value with base+0x37>
48e21e:
            eb 87
            44 0f b7 02
                                movzwl (%rdx),%r8d
48e220:
48e224:
            48 8d 42 02
                                lea 0x2(%rdx),%rax
48e228:
            e9 7a ff ff ff
                                jmpq 48e1a7 <read_encoded_value_with_base+0x37>
                                nopl (%rax)
48e22d:
            0f 1f 00
                                       (%rdx),%r8d
48e230:
            44 8b 02
                                mov
48e233:
            48 8d 42 04
                                lea 0x4(%rdx),%rax
                                impg 48e1a7 < read encoded value with base+0x37>
48e237:
            e9 6b ff ff ff
                                nopl 0x0(\%rax)
48e23c:
            0f 1f 40 00
                                movslq (%rdx),%r8
48e240:
            4c 63 02
48e243:
            48 8d 42 04
                                     0x4(%rdx),%rax
            e9 5b ff ff ff
48e247:
                                impg 48e1a7 < read encoded value with base+0x37>
48e24c:
            0f 1f 40 00
                                nopl 0x0(\%rax)
            48 89 d0
                                       %rdx,%rax
48e250:
                                mov
48e253:
            45 31 c0
                                xor
                                      %r8d,%r8d
                                      %ecx,%ecx
48e256:
            31 c9
                                xor
48e258:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48e25f:
            00
            48 83 c0 01
                                      $0x1,%rax
48e260:
                                add
            44 0f b6 58 ff
                                movzbl -0x1(%rax),%r11d
48e264:
48e269:
            4d 89 d9
                                       %r11,%r9
                                mov
                                      $0x7f,%r9d
48e26c:
            41 83 e1 7f
                                and
```

```
48e270:
             49 d3 e1
                                 shl
                                      %cl,%r9
                                 add $0x7,%ecx
 48e273:
             83 c1 07
 48e276:
             4d 09 c8
                                 or
                                      %r9,%r8
 48e279:
             45 84 db
                                 test %r11b,%r11b
 48e27c:
             78 e2
                                     48e260 < read encoded value with base+0xf0>
                                 is
 48e27e:
             83 f9 3f
                                 cmp $0x3f,%ecx
             0f 87 20 ff ff ff
 48e281:
                                 ja
                                      48e1a7 < read_encoded_value_with_base+0x37>
             41 83 e3 40
                                      $0x40,%r11d
 48e287:
                                 and
 48e28b:
             0f 84 16 ff ff ff
                                      48e1a7 < read_encoded_value_with_base+0x37>
                                 ie
 48e291:
             49 c7 c1 ff ff ff
                                 %cl,%r9
 48e298:
             49 d3 e1
                                 shl
                                      %r9.%r8
 48e29b:
             4d 09 c8
                                 or
 48e29e:
             e9 09 ff ff ff
                                 impg 48e1ac < read encoded value with base + 0x3c >
 48e2a3:
             48 83 ec 08
                                       $0x8,%rsp
                                 callq 40e090 <abort>
 48e2a7:
             e8 e4 fd f7 ff
             0f 1f 40 00
                                 nopl 0x0(\%rax)
 48e2ac:
00000000048e2b0 <get_cie_encoding>:
 48e2b0:
             55
                          push
                                %rbp
 48e2b1:
             53
                          push
                                %rbx
 48e2b2:
             48 8d 5f 09
                                      0x9(%rdi),%rbx
                                 lea
 48e2b6:
             48 89 fd
                                 mov
                                       %rdi,%rbp
 48e2b9:
             48 83 ec 18
                                 sub
                                       $0x18,%rsp
                                       %rbx,%rdi
 48e2bd:
             48 89 df
                                 mov
 48e2c0:
             e8 fb 21 f7 ff
                                 callq 4004c0 <.plt+0xa8>
 48e2c5:
             0f b6 4d 08
                                 movzbl 0x8(%rbp),%ecx
             48 8d 54 03 01
 48e2c9:
                                      0x1(%rbx,%rax,1),%rdx
                                 lea
 48e2ce:
             80 f9 03
                                       $0x3,%cl
                                 cmp
             0f 87 e9 00 00 00
                                      48e3c0 < get_cie_encoding+0x110>
 48e2d1:
                                 ja
 48e2d7:
             80 7d 09 7a
                                 cmpb $0x7a,0x9(\%rbp)
             74 13
                                      48e2f0 < get cie encoding+0x40>
 48e2db:
                                 je
                                      %eax,%eax
 48e2dd:
             31 c0
                                 xor
 48e2df:
             48 83 c4 18
                                 add
                                       $0x18,%rsp
 48e2e3:
             5b
                                %rbx
                          pop
 48e2e4:
             5d
                          pop
                                %rbp
 48e2e5:
             c3
                          retq
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48e2e6:
 48e2ed:
             00 00 00
 48e2f0:
             48 83 c2 01
                                 add
                                       $0x1,%rdx
                                 cmpb $0x0,-0x1(\%rdx)
 48e2f4:
             80 7a ff 00
 48e2f8:
             79 19
                                      48e313 <get_cie_encoding+0x63>
                                 ins
 48e2fa:
             48 83 c2 01
                                 add $0x1,%rdx
                                 cmpb $0x0,-0x1(\%rdx)
 48e2fe:
             80 7a ff 00
                                     48e2f0 <get_cie_encoding+0x40>
 48e302:
             78 ec
 48e304:
             eb 0d
                                 jmp 48e313 < get_cie_encoding+0x63>
 48e306:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48e30d:
             00 00 00
                                       %rax,%rdx
 48e310:
             48 89 c2
                                 mov
             48 8d 42 01
                                      0x1(%rdx),%rax
 48e313:
                                 lea
             80 78 ff 00
                                 cmpb $0x0,-0x1(\%rax)
 48e317:
 48e31b:
             78 f3
                                      48e310 < get cie encoding+0x60>
                                 is
             80 f9 01
                                       $0x1,%cl
 48e31d:
                                 cmp
```

```
48e320:
            0f 84 8a 00 00 00
                                     48e3b0 < get cie encoding+0x100>
48e326:
            66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
48e32d:
            00 00 00
48e330:
            48 83 c0 01
                                add $0x1,%rax
                                cmpb $0x0,-0x1(\%rax)
48e334:
            80 78 ff 00
                                     48e330 < get cie encoding+0x80>
48e338:
            78 f6
                                is
48e33a:
            48 8d 5d 0a
                                lea
                                     0xa(%rbp),%rbx
48e33e:
            66.90
                                xchg %ax,%ax
                                add $0x1,%rax
48e340:
            48 83 c0 01
                                cmpb $0x0,-0x1(\%rax)
48e344:
            80 78 ff 00
                                     48e340 <get cie encoding+0x90>
48e348:
            78 f6
48e34a:
            0f b6 55 0a
                                movzbl 0xa(%rbp),%edx
                                lea 0x8(\%rsp),\%rbp
48e34e:
            48 8d 6c 24 08
48e353:
            80 fa 52
                                cmp
                                       $0x52,%dl
                                     48e379 <get_cie_encoding+0xc9>
48e356:
            75 21
                                jne
            eb 44
                                      48e39e <get cie encoding+0xee>
48e358:
                                imp
                                nopw 0x0(\%rax,\%rax,1)
48e35a:
            66 0f 1f 44 00 00
                                cmp $0x4c,%dl
48e360:
            80 fa 4c
48e363:
            0f 85 74 ff ff ff
                                ine
                                     48e2dd <get cie encoding+0x2d>
48e369:
            48 83 c3 01
                                add
                                      $0x1,%rbx
48e36d:
            0f b6 13
                                movzbl (%rbx),%edx
                                      $0x1,%rax
48e370:
            48 83 c0 01
                                add
48e374:
            80 fa 52
                                cmp
                                      $0x52,%dl
            74 25
                                     48e39e <get_cie_encoding+0xee>
48e377:
                                je
            80 fa 50
                                       $0x50,%dl
48e379:
                                cmp
48e37c:
            75 e2
                                ine
                                     48e360 <get_cie_encoding+0xb0>
            0f b6 38
                                movzbl (%rax),%edi
48e37e:
            48 8d 50 01
                                lea 0x1(\%rax),\%rdx
48e381:
                                      %esi,%esi
48e385:
            31 f6
                                xor
48e387:
            48 83 c3 01
                                add
                                      $0x1,%rbx
                                       %rbp,%rcx
48e38b:
            48 89 e9
                                mov
48e38e:
            83 e7 7f
                                      $0x7f,%edi
                                and
48e391:
            e8 da fd ff ff
                                callq 48e170 <read_encoded_value_with_base>
                                movzbl (%rbx),%edx
48e396:
            0f b6 13
                                      $0x52,%dl
48e399:
            80 fa 52
                                cmp
48e39c:
            75 db
                                ine
                                     48e379 < get_cie_encoding+0xc9>
48e39e:
            0f b6 00
                                movzbl (%rax),%eax
                                      $0x18,%rsp
48e3a1:
            48 83 c4 18
                                add
48e3a5:
            5b
                               %rbx
                          pop
48e3a6:
            5d
                               %rbp
                          pop
            с3
48e3a7:
                          retq
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48e3a8:
48e3af:
            00
            48 8d 42 02
                                    0x2(%rdx),%rax
48e3b0:
                                lea
48e3b4:
            e9 81 ff ff ff
                                jmpq 48e33a <get_cie_encoding+0x8a>
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48e3b9:
                                cmpb $0x8,(%rdx)
48e3c0:
            80 3a 08
            b8 ff 00 00 00
                                mov
                                       $0xff,%eax
48e3c3:
            0f 85 11 ff ff ff
                                     48e2df <get_cie_encoding+0x2f>
48e3c8:
                                jne
            80 7a 01 00
                                cmpb $0x0,0x1(\%rdx)
48e3ce:
48e3d2:
            0f 85 07 ff ff ff
                                     48e2df <get cie encoding+0x2f>
                                ine
                                      $0x2,%rdx
48e3d8:
            48 83 c2 02
                                add
```

```
48e3e1:
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48e3e6:
 48e3ed:
             00 00 00
00000000048e3f0 < size of encoded value.part.3>:
 48e3f0:
             83 e7 07
                                  and $0x7,%edi
 48e3f3:
             40 80 ff 02
                                        $0x2,%dil
                                  cmp
 48e3f7:
             74 17
                                      48e410 <size_of_encoded_value.part.3+0x20>
                                  ie
 48e3f9:
             76 35
                                      48e430 <size_of_encoded_value.part.3+0x40>
             40 80 ff 03
                                        $0x3,%dil
 48e3fb:
                                  cmp
                                        $0x4.%eax
 48e3ff:
             b8 04 00 00 00
                                  mov
 48e404:
             75 1a
                                       48e420 < size of encoded value.part.3+0x30>
                                  ine
 48e406:
             f3 c3
                                  repz retq
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48e408:
 48e40f:
             00
 48e410:
             b8 02 00 00 00
                                  mov
                                        $0x2,%eax
 48e415:
             c3
                           retq
 48e416:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48e41d:
             00 00 00
 48e420:
             40 80 ff 04
                                        $0x4,%dil
                                  cmp
 48e424:
             75 Of
                                  ine
                                       48e435 <size_of_encoded_value.part.3+0x45>
 48e426:
             mov
                                        $0x8,%eax
 48e42b:
             с3
                           retq
                                  nopl 0x0(\%rax)
 48e42c:
             0f 1f 40 00
 48e430:
             40 84 ff
                                  test %dil,%dil
 48e433:
             74 f1
                                      48e426 < size of encoded value.part.3+0x36>
                                  ie
 48e435:
             48 83 ec 08
                                       $0x8,%rsp
                                  sub
 48e439:
                                  callq 40e090 <abort>
             e8 52 fc f7 ff
 48e43e:
             66 90
                                  xchg %ax,%ax
00000000048e440 <base_from_object.part.4>:
 48e440:
             83 e7 70
                                  and $0x70,%edi
 48e443:
             40 80 ff 20
                                        $0x20,%dil
                                  cmp
                                      48e470 <base_from_object.part.4+0x30>
 48e447:
             74 27
                                  ie
 48e449:
             76 15
                                  ibe
                                      48e460 <base from object.part.4+0x20>
 48e44b:
             40 80 ff 30
                                        $0x30,%dil
                                  cmp
                                       48e478 <base_from_object.part.4+0x38>
 48e44f:
             75 27
                                  ine
 48e451:
             48 8b 46 10
                                  mov
                                        0x10(%rsi),%rax
 48e455:
             c3
                           retq
 48e456:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48e45d:
             00 00 00
 48e460:
             40 84 ff
                                  test %dil,%dil
                                      48e46b <br/>base_from_object.part.4+0x2b>
 48e463:
             74 06
                                  je
 48e465:
             40 80 ff 10
                                  cmp
                                        $0x10,%dil
 48e469:
             75 13
                                       48e47e <base from object.part.4+0x3e>
                                  ine
 48e46b:
             31 c0
                                       %eax,%eax
                                  xor
 48e46d:
             c3
                           retq
             66 90
                                       %ax,%ax
 48e46e:
                                  xchg
             48 8b 46 08
 48e470:
                                        0x8(%rsi),%rax
                                  mov
 48e474:
             с3
                           retq
             0f 1f 00
 48e475:
                                  nopl (%rax)
```

impg 48e2d7 < get cie encoding+0x27>

48e3dc:

e9 f6 fe ff ff

```
48e478:
             40 80 ff 50
                                        $0x50,%dil
                                  cmp
 48e47c:
             74 ed
                                       48e46b <br/>base from object.part.4+0x2b>
                                  ie
 48e47e:
             48 83 ec 08
                                  sub
                                       $0x8,%rsp
 48e482:
             e8 09 fc f7 ff
                                  callq 40e090 <abort>
 48e487:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
 48e48e:
             00 00
00000000048e490 <fde single encoding compare>:
 48e490:
             41 56
                                  push %r14
             41 55
 48e492:
                                  push
                                        %r13
 48e494:
             49 89 fd
                                         %rdi,%r13
                                  mov
 48e497:
             41 54
                                        %r12
                                  push
 48e499:
             55
                           push %rbp
 48e49a:
             45 31 e4
                                  xor
                                       %r12d,%r12d
 48e49d:
             53
                                 %rbx
                           push
 48e49e:
             48 89 f5
                                        %rsi,%rbp
                                  mov
 48e4a1:
             48 89 d3
                                  mov
                                         %rdx,%rbx
 48e4a4:
             48 83 ec 10
                                       $0x10,%rsp
                                  sub
 48e4a8:
             0f b7 47 20
                                  movzwl 0x20(%rdi),%eax
 48e4ac:
             66 c1 e8 03
                                  shr
                                       $0x3,%ax
 48e4b0:
             3c ff
                                 $0xff,%al
                           cmp
 48e4b2:
             44 0f b6 f0
                                  movzbl %al,%r14d
 48e4b6:
             74.0e
                                       48e4c6 < fde single encoding compare + 0x36>
             48 89 fe
                                        %rdi,%rsi
 48e4b8:
                                  mov
 48e4bb:
             44 89 f7
                                  mov
                                        %r14d,%edi
 48e4be:
             e8 7d ff ff ff
                                  callq 48e440 <base from object.part.4>
 48e4c3:
             49 89 c4
                                        %rax,%r12
                                  mov
             48 8d 55 08
 48e4c6:
                                       0x8(%rbp),%rdx
                                  lea
                                        %rsp,%rcx
 48e4ca:
             48 89 e1
                                  mov
 48e4cd:
             4c 89 e6
                                         %r12,%rsi
                                  mov
 48e4d0:
             44 89 f7
                                        %r14d,%edi
                                  mov
 48e4d3:
             e8 98 fc ff ff
                                  callq 48e170 <read_encoded_value_with_base>
 48e4d8:
             41 0f b7 7d 20
                                  movzwl 0x20(%r13),%edi
 48e4dd:
             48 8d 53 08
                                       0x8(%rbx),%rdx
                                  lea
             48 8d 4c 24 08
                                       0x8(%rsp),%rcx
 48e4e1:
                                  lea
 48e4e6:
             4c 89 e6
                                  mov
                                        %r12,%rsi
             66 c1 ef 03
                                       $0x3,%di
 48e4e9:
                                  shr
 48e4ed:
             40 0f b6 ff
                                  movzbl %dil.%edi
 48e4f1:
             e8 7a fc ff ff
                                  callg 48e170 < read encoded value with base>
 48e4f6:
             48 8b 5c 24 08
                                        0x8(\%rsp),\%rbx
                                  mov
 48e4fb:
             48 39 1c 24
                                        %rbx,(%rsp)
                                  cmp
 48e4ff:
             b8 01 00 00 00
                                  mov
                                        $0x1,%eax
             77 02
 48e504:
                                       48e508 < fde single encoding compare + 0x78 >
                                  ja
 48e506:
             19 c0
                                  sbb
                                       %eax,%eax
 48e508:
             48 83 c4 10
                                  add
                                       $0x10,%rsp
 48e50c:
             5b
                                 %rbx
                           pop
 48e50d:
             5d
                                 %rbp
                           pop
             41 5c
 48e50e:
                                  pop
                                        %r12
             41 5d
                                  pop
                                        %r13
 48e510:
             41 5e
                                        %r14
 48e512:
                                  pop
             c3
 48e514:
                           retq
 48e515:
             90
                           nop
```

```
48e516:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
             00 00 00
 48e51d:
00000000048e520 < linear search fdes>:
 48e520:
             41 57
                                 push %r15
 48e522:
             41 56
                                 push %r14
 48e524:
             49 89 f7
                                 mov
                                       %rsi,%r15
             41 55
 48e527:
                                 push %r13
                                 push %r12
 48e529:
             41 54
 48e52b:
             55
                          push %rbp
 48e52c:
             53
                          push %rbx
             48 89 d5
 48e52d:
                                 mov
                                       %rdx,%rbp
 48e530:
             48 89 fb
                                       %rdi,%rbx
                                 mov
 48e533:
             48 83 ec 38
                                       $0x38,%rsp
                                 sub
 48e537:
             44 0f b7 4f 20
                                 movzwl 0x20(%rdi),%r9d
                                      $0x3,%r9w
 48e53c:
             66 41 c1 e9 03
                                 shr
 48e541:
             41 80 f9 ff
                                 cmp
                                       $0xff,%r9b
 48e545:
             0f 85 b5 01 00 00
                                      48e700 < linear search fdes+0x1e0>
                                 ine
 48e54b:
             48 c7 44 24 08 00 00 movg $0x0,0x8(%rsp)
 48e552:
             00.00
 48e554:
             41 be ff 00 00 00
                                       $0xff,%r14d
                                 mov
 48e55a:
             41 8b 17
                                 mov
                                       (%r15),%edx
 48e55d:
             85 d2
                                 test %edx.%edx
             0f 84 6f 01 00 00
                                      48e6d4 < linear search fdes+0x1b4>
 48e55f:
                                 ie
 48e565:
             48 8d 44 24 20
                                      0x20(%rsp),%rax
                                 lea
 48e56a:
             45 31 ed
                                      %r13d,%r13d
                                 xor
             48 89 44 24 10
                                       %rax,0x10(%rsp)
 48e56d:
                                 mov
 48e572:
             48 8d 44 24 28
                                      0x28(%rsp),%rax
                                 lea
             48 89 44 24 18
                                       %rax,0x18(%rsp)
 48e577:
                                 mov
 48e57c:
             eb 3b
                                       48e5b9 linear_search_fdes+0x99>
                                 jmp
             66 90
 48e57e:
                                 xchg %ax,%ax
             49 8b 47 08
                                       0x8(%r15),%rax
 48e580:
                                 mov
 48e584:
             49 8b 57 10
                                 mov
                                       0x10(%r15),%rdx
 48e588:
             48 85 c0
                                 test %rax,%rax
                                       %rax,0x20(%rsp)
 48e58b:
             48 89 44 24 20
                                 mov
 48e590:
             48 89 54 24 28
                                 mov
                                       %rdx,0x28(%rsp)
 48e595:
             74 0f
                                      48e5a6 < linear_search_fdes+0x86>
                                 je
 48e597:
             48 89 e9
                                       %rbp,%rcx
                                 mov
                                       %rax,%rcx
 48e59a:
             48 29 c1
                                 sub
 48e59d:
             48 39 d1
                                       %rdx,%rcx
                                 cmp
             0f 82 d6 00 00 00
                                      48e67c linear_search_fdes+0x15c>
 48e5a0:
                                 jb
 48e5a6:
             41 8b 07
                                 mov
                                       (%r15),%eax
 48e5a9:
             4d 8d 7c 07 04
                                      0x4(%r15,%rax,1),%r15
                                 lea
 48e5ae:
             41 8b 07
                                 mov (%r15),%eax
 48e5b1:
             85 c0
                                 test %eax,%eax
 48e5b3:
             0f 84 1b 01 00 00
                                      48e6d4 < linear search fdes+0x1b4>
                                 je
                                 movslq 0x4(%r15),%rax
 48e5b9:
             49 63 47 04
                                 test %eax,%eax
 48e5bd:
             85 c0
             74 e5
                                      48e5a6 linear_search_fdes+0x86>
 48e5bf:
                                 je
             f6 43 20 04
 48e5c1:
                                 testb $0x4,0x20(%rbx)
             74 39
                                      48e600 < linear search fdes+0xe0>
 48e5c5:
                                 je
```

lea

0x4(%r15),%r11

48e5c7:

4d 8d 5f 04

```
48e5cb:
            49 29 c3
                                 sub
                                       %rax,%r11
48e5ce:
            4d 39 eb
                                       %r13,%r11
                                 cmp
48e5d1:
            4d 89 dc
                                 mov
                                       %r11,%r12
48e5d4:
            74 2a
                                      48e600 < linear search fdes+0xe0>
                                 ie
48e5d6:
            4c 89 df
                                       %r11,%rdi
                                 mov
48e5d9:
            e8 d2 fc ff ff
                                 callq 48e2b0 <get cie encoding>
48e5de:
            3c ff
                          cmp
                                 $0xff,%al
48e5e0:
            41 89 c6
                                       %eax,%r14d
                                 mov
48e5e3:
            0f b6 f8
                                 movzbl %al,%edi
                                      48e690 < linear_search_fdes+0x170>
48e5e6:
            0f 84 a4 00 00 00
                                       %rbx,%rsi
48e5ec:
            48 89 de
                                 mov
48e5ef:
            4d 89 e5
                                       %r12.%r13
                                 mov
                                 callq 48e440 <base from object.part.4>
48e5f2:
            e8 49 fe ff ff
48e5f7:
            48 89 44 24 08
                                       %rax,0x8(%rsp)
                                 mov
                                 nopl 0x0(\%rax)
48e5fc:
            0f 1f 40 00
                                 test %r14d.%r14d
48e600:
            45 85 f6
48e603:
            0f 84 77 ff ff ff
                                 ie
                                      48e580 linear_search_fdes+0x60>
48e609:
            48 8b 4c 24 10
                                       0x10(\%rsp),\%rcx
                                 mov
48e60e:
            48 8b 74 24 08
                                       0x8(%rsp),%rsi
                                 mov
48e613:
            49 8d 57 08
                                 lea 0x8(%r15),%rdx
48e617:
            45 0f b6 e6
                                 movzbl %r14b,%r12d
48e61b:
            44 89 e7
                                 mov
                                       %r12d,%edi
48e61e:
            e8 4d fb ff ff
                                 callg 48e170 < read encoded value with base>
48e623:
            48 8b 4c 24 18
                                 mov
                                       0x18(\%rsp),\%rcx
48e628:
            44 89 f7
                                       %r14d,%edi
                                 mov
48e62b:
            31 f6
                                       %esi,%esi
                                 xor
            83 e7 0f
                                       $0xf,%edi
48e62d:
                                 and
            48 89 c2
                                       %rax,%rdx
48e630:
                                 mov
            e8 38 fb ff ff
                                 callq 48e170 <read_encoded_value_with_base>
48e633:
48e638:
            41 80 fe ff
                                       $0xff,%r14b
                                 cmp
            0f 84 64 ff ff ff
                                      48e5a6 < linear search fdes+0x86>
48e63c:
                                 je
48e642:
            44 89 e7
                                       %r12d,%edi
                                 mov
48e645:
            e8 a6 fd ff ff
                                 callg 48e3f0 <size of encoded value.part.3>
48e64a:
            83 f8 07
                                       $0x7,%eax
                                 cmp
            48 c7 c2 ff ff ff ff
                                       $0xffffffffffffff,%rdx
48e64d:
                                 mov
48e654:
            0f 86 8e 00 00 00
                                 ibe
                                      48e6e8 < linear search fdes+0x1c8>
48e65a:
            48 8b 44 24 20
                                       0x20(\%rsp),\%rax
                                 mov
48e65f:
            48 85 d0
                                 test %rdx.%rax
48e662:
            Of 84 3e ff ff ff
                                      48e5a6 < linear search fdes+0x86>
                                 ie
                                       0x28(%rsp),%rdx
48e668:
            48 8b 54 24 28
                                 mov
            48 89 e9
                                       %rbp,%rcx
48e66d:
                                 mov
48e670:
            48 29 c1
                                 sub
                                       %rax,%rcx
48e673:
            48 39 d1
                                       %rdx.%rcx
                                 cmp
                                      48e5a6 linear_search_fdes+0x86>
48e676:
            Of 83 2a ff ff ff
                                 iae
48e67c:
            48 83 c4 38
                                 add
                                       $0x38,%rsp
48e680:
            4c 89 f8
                                 mov
                                       %r15.%rax
48e683:
            5b
                                %rbx
                          pop
48e684:
            5d
                          pop
                                %rbp
                                       %r12
48e685:
            41 5c
                                 pop
            41 5d
                                       %r13
48e687:
                                 pop
48e689:
            41 5e
                                       %r14
                                 pop
            41 5f
48e68b:
                                 pop
                                       %r15
```

```
48e68d:
             c3
                           retq
             66 90
 48e68e:
                                  xchg %ax,%ax
 48e690:
             48 8b 4c 24 10
                                  mov
                                        0x10(\%rsp),\%rcx
 48e695:
             49 8d 57 08
                                  lea
                                       0x8(%r15),%rdx
 48e699:
             31 f6
                                       %esi,%esi
                                  xor
 48e69b:
             4d 89 e5
                                        %r12,%r13
                                  mov
 48e69e:
             e8 cd fa ff ff
                                  callq 48e170 <read_encoded_value_with_base>
             48 8b 4c 24 18
                                        0x18(%rsp),%rcx
 48e6a3:
                                  mov
             44 89 f7
                                        %r14d,%edi
 48e6a8:
                                  mov
 48e6ab:
             31 f6
                                       %esi,%esi
                                  xor
                                       $0xf,%edi
 48e6ad:
             83 e7 0f
                                  and
             48 89 c2
                                        %rax,%rdx
 48e6b0:
                                  mov
                                  callq 48e170 < read encoded value with base>
 48e6b3:
             e8 b8 fa ff ff
 48e6b8:
             41 8b 07
                                        (%r15),%eax
                                  mov
 48e6bb:
             48 c7 44 24 08 00 00 movg $0x0,0x8(%rsp)
             00 00
 48e6c2:
 48e6c4:
             4d 8d 7c 07 04
                                  lea
                                       0x4(%r15,%rax,1),%r15
 48e6c9:
             41 8b 07
                                        (%r15),%eax
                                  mov
 48e6cc:
             85 c0
                                  test %eax,%eax
 48e6ce:
             0f 85 e5 fe ff ff
                                  ine
                                       48e5b9 < linear search fdes+0x99>
 48e6d4:
             48 83 c4 38
                                  add
                                       $0x38,%rsp
 48e6d8:
             31 c0
                                  xor
                                       %eax,%eax
 48e6da:
             5b
                                 %rbx
                           pop
 48e6db:
             5d
                           pop
                                 %rbp
 48e6dc:
             41 5c
                                        %r12
                                  pop
 48e6de:
             41 5d
                                        %r13
                                  pop
                                        %r14
 48e6e0:
             41 5e
                                  DOD
             41 5f
 48e6e2:
                                        %r15
                                  pop
 48e6e4:
             c3
                           retq
 48e6e5:
             0f 1f 00
                                  nopl (%rax)
             8d 0c c5 00 00 00 00 lea 0x0(,\%rax,8),\%ecx
 48e6e8:
             ba 01 00 00 00
                                        $0x1,%edx
 48e6ef:
                                  mov
 48e6f4:
             48 d3 e2
                                  shl
                                       %cl,%rdx
 48e6f7:
             48 83 ea 01
                                  sub
                                       $0x1,%rdx
                                  jmpq 48e65a linear_search_fdes+0x13a>
 48e6fb:
             e9 5a ff ff ff
 48e700:
             45 0f b6 f1
                                  movzbl %r9b,%r14d
 48e704:
             48 89 fe
                                        %rdi,%rsi
                                  mov
 48e707:
             44 89 f7
                                        %r14d,%edi
                                  mov
 48e70a:
             e8 31 fd ff ff
                                  callq 48e440 <base from object.part.4>
 48e70f:
             48 89 44 24 08
                                  mov
                                        %rax,0x8(%rsp)
                                  jmpq 48e55a linear_search_fdes+0x3a>
             e9 41 fe ff ff
 48e714:
 48e719:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
00000000048e720 <fde_mixed_encoding_compare>:
 48e720:
             41 55
                                  push %r13
             41 54
 48e722:
                                  push
                                        %r12
             49 89 fc
 48e724:
                                  mov
                                        %rdi,%r12
                           push %rbp
 48e727:
             55
                                 %rbx
 48e728:
             53
                           push
             48 8d 7e 04
 48e729:
                                  lea
                                       0x4(%rsi),%rdi
             48 89 f5
                                        %rsi,%rbp
 48e72d:
                                  mov
             48 89 d3
 48e730:
                                        %rdx,%rbx
                                  mov
```

```
48e733:
             48 83 ec 18
                                  sub
                                       $0x18,%rsp
 48e737:
             48 63 46 04
                                  movslq 0x4(%rsi),%rax
 48e73b:
             48 83 c5 08
                                  add
                                       $0x8,%rbp
 48e73f:
             48 29 c7
                                       %rax.%rdi
                                  sub
 48e742:
             e8 69 fb ff ff
                                  callq 48e2b0 <get_cie_encoding>
                                       %esi,%esi
 48e747:
             31 f6
                                  xor
 48e749:
             3c ff
                                 $0xff,%al
                           cmp
 48e74b:
             44 0f b6 e8
                                  movzbl %al.%r13d
 48e74f:
             74.0e
                                      48e75f <fde mixed encoding compare+0x3f>
                                  ie
                                  mov
 48e751:
             4c 89 e6
                                        %r12,%rsi
             44 89 ef
 48e754:
                                  mov
                                        %r13d,%edi
             e8 e4 fc ff ff
                                  callq 48e440 <base from object.part.4>
 48e757:
 48e75c:
             48 89 c6
                                        %rax,%rsi
                                  mov
 48e75f:
             48 89 ea
                                        %rbp,%rdx
                                  mov
                                        %rsp,%rcx
 48e762:
             48 89 e1
                                  mov
             44 89 ef
                                        %r13d,%edi
 48e765:
                                  mov
 48e768:
             e8 03 fa ff ff
                                  callq 48e170 <read_encoded_value_with_base>
 48e76d:
             48 63 43 04
                                  movslg 0x4(%rbx),%rax
 48e771:
             48 8d 7b 04
                                      0x4(%rbx),%rdi
                                  lea
 48e775:
             48 83 c3 08
                                  add
                                       $0x8,%rbx
 48e779:
             48 29 c7
                                       %rax.%rdi
                                  sub
 48e77c:
             e8 2f fb ff ff
                                  callq 48e2b0 <get_cie_encoding>
 48e781:
             31 f6
                                  xor
                                       %esi,%esi
 48e783:
             3c ff
                           cmp
                                 $0xff,%al
 48e785:
             0f b6 e8
                                  movzbl %al,%ebp
 48e788:
             74 0d
                                      48e797 < fde mixed encoding compare + 0x77>
                                  ie
             4c 89 e6
                                        %r12,%rsi
 48e78a:
                                  mov
                                        %ebp,%edi
 48e78d:
             89 ef
                                  mov
             e8 ac fc ff ff
                                  callq 48e440 <base_from_object.part.4>
 48e78f:
 48e794:
             48 89 c6
                                        %rax,%rsi
                                  mov
             48 8d 4c 24 08
 48e797:
                                  lea 0x8(\%rsp),%rcx
 48e79c:
             48 89 da
                                        %rbx,%rdx
                                  mov
 48e79f:
             89 ef
                                  mov
                                        %ebp,%edi
 48e7a1:
             e8 ca f9 ff ff
                                  callq 48e170 <read_encoded_value_with_base>
             48 8b 54 24 08
 48e7a6:
                                  mov
                                        0x8(\%rsp),\%rdx
 48e7ab:
             48 39 14 24
                                  cmp
                                        %rdx,(%rsp)
             b8 01 00 00 00
                                        $0x1,%eax
 48e7af:
                                  mov
 48e7b4:
             77 02
                                      48e7b8 <fde mixed encoding compare+0x98>
                                  ia
 48e7b6:
             19 c0
                                  sbb
                                       %eax,%eax
 48e7b8:
             48 83 c4 18
                                  add
                                       $0x18,%rsp
                                 %rbx
 48e7bc:
             5b
                           pop
 48e7bd:
             5d
                                 %rbp
                           pop
             41 5c
 48e7be:
                                        %r12
                                  pop
 48e7c0:
             41 5d
                                  pop
                                        %r13
 48e7c2:
             с3
                           retq
 48e7c3:
             0f 1f 00
                                  nopl (%rax)
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48e7c6:
             00 00 00
 48e7cd:
00000000048e7d0 <classify_object_over_fdes>:
 48e7d0:
             41 57
                                  push %r15
 48e7d2:
             41 56
                                  push %r14
```

```
48e7d4:
            41 55
                                push %r13
48e7d6:
            41 54
                                push %r12
48e7d8:
            55
                         push
                               %rbp
48e7d9:
            53
                          push
                               %rbx
48e7da:
            48 83 ec 38
                                      $0x38,%rsp
                                sub
48e7de:
            8b 16
                                       (%rsi),%edx
                                mov
48e7e0:
            85 d2
                                test %edx,%edx
            0f 84 37 01 00 00
                                     48e91f <classify object over fdes+0x14f>
48e7e2:
                                je
            48 8d 44 24 28
                                     0x28(%rsp),%rax
48e7e8:
                                lea
48e7ed:
            48 89 fd
                                mov
                                       %rdi,%rbp
            49 89 f5
                                       %rsi,%r13
48e7f0:
                                mov
48e7f3:
            45 31 f6
                                xor
                                      %r14d,%r14d
48e7f6:
            45 31 ff
                                      %r15d,%r15d
                                xor
48e7f9:
            48 c7 44 24 18 00 00 movg $0x0,0x18(%rsp)
48e800:
            00 00
                                      %edx,%edx
48e802:
            31 d2
                                xor
                                       %rax,0x10(%rsp)
48e804:
            48 89 44 24 10
                                mov
48e809:
            e9 ce 00 00 00
                                       48e8dc <classify_object_over_fdes+0x10c>
                                jmpq
48e80e:
            66 90
                                xchg
                                       %ax,%ax
48e810:
            48 89 df
                                mov
                                       %rbx,%rdi
48e813:
            e8 98 fa ff ff
                                callq 48e2b0 <get_cie_encoding>
48e818:
            3d ff 00 00 00
                                cmp
                                       $0xff,%eax
48e81d:
            41 89 c7
                                mov
                                       %eax,%r15d
            0f 84 1a 01 00 00
                                     48e940 <classify_object_over_fdes+0x170>
48e820:
                                ie
48e826:
            45 31 f6
                                      %r14d,%r14d
                                xor
48e829:
            3c ff
                                $0xff,%al
                          cmp
                                       %al,0xf(%rsp)
48e82b:
            88 44 24 0f
                                mov
                                movzbl %al,%r12d
48e82f:
            44 0f b6 e0
            74 0e
                                     48e843 <classify_object_over_fdes+0x73>
48e833:
                                ie
48e835:
            48 89 ee
                                       %rbp,%rsi
                                mov
48e838:
            44 89 e7
                                       %r12d,%edi
                                mov
48e83b:
            e8 00 fc ff ff
                                callq 48e440 <base_from_object.part.4>
48e840:
            49 89 c6
                                mov
                                       %rax,%r14
48e843:
            0f b7 45 20
                                movzwl 0x20(%rbp),%eax
48e847:
            89 c2
                                mov
                                       %eax,%edx
48e849:
            66 81 e2 f8 07
                                and
                                      $0x7f8.%dx
            66 81 fa f8 07
                                       $0x7f8,%dx
48e84e:
                                cmp
48e853:
            0f 84 af 00 00 00
                                     48e908 < classify object over fdes+0x138>
                                ie
48e859:
            66 c1 e8 03
                                shr
                                     $0x3,%ax
                                movzbl %al,%eax
48e85d:
            0f b6 c0
48e860:
            44 39 f8
                                      %r15d,%eax
                                cmp
48e863:
            74 04
                                ie
                                     48e869 <classify_object_over_fdes+0x99>
48e865:
            80 4d 20 04
                                      $0x4,0x20(%rbp)
                                orb
                                       0x10(%rsp), %rcx
48e869:
            48 8b 4c 24 10
                                mov
48e86e:
            49 8d 55 08
                                lea
                                     0x8(%r13),%rdx
48e872:
            4c 89 f6
                                       %r14,%rsi
                                mov
48e875:
            44 89 e7
                                       %r12d,%edi
                                mov
            e8 f3 f8 ff ff
                                callq 48e170 <read_encoded_value_with_base>
48e878:
            80 7c 24 0f ff
                                cmpb $0xff,0xf(%rsp)
48e87d:
            48 89 da
48e882:
                                mov
                                       %rbx,%rdx
            74 44
                                     48e8cb <classify_object_over_fdes+0xfb>
48e885:
                                je
            44 89 e7
48e887:
                                       %r12d,%edi
                                mov
```

```
callq 48e3f0 <size_of_encoded_value.part.3>
48e88a:
            e8 61 fb ff ff
                                       $0x7,%eax
48e88f:
            83 f8 07
                                 cmp
            48 c7 c2 ff ff ff ff
48e892:
                                 mov
                                       $0xffffffffffffff,%rdx
48e899:
            77 13
                                      48e8ae <classify object over fdes+0xde>
                                 ia
            8d 0c c5 00 00 00 00 lea 0x0(,%rax,8),%ecx
48e89b:
48e8a2:
            ba 01 00 00 00
                                 mov $0x1,%edx
48e8a7:
            48 d3 e2
                                 shl %cl,%rdx
48e8aa:
            48 83 ea 01
                                      $0x1.%rdx
                                 sub
48e8ae:
            48 8b 44 24 28
                                 mov 0x28(%rsp),%rax
48e8b3:
            48 85 d0
                                 test %rdx,%rax
            74 10
                                      48e8c8 < classify_object_over_fdes+0xf8>
48e8b6:
                                 je
            48 83 44 24 18 01
                                 addg $0x1,0x18(%rsp)
48e8b8:
                                 cmp
48e8be:
            48 39 45 00
                                       %rax,0x0(%rbp)
48e8c2:
            76 04
                                 ibe
                                      48e8c8 <classify_object_over_fdes+0xf8>
            48 89 45 00
48e8c4:
                                       %rax,0x0(%rbp)
                                 mov
                                       %rbx,%rdx
48e8c8:
            48 89 da
                                 mov
48e8cb:
            41 8b 45 00
                                       0x0(\%r13),\%eax
                                 mov
48e8cf:
            4d 8d 6c 05 04
                                     0x4(%r13,%rax,1),%r13
                                 lea
48e8d4:
            41 8b 45 00
                                 mov 0x0(\%r13),\%eax
48e8d8:
            85 c0
                                 test %eax,%eax
48e8da:
            74 4c
                                      48e928 <classify_object_over_fdes+0x158>
                                 je
48e8dc:
            49 63 45 04
                                 movslq 0x4(%r13),%rax
48e8e0:
            85 c0
                                 test %eax,%eax
                                      48e8cb <classify_object_over_fdes+0xfb>
48e8e2:
            74 e7
                                 ie
48e8e4:
            49 8d 5d 04
                                 lea
                                     0x4(\%r13),\%rbx
48e8e8:
            48 29 c3
                                 sub
                                      %rax,%rbx
            48 39 d3
                                       %rdx,%rbx
48e8eb:
                                 cmp
                                      48e810 < classify object over fdes+0x40>
48e8ee:
            Of 85 1c ff ff ff
                                 ine
            44 88 7c 24 0f
                                       %r15b,0xf(%rsp)
48e8f4:
                                 mov
48e8f9:
            45 0f b6 e7
                                 movzbl %r15b,%r12d
                                 jmpg 48e869 < classify object over fdes+0x99>
48e8fd:
            e9 67 ff ff ff
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48e902:
48e908:
            0f b6 54 24 0f
                                 movzbl 0xf(%rsp),%edx
48e90d:
            66 25 07 f8
                                      $0xf807,%ax
                                 and
                                      $0x3,%edx
48e911:
            c1 e2 03
                                 shl
48e914:
            09 d0
                                      %edx,%eax
48e916:
            66 89 45 20
                                       %ax,0x20(%rbp)
                                 mov
                                 jmpq 48e869 < classify object over fdes+0x99>
48e91a:
            e9 4a ff ff ff
            48 c7 44 24 18 00 00 movg $0x0,0x18(%rsp)
48e91f:
            00 00
48e926:
48e928:
            48 8b 44 24 18
                                       0x18(\%rsp),\%rax
                                 mov
48e92d:
            48 83 c4 38
                                 add
                                       $0x38,%rsp
48e931:
            5b
                                %rbx
                          pop
48e932:
            5d
                                %rbp
                          pop
48e933:
            41 5c
                                       %r12
                                 pop
48e935:
            41 5d
                                       %r13
                                 pop
48e937:
            41 5e
                                       %r14
                                 pop
48e939:
            41 5f
                                       %r15
                                 pop
48e93b:
            c3
                          retq
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48e93c:
48e940:
            48 c7 44 24 18 ff ff
                                 movg $0xfffffffffffffff,0x18(%rsp)
48e947:
            ff ff
```

```
48e949:
             eb dd
                                       48e928 < classify object over fdes+0x158>
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
 48e94b:
000000000048e950 <add fdes>:
                                  push %r15
 48e950:
             41 57
 48e952:
             41 56
                                  push %r14
 48e954:
             41 55
                                  push %r13
 48e956:
             41 54
                                  push
                                        %r12
 48e958:
             49 89 f4
                                        %rsi,%r12
                                  mov
 48e95b:
             55
                           push %rbp
 48e95c:
             53
                           push %rbx
             48 89 fd
 48e95d:
                                  mov
                                        %rdi,%rbp
 48e960:
             48 89 d3
                                        %rdx,%rbx
                                  mov
 48e963:
             48 83 ec 38
                                       $0x38,%rsp
                                  sub
 48e967:
             44 0f b7 47 20
                                  movzwl 0x20(%rdi),%r8d
 48e96c:
             66 41 c1 e8 03
                                       $0x3,%r8w
                                  shr
 48e971:
             41 80 f8 ff
                                  cmp
                                        $0xff,%r8b
 48e975:
             0f 85 95 01 00 00
                                       48eb10 <add fdes+0x1c0>
                                  ine
 48e97b:
             48 c7 44 24 08 00 00 movg $0x0,0x8(%rsp)
 48e982:
             00 00
 48e984:
             41 be ff 00 00 00
                                        $0xff,%r14d
                                  mov
 48e98a:
             8b 13
                                  mov
                                        (%rbx),%edx
 48e98c:
             85 d2
                                  test %edx.%edx
                                      48ea05 <add_fdes+0xb5>
 48e98e:
             74 75
                                  ie
 48e990:
             48 8d 44 24 28
                                      0x28(%rsp),%rax
                                  lea
 48e995:
             45 31 ff
                                       %r15d,%r15d
                                  xor
 48e998:
             48 89 44 24 10
                                        %rax,0x10(%rsp)
                                  mov
 48e99d:
             0f 1f 00
                                  nopl (%rax)
             48 63 43 04
                                  movslq 0x4(%rbx),%rax
 48e9a0:
 48e9a4:
             85 c0
                                  test %eax,%eax
                                      48e9f8 <add fdes+0xa8>
 48e9a6:
             74 50
                                  ie
             f6 45 20 04
 48e9a8:
                                  testb $0x4,0x20(%rbp)
 48e9ac:
             74 6a
                                  je
                                      48ea18 <add_fdes+0xc8>
 48e9ae:
             4c 8d 4b 04
                                      0x4(%rbx),%r9
                                  lea
 48e9b2:
             49 29 c1
                                  sub
                                       %rax,%r9
 48e9b5:
             4d 39 f9
                                  cmp
                                        %r15,%r9
 48e9b8:
             4d 89 cd
                                  mov
                                        %r9,%r13
 48e9bb:
             74 5b
                                      48ea18 < add fdes + 0xc8 >
                                  ie
 48e9bd:
             4c 89 cf
                                        %r9,%rdi
                                  mov
 48e9c0:
             e8 eb f8 ff ff
                                  callq 48e2b0 <get_cie_encoding>
             3c ff
                                 $0xff,%al
 48e9c5:
                           cmp
 48e9c7:
             41 89 c6
                                  mov
                                        %eax,%r14d
 48e9ca:
             44 0f b6 d0
                                  movzbl %al,%r10d
                                  ine
 48e9ce:
             0f 85 ec 00 00 00
                                       48eac0 <add_fdes+0x170>
 48e9d4:
             48 8b 4c 24 10
                                  mov
                                        0x10(%rsp),%rcx
 48e9d9:
             48 8d 53 08
                                       0x8(%rbx),%rdx
                                  lea
 48e9dd:
             31 f6
                                       %esi,%esi
                                  xor
 48e9df:
             44 89 d7
                                  mov
                                        %r10d,%edi
                                  callq 48e170 <read_encoded_value_with_base>
 48e9e2:
             e8 89 f7 ff ff
             48 c7 44 24 08 00 00 movq $0x0,0x8(%rsp)
 48e9e7:
             00 00
 48e9ee:
             4d 89 ef
 48e9f0:
                                        %r13,%r15
                                  mov
```

```
48e9f3:
            0f 1f 44 00 00
                                 nopl 0x0(\%rax.\%rax.1)
                                       (%rbx),%eax
48e9f8:
            8b 03
                                 mov
48e9fa:
            48 8d 5c 03 04
                                 lea
                                      0x4(%rbx,%rax,1),%rbx
48e9ff:
            8b 03
                                       (%rbx),%eax
                                 mov
                                 test %eax,%eax
48ea01:
            85 c0
                                      48e9a0 <add fdes+0x50>
48ea03:
            75 9b
                                 ine
48ea05:
            48 83 c4 38
                                 add
                                      $0x38,%rsp
48ea09:
                                %rbx
            5b
                          pop
48ea0a:
            5d
                                %rbp
                          pop
                                       %r12
48ea0b:
            41 5c
                                 pop
            41 5d
                                       %r13
48ea0d:
                                 pop
            41 5e
                                       %r14
48ea0f:
                                 pop
            41 5f
48ea11:
                                       %r15
                                 pop
48ea13:
            с3
                          retq
            0f 1f 40 00
                                 nopl 0x0(%rax)
48ea14:
                                      %r14d,%r14d
48ea18:
            45 85 f6
                                 test
48ea1b:
            75 3b
                                 ine
                                      48ea58 <add fdes+0x108>
48ea1d:
            45 31 f6
                                      %r14d,%r14d
                                 xor
48ea20:
            48 83 7b 08 00
                                 cmpg $0x0.0x8(\%rbx)
48ea25:
            74 d1
                                 ie
                                     48e9f8 <add fdes+0xa8>
48ea27:
            49 8b 04 24
                                       (%r12),%rax
                                 mov
                                 test %rax,%rax
48ea2b:
            48 85 c0
48ea2e:
            74 c8
                                 ie
                                     48e9f8 <add fdes+0xa8>
            48 8b 50 08
                                       0x8(%rax),%rdx
48ea30:
                                 mov
48ea34:
            48 8d 4a 01
                                      0x1(%rdx),%rcx
                                 lea
48ea38:
            48 89 48 08
                                       %rcx,0x8(%rax)
                                 mov
                                       %rbx,0x10(%rax,%rdx,8)
48ea3c:
            48 89 5c d0 10
                                 mov
                                       (%rbx),%eax
48ea41:
            8b 03
                                 mov
            48 8d 5c 03 04
                                      0x4(%rbx,%rax,1),%rbx
48ea43:
                                 lea
48ea48:
            8b 03
                                       (%rbx),%eax
                                 mov
                                 test %eax,%eax
48ea4a:
            85 c0
            Of 85 4e ff ff ff
                                      48e9a0 <add_fdes+0x50>
48ea4c:
                                 ine
48ea52:
            eb b1
                                 jmp
                                       48ea05 < add fdes+0xb5>
48ea54:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
                                       0x10(%rsp), %rcx
48ea58:
            48 8b 4c 24 10
                                 mov
48ea5d:
            48 8b 74 24 08
                                 mov
                                       0x8(%rsp),%rsi
48ea62:
            45 0f b6 d6
                                 movzbl %r14b,%r10d
48ea66:
            48 8d 53 08
                                 lea
                                     0x8(%rbx),%rdx
48ea6a:
            44 89 d7
                                 mov
                                       %r10d,%edi
                                       %r10d,0x1c(%rsp)
48ea6d:
            44 89 54 24 1c
                                 mov
48ea72:
            e8 f9 f6 ff ff
                                 callq 48e170 <read_encoded_value_with_base>
48ea77:
            41 80 fe ff
                                 cmp
                                       $0xff,%r14b
                                       0x1c(%rsp), %r10d
48ea7b:
            44 8b 54 24 1c
                                 mov
            74 36
                                     48eab8 <add_fdes+0x168>
48ea80:
                                 je
48ea82:
            44 89 d7
                                 mov
                                       %r10d,%edi
48ea85:
            e8 66 f9 ff ff
                                 callg 48e3f0 <size of encoded value.part.3>
48ea8a:
            83 f8 07
                                 cmp
                                       $0x7,%eax
            48 c7 c2 ff ff ff ff
                                       $0xffffffffffffff.%rdx
48ea8d:
                                 mov
48ea94:
            77 13
                                     48eaa9 <add fdes+0x159>
                                 ja
            8d 0c c5 00 00 00 00 lea
                                      0x0(,\%rax,8),\%ecx
48ea96:
48ea9d:
            ba 01 00 00 00
                                 mov
                                       $0x1,%edx
            48 d3 e2
                                      %cl,%rdx
48eaa2:
                                 shl
```

```
48eaa5:
             48 83 ea 01
                                  sub
                                       $0x1.%rdx
 48eaa9:
             48 85 54 24 28
                                       %rdx,0x28(%rsp)
                                  test
 48eaae:
             0f 85 73 ff ff ff
                                  ine
                                       48ea27 <add fdes+0xd7>
 48eab4:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
 48eab8:
             4d 89 fd
                                        %r15,%r13
                                  mov
 48eabb:
             e9 30 ff ff ff
                                        48e9f0 <add fdes+0xa0>
                                  jmpg
 48eac0:
             44 89 d7
                                  mov
                                        %r10d,%edi
             48 89 ee
 48eac3:
                                  mov
                                        %rbp,%rsi
             44 89 54 24 1c
                                        %r10d,0x1c(%rsp)
 48eac6:
                                  mov
                                  callq 48e440 <base_from_object.part.4>
 48eacb:
             e8 70 f9 ff ff
                                  test %r14d,%r14d
 48ead0:
             45 85 f6
             48 89 44 24 08
                                        %rax,0x8(%rsp)
 48ead3:
                                  mov
 48ead8:
             4d 89 ef
                                        %r13,%r15
                                  mov
 48eadb:
             44 8b 54 24 1c
                                        0x1c(%rsp), %r10d
                                  mov
                                      48ea1d <add_fdes+0xcd>
 48eae0:
             0f 84 37 ff ff ff
                                  je
                                        0x10(%rsp), %rcx
 48eae6:
             48 8b 4c 24 10
                                  mov
 48eaeb:
             48 8b 74 24 08
                                  mov
                                        0x8(%rsp),%rsi
 48eaf0:
             48 8d 53 08
                                  lea
                                      0x8(%rbx),%rdx
             44 89 d7
                                        %r10d,%edi
 48eaf4:
                                  mov
 48eaf7:
             44 89 54 24 1c
                                  mov
                                        %r10d,0x1c(%rsp)
                                  callq 48e170 < read encoded value with base>
 48eafc:
             e8 6f f6 ff ff
 48eb01:
             44 8b 54 24 1c
                                  mov
                                        0x1c(%rsp),%r10d
 48eb06:
             e9 77 ff ff ff
                                  jmpg 48ea82 <add fdes+0x132>
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
 48eb0b:
                                  movzbl %r8b,%r14d
 48eb10:
             45 0f b6 f0
 48eb14:
             48 89 fe
                                  mov
                                        %rdi,%rsi
             44 89 f7
                                        %r14d,%edi
 48eb17:
                                  mov
             e8 21 f9 ff ff
                                  callq 48e440 <base from object.part.4>
 48eb1a:
             48 89 44 24 08
                                        %rax,0x8(%rsp)
 48eb1f:
                                  mov
 48eb24:
             e9 61 fe ff ff
                                  jmpq 48e98a <add_fdes+0x3a>
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
 48eb29:
000000000048eb30 <search object>:
                                  push %r15
 48eb30:
             41 57
             41 56
                                        %r14
 48eb32:
                                  push
 48eb34:
             41 55
                                  push
                                        %r13
 48eb36:
             41 54
                                        %r12
                                  push
 48eb38:
             49 89 fd
                                  mov
                                        %rdi,%r13
 48eb3b:
             55
                           push %rbp
                                 %rbx
 48eb3c:
             53
                           push
 48eb3d:
             48 83 ec 68
                                       $0x68,%rsp
                                  sub
 48eb41:
             0f b6 47 20
                                  movzbl 0x20(%rdi),%eax
 48eb45:
             48 89 74 24 08
                                  mov
                                        %rsi,0x8(%rsp)
             a8 01
                                  test $0x1,%al
 48eb4a:
 48eb4c:
             0f 84 8e 00 00 00
                                  je
                                      48ebe0 <search_object+0xb0>
 48eb52:
             4d 8b 65 18
                                        0x18(%r13),%r12
                                  mov
 48eb56:
             a8 04
                                  test $0x4,%al
             49 8b 5c 24 08
                                        0x8(%r12),%rbx
 48eb58:
                                  mov
             0f 85 7d 01 00 00
                                       48ece0 <search_object+0x1b0>
 48eb5d:
                                  movzwl 0x20(%r13),%eax
             41 0f b7 45 20
 48eb63:
                                 %edi,%edi
 48eb68:
             31 ff
                           xor
                                        0x8(%rsp),%rsi
 48eb6a:
             48 8b 74 24 08
                                  mov
```

```
48eb6f:
            66 a9 f8 07
                                 test $0x7f8,%ax
48eb73:
            0f 85 27 04 00 00
                                      48efa0 <search object+0x470>
                                 ine
48eb79:
            48 39 fb
                                       %rdi,%rbx
                                 cmp
48eb7c:
            76 47
                                 ibe
                                      48ebc5 < search object+0x95>
48eb7e:
            48 8d 14 3b
                                 lea
                                      (%rbx,%rdi,1),%rdx
48eb82:
            48 d1 ea
                                      %rdx
                                 shr
48eb85:
            4d 8b 7c d4 10
                                 mov
                                       0x10(%r12,%rdx,8),%r15
            49 8b 4f 08
                                       0x8(%r15),%rcx
48eb8a:
                                 mov
48eb8e:
            4d 8b 47 10
                                       0x10(%r15),%r8
                                 mov
48eb92:
            48 39 ce
                                       %rcx,%rsi
                                 cmp
            72 29
                                     48ebc0 <search_object+0x90>
48eb95:
                                 jb
48eb97:
            e9 14 01 00 00
                                impg 48ecb0 <search object+0x180>
48eb9c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48eba0:
            48 8d 04 17
                                 lea
                                     (%rdi,%rdx,1),%rax
                                      %rax
48eba4:
            48 d1 e8
                                 shr
                                       0x10(%r12,%rax,8),%r15
48eba7:
            4d 8b 7c c4 10
                                 mov
48ebac:
            49 8b 4f 08
                                 mov
                                       0x8(%r15),%rcx
48ebb0:
            4d 8b 47 10
                                       0x10(%r15),%r8
                                 mov
48ebb4:
            48 39 ce
                                       %rcx,%rsi
                                 cmp
48ebb7:
            0f 83 03 01 00 00
                                 iae
                                     48ecc0 <search_object+0x190>
48ebbd:
            48 89 c2
                                       %rax,%rdx
                                 mov
48ebc0:
            48 39 d7
                                 cmp
                                       %rdx,%rdi
48ebc3:
            72 db
                                 jb
                                     48eba0 < search object+0x70>
            45 31 ff
                                      %r15d,%r15d
48ebc5:
                                 xor
48ebc8:
            48 83 c4 68
                                 add
                                      $0x68,%rsp
48ebcc:
            4c 89 f8
                                       %r15,%rax
                                 mov
                                %rbx
48ebcf:
            5b
                          pop
48ebd0:
            5d
                                %rbp
                          pop
            41 5c
                                      %r12
48ebd1:
                                 pop
48ebd3:
            41 5d
                                       %r13
                                 pop
48ebd5:
            41 5e
                                      %r14
                                 pop
            41 5f
48ebd7:
                                 pop
                                      %r15
48ebd9:
            c3
                          retq
48ebda:
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48ebe0:
            8b 5f 20
                                 mov
                                       0x20(%rdi),%ebx
48ebe3:
            c1 eb 0b
                                 shr
                                      $0xb,%ebx
            48 85 db
                                 test %rbx,%rbx
48ebe6:
                                      48edf8 <search object+0x2c8>
48ebe9:
            0f 85 09 02 00 00
                                 ine
48ebef:
            a8 02
                                 test $0x2,%al
                                       0x18(%rdi),%rbp
48ebf1:
            48 8b 6f 18
                                 mov
48ebf5:
            0f 84 c5 01 00 00
                                     48edc0 <search_object+0x290>
                                 ie
48ebfb:
            48 8b 75 00
                                 mov
                                       0x0(%rbp),%rsi
48ebff:
            48 85 f6
                                 test %rsi,%rsi
                                      48ec24 < search_object+0xf4>
48ec02:
            75 20
                                 jne
48ec04:
            eb 3f
                                 jmp
                                      48ec45 <search_object+0x115>
48ec06:
            66 2e 0f 1f 84 00 00
                                nopw %cs:0x0(%rax,%rax,1)
48ec0d:
            00 00 00
                                      $0x8,%rbp
48ec10:
            48 83 c5 08
                                 add
                                       0x0(%rbp),%rsi
48ec14:
            48 8b 75 00
                                 mov
                                      %rax,%rbx
48ec18:
            48 01 c3
                                 add
48ec1b:
            48 85 f6
                                      %rsi,%rsi
                                 test
48ec1e:
            0f 84 b1 01 00 00
                                 je
                                     48edd5 <search_object+0x2a5>
```

```
48ec24:
            4c 89 ef
                                       %r13,%rdi
                                 mov
48ec27:
            e8 a4 fb ff ff
                                 callq 48e7d0 < classify object over fdes>
48ec2c:
            48 83 f8 ff
                                 cmp
                                       $0xffffffffffffff,%rax
48ec30:
            75 de
                                 ine
                                      48ec10 <search object+0xe0>
48ec32:
            48 8d 05 0f e6 22 00 lea
                                      0x22e60f(%rip),%rax
                                                               # 6bd248 <terminator.9566>
48ec39:
            49 c7 45 20 f8 07 00 movg $0x7f8,0x20(%r13)
48ec40:
            00
            49 89 45 18
                                        %rax,0x18(%r13)
48ec41:
                                 mov
48ec45:
            48 8b 44 24 08
                                       0x8(%rsp),%rax
                                 mov
48ec4a:
            49 39 45 00
                                       %rax,0x0(%r13)
                                 cmp
            0f 87 71 ff ff ff
                                      48ebc5 < search object+0x95>
48ec4e:
                                 ja
            41 0f b6 45 20
                                 movzbl 0x20(%r13),%eax
48ec54:
48ec59:
            49 8b 5d 18
                                       0x18(%r13),%rbx
                                 mov
48ec5d:
            a8 01
                                 test $0x1,%al
            0f 85 ed fe ff ff
48ec5f:
                                      48eb52 <search_object+0x22>
                                 jne
            a8 02
48ec65:
                                 test $0x2,%al
48ec67:
            0f 84 1b 03 00 00
                                      48ef88 <search_object+0x458>
                                 je
48ec6d:
            48 8b 33
                                       (%rbx),%rsi
                                 mov
48ec70:
            48 85 f6
                                 test %rsi,%rsi
48ec73:
            0f 84 4c ff ff ff
                                 ie
                                      48ebc5 <search_object+0x95>
48ec79:
            48 8b 6c 24 08
                                       0x8(%rsp),%rbp
                                 mov
48ec7e:
            eb 10
                                 jmp
                                       48ec90 <search_object+0x160>
48ec80:
            48 83 c3 08
                                 add
                                       $0x8,%rbx
                                       (%rbx),%rsi
            48 8b 33
48ec84:
                                 mov
48ec87:
            48 85 f6
                                 test %rsi,%rsi
48ec8a:
            0f 84 35 ff ff ff
                                      48ebc5 < search_object+0x95>
                                 ie
48ec90:
            48 89 ea
                                       %rbp,%rdx
                                 mov
                                       %r13,%rdi
48ec93:
            4c 89 ef
                                 mov
48ec96:
                                 callq 48e520 < linear_search_fdes>
            e8 85 f8 ff ff
48ec9b:
            48 85 c0
                                 test %rax,%rax
            74 e0
                                      48ec80 <search object+0x150>
48ec9e:
                                 ie
            49 89 c7
48eca0:
                                 mov
                                       %rax,%r15
48eca3:
            e9 20 ff ff ff
                                 jmpq 48ebc8 <search_object+0x98>
48eca8:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48ecaf:
            00
48ecb0:
            48 89 d0
                                 mov
                                        %rdx,%rax
48ecb3:
            48 89 da
                                        %rbx,%rdx
                                 mov
            66 2e 0f 1f 84 00 00
48ecb6:
                                nopw %cs:0x0(%rax,%rax,1)
            00 00 00
48ecbd:
                                       %r8,%rcx
48ecc0:
            4c 01 c1
                                 add
            48 39 ce
                                       %rcx,%rsi
48ecc3:
                                 cmp
48ecc6:
            Of 82 fc fe ff ff
                                 ib
                                      48ebc8 <search object+0x98>
48eccc:
            48 8d 78 01
                                 lea
                                      0x1(%rax),%rdi
48ecd0:
            48 89 d3
                                 mov
                                       %rdx,%rbx
48ecd3:
            e9 a1 fe ff ff
                                 jmpq 48eb79 <search_object+0x49>
48ecd8:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48ecdf:
            00
            48 85 db
48ece0:
                                 test %rbx,%rbx
            Of 84 dc fe ff ff
                                      48ebc5 <search_object+0x95>
48ece3:
                                 je
                                      0x50(%rsp),%rax
48ece9:
            48 8d 44 24 50
                                 lea
                                      %ecx,%ecx
48ecee:
            31 c9
                                 xor
48ecf0:
            4c 89 6c 24 30
                                       %r13,0x30(%rsp)
                                 mov
```

```
48ecf5:
            49 89 cd
                                        %rcx,%r13
                                 mov
            48 89 44 24 18
48ecf8:
                                 mov
                                       %rax,0x18(%rsp)
48ecfd:
            48 8d 44 24 48
                                 lea
                                      0x48(%rsp),%rax
48ed02:
            48 89 44 24 10
                                       %rax,0x10(%rsp)
                                 mov
48ed07:
            eb 22
                                       48ed2b <search_object+0x1fb>
                                 imp
48ed09:
            0f 1f 80 00 00 00 00
                                nopl 0x0(\%rax)
48ed10:
            48 03 44 24 50
                                 add
                                      0x50(%rsp), %rax
48ed15:
            48 39 c8
                                       %rcx,%rax
                                 cmp
48ed18:
            Of 87 aa fe ff ff
                                      48ebc8 <search object+0x98>
                                 ia
48ed1e:
            4c 8d 6d 01
                                 lea
                                      0x1(%rbp), %r13
48ed22:
            49 39 dd
                                 cmp
                                       %rbx,%r13
            0f 83 9a fe ff ff
                                      48ebc5 <search object+0x95>
48ed25:
                                 iae
48ed2b:
            4a 8d 2c 2b
                                      (%rbx,%r13,1),%rbp
                                 lea
48ed2f:
            48 d1 ed
                                 shr
                                      %rbp
                                 mov 0x10(%r12,%rbp,8),%r15
48ed32:
            4d 8b 7c ec 10
                                 movslq 0x4(%r15),%rax
48ed37:
            49 63 47 04
48ed3b:
            49 8d 7f 04
                                 lea
                                      0x4(%r15),%rdi
48ed3f:
            48 29 c7
                                      %rax,%rdi
                                 sub
48ed42:
            e8 69 f5 ff ff
                                 callq 48e2b0 <get cie encoding>
            31 f6
48ed47:
                                 xor
                                      %esi,%esi
48ed49:
            3c ff
                                $0xff,%al
                          cmp
48ed4b:
            41 89 c6
                                 mov
                                       %eax,%r14d
48ed4e:
            49 8d 57 08
                                      0x8(%r15),%rdx
48ed52:
            44 0f b6 c8
                                 movzbl %al,%r9d
48ed56:
            74 24
                                      48ed7c <search_object+0x24c>
                                 ie
48ed58:
            48 8b 74 24 30
                                       0x30(%rsp),%rsi
                                 mov
            44 89 cf
                                       %r9d,%edi
48ed5d:
                                 mov
48ed60:
            48 89 54 24 28
                                       %rdx,0x28(%rsp)
                                 mov
                                       %r9d,0x20(%rsp)
48ed65:
            44 89 4c 24 20
                                 mov
48ed6a:
            e8 d1 f6 ff ff
                                 callq 48e440 <base_from_object.part.4>
48ed6f:
            48 8b 54 24 28
                                 mov
                                       0x28(\%rsp),\%rdx
48ed74:
            44 8b 4c 24 20
                                       0x20(%rsp),%r9d
                                 mov
48ed79:
            48 89 c6
                                 mov
                                       %rax,%rsi
48ed7c:
            48 8b 4c 24 10
                                       0x10(%rsp), %rcx
                                 mov
                                       %r9d,%edi
48ed81:
            44 89 cf
                                 mov
48ed84:
            e8 e7 f3 ff ff
                                 callg 48e170 < read encoded value with base>
48ed89:
            48 8b 4c 24 18
                                       0x18(\%rsp),\%rcx
                                 mov
                                       %r14d,%edi
48ed8e:
            44 89 f7
                                 mov
48ed91:
            31 f6
                                      %esi,%esi
                                 xor
48ed93:
            83 e7 0f
                                      $0xf,%edi
                                 and
48ed96:
            48 89 c2
                                       %rax,%rdx
                                 mov
48ed99:
            e8 d2 f3 ff ff
                                 callq 48e170 <read_encoded_value_with_base>
48ed9e:
            48 8b 44 24 48
                                       0x48(\%rsp),\%rax
                                 mov
                                       0x8(\%rsp),\%rcx
48eda3:
            48 8b 4c 24 08
                                 mov
48eda8:
            48 39 c8
                                 cmp
                                       %rcx,%rax
48edab:
            0f 86 5f ff ff ff
                                 jbe 48ed10 <search object+0x1e0>
48edb1:
            48 89 eb
                                 mov
                                       %rbp,%rbx
                                 jmpq 48ed22 <search_object+0x1f2>
48edb4:
            e9 69 ff ff ff
            0f 1f 80 00 00 00 00
                                nopl 0x0(\%rax)
48edb9:
                                       %rbp,%rsi
48edc0:
            48 89 ee
                                 mov
48edc3:
            e8 08 fa ff ff
                                 callg 48e7d0 <classify object over fdes>
                                       $0xffffffffffffff,%rax
48edc8:
            48 83 f8 ff
                                 cmp
```

```
48edcc:
             48 89 c3
                                        %rax,%rbx
                                  mov
48edcf:
             Of 84 5d fe ff ff
                                       48ec32 <search object+0x102>
                                  ie
                                  test $0xfffffffffe00000,%rbx
48edd5:
             48 f7 c3 00 00 e0 ff
48eddc:
             0f 84 66 04 00 00
                                       48f248 <search object+0x718>
                                  ie
48ede2:
             41 81 65 20 ff 07 00
                                  andl $0x7ff,0x20(%r13)
48ede9:
             00
48edea:
             48 85 db
                                  test %rbx,%rbx
48eded:
             0f 84 52 fe ff ff
                                       48ec45 < search object+0x115>
                                  je
48edf3:
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
             48 8d 2c dd 10 00 00 lea
48edf8:
                                       0x10(,\%rbx,8),\%rbp
48edff:
             00
             48 89 ef
                                        %rbp,%rdi
48ee00:
                                  callq 41fb90 < libc malloc>
             e8 88 0d f9 ff
48ee03:
48ee08:
             48 85 c0
                                  test %rax,%rax
48ee0b:
             48 89 44 24 50
                                        %rax,0x50(%rsp)
                                  mov
             Of 84 2f fe ff ff
                                       48ec45 < search object+0x115>
48ee10:
                                  je
48ee16:
             48 c7 40 08 00 00 00 movq $0x0,0x8(%rax)
48ee1d:
             00
48ee1e:
             48 89 ef
                                        %rbp,%rdi
                                  mov
48ee21:
             e8 6a 0d f9 ff
                                  callq 41fb90 <__libc_malloc>
48ee26:
             48 85 c0
                                  test %rax,%rax
48ee29:
             48 89 44 24 58
                                  mov
                                        %rax,0x58(%rsp)
48ee2e:
             74 08
                                       48ee38 <search object+0x308>
                                  ie
             48 c7 40 08 00 00 00 movg $0x0,0x8(%rax)
48ee30:
48ee37:
             00
48ee38:
             41 f6 45 20 02
                                  testb $0x2,0x20(%r13)
48ee3d:
                                        0x18(%r13),%rbp
             49 8b 6d 18
48ee41:
             0f 84 d1 03 00 00
                                       48f218 <search object+0x6e8>
                                  je
                                        0x0(%rbp), %rdx
48ee47:
             48 8b 55 00
                                  mov
48ee4b:
             48 85 d2
                                  test %rdx,%rdx
48ee4e:
             0f 84 41 04 00 00
                                       48f295 <search object+0x765>
                                  ie
             4c 8d 64 24 50
                                      0x50(\%rsp),\%r12
48ee54:
                                  lea
48ee59:
             0f 1f 80 00 00 00 00
                                 nopl 0x0(\%rax)
48ee60:
             48 83 c5 08
                                  add
                                        $0x8,%rbp
             4c 89 e6
                                        %r12,%rsi
48ee64:
                                  mov
48ee67:
             4c 89 ef
                                  mov
                                        %r13.%rdi
             e8 e1 fa ff ff
                                  callq 48e950 <add_fdes>
48ee6a:
48ee6f:
             48 8b 55 00
                                        0x0(\%rbp).\%rdx
                                  mov
48ee73:
             48 85 d2
                                  test %rdx,%rdx
48ee76:
             75 e8
                                       48ee60 <search_object+0x330>
                                  jne
48ee78:
             48 8b 44 24 50
                                        0x50(%rsp),%rax
                                  mov
48ee7d:
             48 85 c0
                                  test %rax,%rax
48ee80:
             48 89 44 24 20
                                        %rax,0x20(%rsp)
                                  mov
             48 89 44 24 28
                                        %rax,0x28(%rsp)
48ee85:
                                  mov
48ee8a:
             74 0a
                                  je
                                       48ee96 <search_object+0x366>
48ee8c:
             48 39 58 08
                                        %rbx,0x8(%rax)
                                  cmp
48ee90:
             0f 85 ff 03 00 00
                                  ine
                                       48f295 <search_object+0x765>
                                  testb $0x4,0x20(%r13)
48ee96:
             41 f6 45 20 04
48ee9b:
             4c 8d 35 7e f8 ff ff
                                  lea
                                       -0x782(%rip),%r14
                                                              # 48e720
<fde_mixed_encoding_compare>
48eea2:
                                      48eebd <search object+0x38d>
             75 19
                                  ine
48eea4:
             66 41 f7 45 20 f8 07 testw $0x7f8,0x20(%r13)
```

```
48eeab:
             48 8d 05 de f5 ff ff
                                       -0xa22(%rip),%rax
                                                              # 48e490
                                  lea
<fde single encoding compare>
48eeb2:
             4c 8d 35 17 f1 ff ff
                                  lea
                                       -0xee9(%rip),%r14
                                                              # 48dfd0
<fde unencoded compare>
48eeb9:
             4c 0f 45 f0
                                  cmovne %rax,%r14
48eebd:
             48 8b 6c 24 58
                                        0x58(%rsp), %rbp
                                  mov
48eec2:
             48 85 ed
                                  test %rbp,%rbp
             0f 84 65 03 00 00
                                      48f230 <search object+0x700>
48eec5:
                                  je
48eecb:
             48 8b 4c 24 20
                                        0x20(%rsp),%rcx
                                  mov
48eed0:
             48 8b 41 08
                                  mov
                                        0x8(\%rcx),\%rax
                                  test %rax,%rax
48eed4:
             48 85 c0
             48 89 44 24 30
                                        %rax,0x30(%rsp)
48eed7:
                                  mov
48eedc:
             0f 84 a7 03 00 00
                                      48f289 <search object+0x759>
                                  ie
48eee2:
             48 8d 55 10
                                  lea
                                      0x10(\%rbp),%rdx
                                       0x8(%rcx,%rax,8),%rax
48eee6:
             48 8d 44 c1 08
                                  lea
             4c 8d 3d 4e e3 22 00 lea
                                       0x22e34e(%rip),%r15
                                                                # 6bd240 < marker. 9460 >
48eeeb:
48eef2:
             48 89 5c 24 38
                                  mov
                                        %rbx,0x38(%rsp)
48eef7:
             48 89 54 24 10
                                        %rdx,0x10(%rsp)
                                  mov
48eefc:
             48 8d 51 10
                                      0x10(\%rcx),\%rdx
                                  lea
48ef00:
             48 89 44 24 18
                                  mov
                                        %rax,0x18(%rsp)
48ef05:
             49 89 d4
                                        %rdx,%r12
                                  mov
48ef08:
             48 89 d3
                                  mov
                                        %rdx,%rbx
48ef0b:
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
                                        0x18(%rsp),%rbx
48ef10:
             48 3b 5c 24 18
                                  cmp
48ef15:
             48 8b 44 24 10
                                        0x10(%rsp), %rax
                                  mov
48ef1a:
             4c 89 38
                                        %r15,(%rax)
                                  mov
48ef1d:
             0f 84 5d 01 00 00
                                      48f080 <search object+0x550>
                                  ie
             48 8d 05 16 e3 22 00 lea
48ef23:
                                      0x22e316(%rip),%rax
                                                                # 6bd240 <marker.9460>
48ef2a:
             48 39 c3
                                        %rax,%rbx
                                  cmp
             0f 84 35 01 00 00
48ef2d:
                                      48f068 <search_object+0x538>
                                  je
             49 89 df
48ef33:
                                        %rbx,%r15
                                  mov
                                        48ef64 <search_object+0x434>
48ef36:
             eb 2c
                                  jmp
48ef38:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48ef3f:
             00
             4d 29 e7
                                       %r12,%r15
48ef40:
                                  sub
48ef43:
             4a 8d 44 3d 00
                                       0x0(%rbp, %r15, 1), %rax
48ef48:
             4c 8b 78 10
                                        0x10(\%rax),\%r15
                                  mov
             48 c7 40 10 00 00 00 movg $0x0,0x10(%rax)
48ef4c:
48ef53:
             00
                                                                # 6bd240 <marker.9460>
48ef54:
             48 8d 05 e5 e2 22 00 lea
                                      0x22e2e5(%rip),%rax
48ef5b:
             49 39 c7
                                        %rax,%r15
                                  cmp
48ef5e:
             0f 84 04 01 00 00
                                  ie
                                      48f068 <search_object+0x538>
48ef64:
             48 8b 73 08
                                        0x8(%rbx),%rsi
                                  mov
48ef68:
             49 8b 17
                                        (%r15),%rdx
                                  mov
48ef6b:
             4c 89 ef
                                  mov
                                        %r13,%rdi
                                  callq *%r14
48ef6e:
             41 ff d6
48ef71:
             85 c0
                                  test %eax,%eax
48ef73:
             78 cb
                                      48ef40 <search_object+0x410>
                                  js
             48 83 44 24 10 08
                                  addq $0x8,0x10(%rsp)
48ef75:
             48 83 c3 08
48ef7b:
                                  add
                                       $0x8,%rbx
                                        48ef10 <search object+0x3e0>
48ef7f:
             eb 8f
                                  jmp
48ef81:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
```

```
48ef88:
            48 8b 54 24 08
                                        0x8(\%rsp),\%rdx
                                 mov
48ef8d:
            48 89 de
                                        %rbx,%rsi
                                 mov
48ef90:
            4c 89 ef
                                        %r13,%rdi
                                 mov
48ef93:
            e8 88 f5 ff ff
                                 callq 48e520 < linear search fdes>
48ef98:
            49 89 c7
                                        %rax,%r15
                                 mov
                                 jmpg 48ebc8 <search object+0x98>
48ef9b:
            e9 28 fc ff ff
48efa0:
            66 c1 e8 03
                                 shr
                                      $0x3,%ax
                                       %ebp,%ebp
48efa4:
            31 ed
                                 xor
            0f b6 c8
                                 movzbl %al,%ecx
48efa6:
48efa9:
            41 89 c6
                                        %eax,%r14d
                                 mov
48efac:
            80 f9 ff
                                 cmp
                                        $0xff,%cl
            89 4c 24 20
                                        %ecx,0x20(%rsp)
48efaf:
                                 mov
48efb3:
            74 0d
                                      48efc2 <search object+0x492>
                                 ie
48efb5:
            4c 89 ee
                                        %r13,%rsi
                                 mov
48efb8:
            89 cf
                                        %ecx,%edi
                                 mov
            e8 81 f4 ff ff
                                 callq 48e440 <base from object.part.4>
48efba:
48efbf:
            48 89 c5
                                        %rax,%rbp
                                 mov
48efc2:
            48 85 db
                                 test %rbx,%rbx
48efc5:
            Of 84 fa fb ff ff
                                      48ebc5 < search object+0x95>
                                 ie
48efcb:
            44 89 f0
                                 mov
                                        %r14d,%eax
48efce:
            45 31 ed
                                       %r13d,%r13d
                                 xor
48efd1:
            48 89 6c 24 30
                                 mov
                                        %rbp,0x30(%rsp)
48efd6:
            83 e0 0f
                                 and
                                       $0xf.%eax
            4c 8b 74 24 08
48efd9:
                                 mov
                                        0x8(\%rsp),\%r14
48efde:
            89 44 24 28
                                        %eax,0x28(%rsp)
                                 mov
48efe2:
            48 8d 44 24 50
                                      0x50(%rsp), %rax
                                 lea
48efe7:
            48 89 44 24 18
                                 mov
                                        %rax,0x18(%rsp)
48efec:
            48 8d 44 24 48
                                      0x48(%rsp),%rax
                                 lea
            48 89 44 24 10
                                        %rax,0x10(%rsp)
48eff1:
                                 mov
48eff6:
            eb 23
                                       48f01b <search_object+0x4eb>
                                 jmp
48eff8:
            0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48efff:
            00
48f000:
            48 03 44 24 50
                                 add
                                       0x50(%rsp),%rax
48f005:
            49 39 c6
                                        %rax,%r14
                                 cmp
            Of 82 ba fb ff ff
                                      48ebc8 <search_object+0x98>
48f008:
                                 jb
48f00e:
            4c 8d 6d 01
                                 lea
                                      0x1(%rbp), %r13
            49 39 dd
                                       %rbx,%r13
48f012:
                                 cmp
            Of 83 aa fb ff ff
                                      48ebc5 < search object+0x95>
48f015:
                                 iae
48f01b:
            4d 8d 44 1d 00
                                 lea
                                      0x0(%r13,%rbx,1),%r8
48f020:
            48 8b 4c 24 10
                                        0x10(\%rsp),\%rcx
                                 mov
48f025:
            48 8b 74 24 30
                                        0x30(%rsp),%rsi
                                 mov
48f02a:
            8b 7c 24 20
                                 mov
                                        0x20(%rsp),%edi
48f02e:
            49 d1 e8
                                      %r8
                                 shr
48f031:
            4f 8b 7c c4 10
                                        0x10(%r12,%r8,8),%r15
                                 mov
48f036:
            4c 89 c5
                                 mov
                                        %r8,%rbp
48f039:
            49 8d 57 08
                                      0x8(%r15),%rdx
                                 lea
                                 callq 48e170 <read_encoded_value_with_base>
48f03d:
            e8 2e f1 ff ff
48f042:
            48 8b 4c 24 18
                                 mov
                                        0x18(%rsp),%rcx
                                        0x28(%rsp),%edi
48f047:
            8b 7c 24 28
                                 mov
            31 f6
48f04b:
                                       %esi,%esi
                                 xor
            48 89 c2
                                        %rax,%rdx
48f04d:
                                 mov
                                 callq 48e170 <read_encoded_value_with_base>
48f050:
            e8 1b f1 ff ff
```

```
48f055:
            48 8b 44 24 48
                                       0x48(%rsp), %rax
                                 mov
48f05a:
            49 39 c6
                                       %rax,%r14
                                 cmp
48f05d:
            73 a1
                                 jae
                                      48f000 <search object+0x4d0>
48f05f:
            48 89 eb
                                       %rbp,%rbx
                                 mov
48f062:
            eb ae
                                       48f012 <search_object+0x4e2>
                                 imp
48f064:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48f068:
            4c 8d 3d d1 e1 22 00 lea
                                      0x22e1d1(%rip),%r15
                                                               # 6bd240 <marker.9460>
            48 83 44 24 10 08
                                 addq $0x8,0x10(\%rsp)
48f06f:
            48 83 c3 08
                                       $0x8,%rbx
48f075:
                                 add
                                 jmpq 48ef10 <search_object+0x3e0>
48f079:
            e9 92 fe ff ff
            66 90
48f07e:
                                 xchg
                                       %ax,%ax
            48 8b 5c 24 38
                                       0x38(%rsp),%rbx
48f080:
                                 mov
            31 f6
                                      %esi,%esi
48f085:
                                 xor
48f087:
            31 c9
                                      %ecx,%ecx
                                 xor
48f089:
            31 c0
                                      %eax,%eax
                                 xor
            4c 8b 44 24 30
                                       0x30(\%rsp),\%r8
48f08b:
                                 mov
48f090:
            48 8b 7c 24 20
                                 mov
                                       0x20(%rsp),%rdi
48f095:
            eb 1b
                                       48f0b2 <search_object+0x582>
                                 jmp
48f097:
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48f09e:
            00 00
48f0a0:
            48 89 54 cf 10
                                       %rdx,0x10(%rdi,%rcx,8)
                                 mov
48f0a5:
            48 83 c1 01
                                 add
                                       $0x1,%rcx
48f0a9:
            48 83 c0 01
                                 add
                                      $0x1.%rax
            49\ 39\ c0
                                       %rax,%r8
48f0ad:
                                 cmp
                                     48f0d0 <search object+0x5a0>
48f0b0:
            74 1e
                                 ie
48f0b2:
            48 83 7c c5 10 00
                                 cmpq $0x0,0x10(%rbp,%rax,8)
            48 8b 54 c7 10
                                 mov
                                       0x10(%rdi,%rax,8),%rdx
48f0b8:
            75 e1
                                      48f0a0 <search object+0x570>
48f0bd:
                                 ine
            48 89 54 f5 10
                                       %rdx,0x10(%rbp,%rsi,8)
48f0bf:
                                 mov
48f0c4:
            48 83 c6 01
                                 add
                                       $0x1,%rsi
                                       48f0a9 <search object+0x579>
48f0c8:
            eb df
                                 jmp
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48f0ca:
48f0d0:
            48 8b 44 24 50
                                 mov
                                       0x50(%rsp),%rax
48f0d5:
            48 8b 54 24 58
                                       0x58(%rsp),%rdx
                                 mov
48f0da:
            48 89 44 24 20
                                 mov
                                       %rax,0x20(%rsp)
48f0df:
            48 8b 44 24 28
                                 mov
                                       0x28(%rsp),%rax
            48 89 48 08
                                       %rcx,0x8(%rax)
48f0e4:
                                 mov
48f0e8:
            48 8b 4c 24 20
                                       0x20(\%rsp).\%rcx
                                 mov
48f0ed:
            48 89 75 08
                                       %rsi,0x8(%rbp)
                                 mov
48f0f1:
            48 8b 42 08
                                       0x8(%rdx),%rax
                                 mov
48f0f5:
            48 03 41 08
                                      0x8(%rcx),%rax
                                 add
48f0f9:
            48 39 d8
                                       %rbx,%rax
                                 cmp
48f0fc:
            0f 85 93 01 00 00
                                      48f295 <search object+0x765>
                                 ine
            4c 89 f6
                                       %r14,%rsi
48f102:
                                 mov
48f105:
            4c 89 ef
                                 mov
                                       %r13,%rdi
48f108:
            e8 b3 ef ff ff
                                 callq 48e0c0 <frame heapsort>
48f10d:
            48 8b 44 24 58
                                       0x58(%rsp), %rax
                                 mov
48f112:
            48 8b 68 08
                                 mov
                                       0x8(\%rax),\%rbp
            48 89 44 24 28
                                       %rax,0x28(%rsp)
48f116:
                                 mov
48f11b:
            48 85 ed
                                 test %rbp,%rbp
            0f 84 cd 00 00 00
                                      48f1f1 <search object+0x6c1>
48f11e:
                                 ie
                                       0x50(%rsp), %rax
48f124:
            48 8b 44 24 50
                                 mov
```

```
48f129:
            4c 89 6c 24 10
                                       %r13.0x10(%rsp)
                                 mov
48f12e:
            4c 8b 60 08
                                       0x8(%rax),%r12
                                 mov
48f132:
            48 89 44 24 20
                                       %rax,0x20(%rsp)
                                 mov
48f137:
            4c 89 e0
                                       %r12.%rax
                                 mov
48f13a:
            49 89 ec
                                       %rbp,%r12
                                 mov
48f13d:
            48 89 c5
                                       %rax,%rbp
                                 mov
48f140:
            49 8d 44 24 ff
                                     -0x1(\%r12),\%rax
                                 lea
48f145:
            48 85 ed
                                 test %rbp,%rbp
            48 89 44 24 18
                                       %rax,0x18(%rsp)
48f148:
                                 mov
48f14d:
            48 8b 44 24 28
                                 mov
                                       0x28(%rsp),%rax
                                      (%rax,%r12,8),%rax
48f152:
            4a 8d 04 e0
                                 lea
            48 8b 58 08
                                       0x8(%rax),%rbx
48f156:
                                 mov
48f15a:
            0f 84 01 01 00 00
                                     48f261 <search object+0x731>
                                 ie
48f160:
            48 8b 44 24 20
                                       0x20(%rsp),%rax
                                 mov
48f165:
            4c 8d 7c e8 08
                                      0x8(%rax,%rbp,8),%r15
                                 lea
            eb 17
                                       48f183 <search object+0x653>
48f16a:
                                 jmp
48f16c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
48f170:
            49 8b 07
                                       (%r15),%rax
                                 mov
48f173:
            4c 89 ed
                                       %r13,%rbp
                                 mov
48f176:
            4b 89 04 e7
                                 mov
                                       %rax,(%r15,%r12,8)
48f17a:
            49 83 ef 08
                                      $0x8,%r15
                                 sub
48f17e:
            4d 85 ed
                                 test %r13,%r13
48f181:
            74 3d
                                 je
                                     48f1c0 <search object+0x690>
            4c 8d 6d ff
48f183:
                                 lea
                                      -0x1(\%rbp),\%r13
48f187:
            48 89 da
                                       %rbx,%rdx
                                 mov
48f18a:
            49 8b 37
                                       (%r15),%rsi
                                 mov
            48 8b 7c 24 10
                                       0x10(%rsp),%rdi
48f18d:
                                 mov
                                 callq *%r14
48f192:
            41 ff d6
                                 test %eax,%eax
48f195:
            85 c0
48f197:
            4b 8d 14 2c
                                      (%r12,%r13,1),%rdx
                                 lea
48f19b:
            7f d3
                                      48f170 <search object+0x640>
                                 jg
            48 83 7c 24 18 00
48f19d:
                                 cmpq $0x0,0x18(%rsp)
48f1a3:
            48 8b 44 24 20
                                 mov
                                       0x20(%rsp),%rax
48f1a8:
            48 89 5c d0 10
                                       %rbx,0x10(%rax,%rdx,8)
                                 mov
            74 21
                                     48f1d0 <search object+0x6a0>
48f1ad:
                                 je
48f1af:
            4c 8b 64 24 18
                                 mov
                                       0x18(\%rsp),\%r12
48f1b4:
            eb 8a
                                       48f140 <search_object+0x610>
                                 imp
            66 2e 0f 1f 84 00 00
                                nopw %cs:0x0(%rax,%rax,1)
48f1b6:
48f1bd:
            00 00 00
            48 8b 54 24 18
48f1c0:
                                       0x18(%rsp), %rdx
                                 mov
                                       48f19d <search_object+0x66d>
48f1c5:
            eb d6
                                 jmp
48f1c7:
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48f1ce:
            00 00
                                       0x28(%rsp),%rax
48f1d0:
            48 8b 44 24 28
                                 mov
48f1d5:
            48 8b 4c 24 20
                                 mov
                                       0x20(%rsp),%rcx
48f1da:
            4c 8b 6c 24 10
                                       0x10(\%rsp),\%r13
                                 mov
48f1df:
            48 8b 40 08
                                       0x8(%rax),%rax
                                 mov
48f1e3:
            48 01 41 08
                                 add
                                       %rax,0x8(%rcx)
            48 8b 44 24 58
                                       0x58(%rsp),%rax
48f1e7:
                                 mov
48f1ec:
            48 89 44 24 28
                                       %rax,0x28(%rsp)
                                 mov
            48 8b 7c 24 28
                                       0x28(%rsp),%rdi
48f1f1:
                                 mov
                                 callq 420450 <__free>
48f1f6:
            e8 55 12 f9 ff
```

```
48f1fb:
             48 8b 44 24 50
                                        0x50(\%rsp).\%rax
                                  mov
             49 8b 55 18
                                        0x18(%r13),%rdx
 48f200:
                                  mov
 48f204:
             48 89 10
                                        %rdx,(%rax)
                                  mov
 48f207:
             49 89 45 18
                                         %rax,0x18(%r13)
                                  mov
 48f20b:
             41 80 4d 20 01
                                  orb $0x1,0x20(\%r13)
 48f210:
             e9 30 fa ff ff
                                  jmpg 48ec45 <search object+0x115>
 48f215:
             0f 1f 00
                                  nopl (%rax)
             48 8d 44 24 50
                                       0x50(%rsp), %rax
 48f218:
                                  lea
 48f21d:
             48 89 ea
                                        %rbp,%rdx
                                  mov
 48f220:
             4c 89 ef
                                        %r13,%rdi
                                  mov
             48 89 c6
                                        %rax,%rsi
 48f223:
                                  mov
             e8 25 f7 ff ff
                                  callq 48e950 <add fdes>
 48f226:
 48f22b:
             e9 48 fc ff ff
                                  jmpg 48ee78 <search object+0x348>
 48f230:
             48 8b 54 24 20
                                        0x20(%rsp), %rdx
                                  mov
 48f235:
                                        %r14,%rsi
             4c 89 f6
                                  mov
 48f238:
             4c 89 ef
                                        %r13,%rdi
                                  mov
 48f23b:
             e8 80 ee ff ff
                                  callq 48e0c0 <frame_heapsort>
 48f240:
             eb b9
                                        48f1fb <search object+0x6cb>
                                  jmp
 48f242:
             66 0f 1f 44 00 00
                                  nopw 0x0(\%rax,\%rax,1)
 48f248:
             41 8b 45 20
                                  mov
                                        0x20(%r13),%eax
 48f24c:
             89 da
                                        %ebx,%edx
                                  mov
 48f24e:
             c1 e2 0b
                                  shl
                                      $0xb,%edx
 48f251:
             25 ff 07 00 00
                                  and
                                       $0x7ff.%eax
 48f256:
             09 \, d0
                                  or
                                       %edx,%eax
                                        %eax,0x20(%r13)
 48f258:
             41 89 45 20
                                  mov
 48f25c:
             e9 89 fb ff ff
                                  jmpg 48edea <search object+0x2ba>
                                  cmpg $0x0,0x18(%rsp)
 48f261:
             48 83 7c 24 18 00
                                        0x20(%rsp), %rcx
 48f267:
             48 8b 4c 24 20
                                  mov
                                        %rbx,0x8(%rcx,%r12,8)
 48f26c:
             4a 89 5c e1 08
                                  mov
 48f271:
             0f 84 59 ff ff ff
                                       48f1d0 <search_object+0x6a0>
                                  je
 48f277:
             49 8d 54 24 fe
                                  lea
                                       -0x2(\%r12),\%rdx
 48f27c:
             48 8b 18
                                  mov
                                        (%rax),%rbx
 48f27f:
             48 89 54 24 18
                                  mov
                                        %rdx,0x18(%rsp)
 48f284:
             e9 14 ff ff ff
                                        48f19d <search_object+0x66d>
                                  jmpq
             48 89 ea
 48f289:
                                  mov
                                        %rbp,%rdx
 48f28c:
             31 f6
                                  xor
                                       %esi,%esi
                                       %ecx,%ecx
 48f28e:
             31 c9
                                  xor
                                  impq 48f0df <search_object+0x5af>
 48f290:
             e9 4a fe ff ff
 48f295:
             e8 f6 ed f7 ff
                                  callq 40e090 <abort>
             66 0f 1f 44 00 00
                                  nopw 0x0(\%rax,\%rax,1)
 48f29a:
00000000048f2a0 <base_from_cb_data.part.5>:
 48f2a0:
             83 e7 70
                                       $0x70,%edi
                                  and
 48f2a3:
             40 80 ff 20
                                        $0x20,%dil
                                  cmp
 48f2a7:
             74 27
                                  je
                                       48f2d0 <base_from_cb_data.part.5+0x30>
 48f2a9:
             76 15
                                       48f2c0 <base from cb data.part.5+0x20>
                                  ibe
 48f2ab:
             40 80 ff 30
                                        $0x30,%dil
                                  cmp
                                       48f2d8 <base_from_cb_data.part.5+0x38>
             75 27
 48f2af:
                                  ine
                                        0x10(%rsi),%rax
 48f2b1:
             48 8b 46 10
                                  mov
 48f2b5:
             с3
                           reta
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48f2b6:
             00 00 00
 48f2bd:
```

```
test %dil,%dil
 48f2c0:
             40 84 ff
 48f2c3:
             74 06
                                       48f2cb <br/>base from cb data.part.5+0x2b>
 48f2c5:
             40 80 ff 10
                                        $0x10,%dil
                                  cmp
 48f2c9:
             75 13
                                       48f2de <base from cb data.part.5+0x3e>
                                  ine
 48f2cb:
             31 c0
                                       %eax,%eax
                                  xor
 48f2cd:
             c3
                           retq
 48f2ce:
             66 90
                                  xchg %ax,%ax
 48f2d0:
             48 8b 46 08
                                        0x8(%rsi),%rax
                                  mov
 48f2d4:
             c3
                           retq
                                  nopl (%rax)
 48f2d5:
             0f 1f 00
             40 80 ff 50
                                        $0x50,%dil
 48f2d8:
                                  cmp
             74 ed
                                       48f2cb <br/>base from cb data.part.5+0x2b>
 48f2dc:
                                  ie
 48f2de:
             48 83 ec 08
                                       $0x8,%rsp
                                  sub
 48f2e2:
             e8 a9 ed f7 ff
                                  callq 40e090 <abort>
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
 48f2e7:
             00 00
 48f2ee:
00000000048f2f0 < Unwind IteratePhdrCallback>:
 48f2f0:
             41 57
                                  push %r15
 48f2f2:
             41 56
                                  push %r14
 48f2f4:
             41 55
                                  push %r13
 48f2f6:
             41 54
                                  push %r12
 48f2f8:
             55
                           push
                                 %rbp
 48f2f9:
             53
                           push
                                 %rbx
 48f2fa:
             48 83 ec 58
                                  sub
                                       $0x58,%rsp
 48f2fe:
             8b 4a 28
                                        0x28(%rdx),%ecx
                                  mov
 48f301:
             48 8b 47 10
                                        0x10(%rdi),%rax
                                  mov
                                        (%rdi),%r10
 48f305:
             4c 8b 17
                                  mov
                                  test %ecx,%ecx
 48f308:
             85 c9
 48f30a:
             74 0a
                                       48f316 < _Unwind_IteratePhdrCallback+0x26>
                                  je
 48f30c:
             48 83 fe 2f
                                        $0x2f,%rsi
                                  cmp
             0f 87 42 01 00 00
                                       48f458 < _Unwind_IteratePhdrCallback+0x168>
 48f310:
                                  ia
 48f316:
             48 83 fe 19
                                  cmp
                                        $0x19,%rsi
 48f31a:
             0f 86 c0 03 00 00
                                  jbe
                                       48f6e0 < _Unwind_IteratePhdrCallback+0x3f0>
                                  xor
                                       %r14d,%r14d
 48f320:
             45 31 f6
 48f323:
             48 c7 44 24 08 00 00 movg $0x0,0x8(%rsp)
 48f32a:
             00 00
                                  movzwl 0x18(%rdi),%ecx
 48f32c:
             0f b7 4f 18
             48 83 e9 01
                                       $0x1,%rcx
 48f330:
                                  sub
                                        $0xffffffffffffff,%rcx
 48f334:
             48 83 f9 ff
                                  cmp
 48f338:
             0f 84 02 01 00 00
                                       48f440 < Unwind_IteratePhdrCallback+0x150>
                                  je
 48f33e:
             45 31 e4
                                       %r12d,%r12d
                                  xor
                                       %r13d,%r13d
 48f341:
             45 31 ed
                                  xor
 48f344:
             31 db
                                       %ebx,%ebx
                                  xor
 48f346:
             45 31 c0
                                       %r8d,%r8d
                                  xor
             31 ed
 48f349:
                                       %ebp,%ebp
                                  xor
 48f34b:
             41 bf 01 00 00 00
                                        $0x1,%r15d
                                  mov
                                        48f379 < Unwind IteratePhdrCallback+0x89>
 48f351:
             eb 26
                                  jmp
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
 48f353:
             81 ff 50 e5 74 64
 48f358:
                                        $0x6474e550,%edi
                                  cmp
             0f 84 cc 00 00 00
                                       48f430 < Unwind IteratePhdrCallback+0x140>
 48f35e:
                                  je
             83 ff 02
                                        $0x2,%edi
 48f364:
                                  cmp
```

```
48f367:
             4c 0f 44 c0
                                 cmove %rax.%r8
48f36b:
             48 83 e9 01
                                       $0x1,%rcx
                                 sub
                                       $0x38,%rax
48f36f:
             48 83 c0 38
                                 add
                                       $0xffffffffffffff,%rcx
48f373:
             48 83 f9 ff
                                 cmp
48f377:
             74 3f
                                      48f3b8 < Unwind IteratePhdrCallback+0xc8>
                                 ie
48f379:
             8b 38
                                       (%rax),%edi
                                 mov
48f37b:
             83 ff 01
                                 cmp
                                       $0x1,%edi
                                      48f358 < Unwind IteratePhdrCallback+0x68>
48f37e:
             75 d8
                                 ine
48f380:
             4c 8b 48 10
                                       0x10(\%rax),\%r9
                                 mov
48f384:
             48 8b 3a
                                       (%rdx),%rdi
                                 mov
48f387:
             4d 01 d1
                                 add
                                       %r10,%r9
             4c 39 cf
                                       %r9.%rdi
48f38a:
                                 cmp
48f38d:
             72 dc
                                      48f36b < Unwind IteratePhdrCallback+0x7b>
                                 jb
48f38f:
             4c 8b 58 28
                                       0x28(%rax),%r11
                                 mov
                                       %r9,%r11
48f393:
             4d 01 cb
                                 add
48f396:
             4c 39 df
                                       %r11.%rdi
                                 cmp
48f399:
             4d 0f 42 e3
                                 cmovb %r11,%r12
48f39d:
             4d 0f 42 e9
                                 cmovb %r9,%r13
48f3a1:
             49 0f 42 df
                                 cmovb %r15,%rbx
48f3a5:
             48 83 e9 01
                                 sub
                                       $0x1,%rcx
48f3a9:
             48 83 c0 38
                                 add
                                       $0x38,%rax
48f3ad:
             48 83 f9 ff
                                 cmp
                                       $0xfffffffffffffff,%rcx
48f3b1:
             75 c6
                                      48f379 < Unwind IteratePhdrCallback+0x89>
                                 ine
             0f 1f 44 00 00
48f3b3:
                                 nopl 0x0(\%rax,\%rax,1)
             48 85 db
                                 test %rbx,%rbx
48f3b8:
48f3bb:
             0f 84 7f 00 00 00
                                      48f440 < Unwind IteratePhdrCallback+0x150>
                                 ie
                                       $0x2f,%rsi
             48 83 fe 2f
48f3c1:
                                 cmp
             76 3f
48f3c5:
                                      48f406 < Unwind IteratePhdrCallback+0x116>
                                 ibe
                                      %r14,%r14
48f3c7:
             4d 85 f6
                                 test
48f3ca:
             48 8b 05 87 de 22 00 mov 0x22de87(%rip),%rax
                                                                 #6bd258
<frame hdr cache head>
             74 20
                                      48f3f3 <_Unwind_IteratePhdrCallback+0x103>
48f3d1:
                                 ie
48f3d3:
             48 8b 5c 24 08
                                 mov
                                       0x8(%rsp),%rbx
48f3d8:
             48 85 db
                                 test %rbx,%rbx
             74 16
                                      48f3f3 < Unwind IteratePhdrCallback+0x103>
48f3db:
                                 je
48f3dd:
             49 8b 4e 28
                                 mov
                                       0x28(%r14),%rcx
             4c 89 35 70 de 22 00 mov
                                       %r14,0x22de70(%rip)
                                                                 #6bd258
48f3e1:
<frame hdr cache head>
48f3e8:
             48 89 4b 28
                                        %rcx,0x28(%rbx)
                                 mov
                                       %rax,0x28(%r14)
48f3ec:
             49 89 46 28
                                 mov
48f3f0:
             4c 89 f0
                                       %r14,%rax
                                 mov
48f3f3:
             4c 89 50 10
                                       %r10,0x10(%rax)
                                 mov
48f3f7:
             48 89 68 18
                                       %rbp,0x18(%rax)
                                 mov
48f3fb:
             4c 89 40 20
                                       %r8,0x20(%rax)
                                 mov
48f3ff:
             4c 89 28
                                 mov
                                       %r13,(%rax)
48f402:
             4c 89 60 08
                                       %r12,0x8(%rax)
                                 mov
48f406:
             48 85 ed
                                 test %rbp,%rbp
             74 35
                                      48f440 < _Unwind_IteratePhdrCallback+0x150>
48f409:
                                 je
             48 8b 5d 10
                                       0x10(%rbp),%rbx
48f40b:
                                 mov
                                       %r10,%rbx
48f40f:
             4c 01 d3
                                 add
             80 3b 01
                                 cmpb $0x1,(%rbx)
48f412:
48f415:
             0f 84 2d 01 00 00
                                 ie
                                      48f548 < _Unwind_IteratePhdrCallback+0x258>
```

```
48f41b:
             48 83 c4 58
                                 add
                                       $0x58,%rsp
48f41f:
             b8 01 00 00 00
                                       $0x1,%eax
                                 mov
                                %rbx
48f424:
             5b
                          pop
48f425:
             5d
                                %rbp
                          pop
48f426:
             41 5c
                                       %r12
                                 pop
48f428:
             41 5d
                                       %r13
                                 pop
48f42a:
             41 5e
                                       %r14
                                 pop
48f42c:
             41 5f
                                       %r15
                                 pop
48f42e:
             с3
                          retq
48f42f:
             90
                          nop
                                       %rax,%rbp
48f430:
             48 89 c5
                                 mov
48f433:
             e9 33 ff ff ff
                                 impg 48f36b < Unwind IteratePhdrCallback+0x7b>
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
48f438:
48f43f:
             00
             31 c0
                                      %eax,%eax
48f440:
                                 xor
48f442:
             48 83 c4 58
                                       $0x58,%rsp
                                 add
48f446:
             5b
                          pop
                                %rbx
48f447:
             5d
                          pop
                                %rbp
48f448:
             41 5c
                                       %r12
                                 pop
48f44a:
             41 5d
                                       %r13
                                 pop
48f44c:
             41 5e
                                       %r14
                                 pop
48f44e:
             41 5f
                                 pop
                                       %r15
48f450:
             c3
                          retq
48f451:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
                                       0x20(%rdi),%rcx
48f458:
             48 8b 4f 20
                                 mov
48f45c:
             48 3b 0d e5 c7 22 00 cmp
                                       0x22c7e5(%rip),%rcx
                                                                # 6bbc48 <adds.9722>
             4c 8b 47 28
                                       0x28(%rdi),%r8
48f463:
                                 mov
             74 77
                                      48f4e0 < Unwind IteratePhdrCallback+0x1f0>
48f467:
                                 je
             48 89 0d d8 c7 22 00 mov
                                       %rcx,0x22c7d8(%rip)
                                                                # 6bbc48 <adds.9722>
48f469:
48f470:
             48 8d 0d 19 de 22 00 lea
                                      0x22de19(%rip),%rcx
                                                               #6bd290
<frame_hdr_cache+0x30>
48f477:
             4c 89 05 d2 dd 22 00 mov
                                       %r8,0x22ddd2(%rip)
                                                               # 6bd250 <subs.9723>
             4c 8d 81 80 01 00 00 lea
48f47e:
                                     0x180(%rcx),%r8
48f485:
             0f 1f 00
                                 nopl (%rax)
             48 c7 41 d0 00 00 00 movg $0x0,-0x30(%rcx)
48f488:
48f48f:
             00
             48 c7 41 d8 00 00 00 movq $0x0,-0x28(%rcx)
48f490:
48f497:
             00
             48 89 49 f8
48f498:
                                 mov
                                       %rcx,-0x8(%rcx)
             48 83 c1 30
                                       $0x30,%rcx
48f49c:
                                 add
48f4a0:
             49 39 c8
                                       %rcx,%r8
                                 cmp
48f4a3:
             75 e3
                                 jne
                                      48f488 < Unwind IteratePhdrCallback+0x198>
                                      0x22ddb4(%rip),%rbx
48f4a5:
             48 8d 1d b4 dd 22 00 lea
                                                               #6bd260 <frame hdr cache>
             48 c7 05 21 df 22 00 movq $0x0,0x22df21(%rip)
                                                                #6bd3d8
48f4ac:
<frame_hdr_cache+0x178>
             00 00 00 00
48f4b3:
                                      %r14d,%r14d
48f4b7:
             45 31 f6
                                 xor
48f4ba:
             c7 42 28 00 00 00 00 movl $0x0,0x28(%rdx)
48f4c1:
             48 c7 44 24 08 00 00 movg $0x0,0x8(%rsp)
             00 00
48f4c8:
48f4ca:
             48 89 1d 87 dd 22 00 mov
                                       %rbx,0x22dd87(%rip)
                                                                 #6bd258
<frame_hdr_cache_head>
```

```
48f4d1:
             e9 56 fe ff ff
                                 jmpq 48f32c < Unwind IteratePhdrCallback+0x3c>
48f4d6:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
48f4dd:
             00 00 00
48f4e0:
             4c 39 05 69 dd 22 00 cmp
                                       %r8,0x22dd69(%rip)
                                                                # 6bd250 <subs.9723>
48f4e7:
             75 80
                                      48f469 < Unwind IteratePhdrCallback+0x179>
                                 jne
             4c 8b 1d 68 dd 22 00 mov 0x22dd68(%rip),%r11
48f4e9:
                                                                 #6bd258
<frame_hdr_cache_head>
48f4f0:
             4d 85 db
                                 test %r11.%r11
48f4f3:
             0f 84 27 fe ff ff
                                      48f320 < Unwind IteratePhdrCallback+0x30>
                                 ie
48f4f9:
             4d 89 de
                                       %r11,%r14
                                 mov
                                       (%rdx),%r9
48f4fc:
             4c 8b 0a
                                 mov
             31 db
                                       %ebx,%ebx
48f4ff:
                                 xor
48f501:
             49 8b 0e
                                       (%r14),%rcx
                                 mov
48f504:
             4d 8b 46 08
                                       0x8(%r14),%r8
                                 mov
                                       %rcx,%r9
48f508:
             49 39 c9
                                 cmp
                                 jb
                                      48f519 < Unwind IteratePhdrCallback+0x229>
48f50b:
             72 0c
                                 nopl (%rax)
48f50d:
             0f 1f 00
48f510:
             4d 39 c1
                                 cmp
                                       %r8,%r9
                                      48f772 < Unwind IteratePhdrCallback+0x482>
48f513:
             0f 82 59 02 00 00
                                 ib
48f519:
             4c 09 c1
                                 or
                                      %r8,%rcx
48f51c:
             0f 84 0e 01 00 00
                                      48f630 < Unwind IteratePhdrCallback+0x340>
                                 je
48f522:
             49 8b 4e 28
                                 mov
                                       0x28(%r14),%rcx
48f526:
             48 85 c9
                                 test %rcx,%rcx
             0f 84 01 01 00 00
                                      48f630 < Unwind IteratePhdrCallback+0x340>
48f529:
                                 ie
48f52f:
             4c 89 f3
                                        %r14,%rbx
                                 mov
48f532:
             49 89 ce
                                        %rcx,%r14
                                 mov
             49 8b 0e
                                       (%r14),%rcx
48f535:
                                 mov
48f538:
                                       0x8(%r14),%r8
             4d 8b 46 08
                                 mov
                                       %rcx,%r9
48f53c:
             49 39 c9
                                 cmp
48f53f:
             72 d8
                                      48f519 < _Unwind_IteratePhdrCallback+0x229>
                                 jb
                                       48f510 < Unwind IteratePhdrCallback+0x220>
48f541:
             eb cd
                                 jmp
48f543:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48f548:
             44 0f b6 63 01
                                 movzbl 0x1(%rbx),%r12d
48f54d:
             31 f6
                                       %esi,%esi
                                 xor
             48 89 d5
                                       %rdx,%rbp
48f54f:
                                 mov
48f552:
             4c 8d 6b 04
                                 lea
                                      0x4(%rbx),%r13
48f556:
             41 80 fc ff
                                       $0xff,%r12b
                                 cmp
                                      48f56a < Unwind IteratePhdrCallback+0x27a>
             74 0e
48f55a:
                                 ie
48f55c:
             48 89 d6
                                        %rdx,%rsi
                                 mov
                                       %r12d,%edi
48f55f:
             44 89 e7
                                 mov
48f562:
             e8 39 fd ff ff
                                 callq 48f2a0 <base_from_cb_data.part.5>
48f567:
             48 89 c6
                                 mov
                                        %rax,%rsi
48f56a:
             48 8d 4c 24 10
                                      0x10(\%rsp),\%rcx
                                 lea
                                        %r13,%rdx
48f56f:
             4c 89 ea
                                 mov
48f572:
             44 89 e7
                                 mov
                                       %r12d,%edi
48f575:
             e8 f6 eb ff ff
                                 callg 48e170 < read encoded value with base>
                                 movzbl 0x2(%rbx),%edi
48f57a:
             0f b6 7b 02
             49 89 c5
                                        %rax,%r13
48f57e:
                                 mov
             40 80 ff ff
                                       $0xff,%dil
48f581:
                                 cmp
             74 0a
                                      48f591 < _Unwind_IteratePhdrCallback+0x2a1>
48f585:
             80 7b 03 3b
                                 cmpb $0x3b,0x3(\%rbx)
48f587:
             0f 84 a9 00 00 00
                                      48f63a <_Unwind_IteratePhdrCallback+0x34a>
48f58b:
                                 ie
```

```
48f591:
            48 8b 55 00
                                       0x0(\%rbp).\%rdx
                                 mov
48f595:
            48 8b 45 08
                                       0x8(%rbp),%rax
                                 mov
48f599:
            48 8b 74 24 10
                                 mov
                                       0x10(%rsp),%rsi
48f59e:
            48 8d 7c 24 20
                                 lea 0x20(%rsp),%rdi
48f5a3:
            48 c7 44 24 20 00 00 movg $0x0,0x20(%rsp)
48f5aa:
            00 00
48f5ac:
            48 c7 44 24 40 04 00 movg $0x4,0x40(%rsp)
            00 00
48f5b3:
48f5b5:
            48 89 44 24 28
                                       %rax,0x28(%rsp)
                                 mov
48f5ba:
            48 8b 45 10
                                 mov
                                       0x10(%rbp),%rax
                                       %rsi,0x38(%rsp)
48f5be:
            48 89 74 24 38
                                 mov
            48 89 44 24 30
                                       %rax,0x30(%rsp)
48f5c3:
                                 mov
48f5c8:
            e8 53 ef ff ff
                                 callq 48e520 < linear search fdes>
48f5cd:
            48 85 c0
                                 test %rax,%rax
48f5d0:
            48 89 45 20
                                      %rax,0x20(%rbp)
                                 mov
            0f 84 41 fe ff ff
                                     48f41b < Unwind IteratePhdrCallback+0x12b>
48f5d4:
                                 ie
48f5da:
            48 8d 78 04
                                 lea
                                     0x4(%rax),%rdi
48f5de:
            48 63 40 04
                                 movslq 0x4(%rax),%rax
                                     %rax,%rdi
48f5e2:
            48 29 c7
                                 sub
48f5e5:
            e8 c6 ec ff ff
                                 callq 48e2b0 <get_cie_encoding>
48f5ea:
            48 8b 75 20
                                       0x20(%rbp),%rsi
                                 mov
48f5ee:
            44 0f b6 e0
                                 movzbl %al,%r12d
48f5f2:
            48 8d 5e 08
                                     0x8(%rsi),%rbx
48f5f6:
            31 f6
                                      %esi,%esi
                                 xor
48f5f8:
            3c ff
                                $0xff,%al
                          cmp
48f5fa:
            75 1e
                                      48f61a < Unwind IteratePhdrCallback+0x32a>
                                 ine
            48 8d 4c 24 18
                                      0x18(\%rsp),\%rcx
48f5fc:
                                 lea
                                       %rbx,%rdx
48f601:
            48 89 da
                                 mov
            44 89 e7
                                       %r12d,%edi
48f604:
                                 mov
48f607:
            e8 64 eb ff ff
                                 callq 48e170 <read_encoded_value_with_base>
48f60c:
            48 8b 44 24 18
                                 mov
                                       0x18(\%rsp),\%rax
            48 89 45 18
48f611:
                                 mov
                                       %rax,0x18(%rbp)
48f615:
            e9 01 fe ff ff
                                 jmpq
                                       48f41b < Unwind IteratePhdrCallback+0x12b>
48f61a:
            48 89 ee
                                       %rbp,%rsi
                                 mov
            44 89 e7
48f61d:
                                 mov
                                       %r12d,%edi
                                 callq 48f2a0 <base from cb data.part.5>
48f620:
            e8 7b fc ff ff
48f625:
            48 89 c6
                                       %rax,%rsi
                                 mov
48f628:
            eb d2
                                       48f5fc < Unwind IteratePhdrCallback+0x30c>
                                 imp
48f62a:
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48f630:
            48 89 5c 24 08
                                 mov
                                       %rbx,0x8(%rsp)
                                 jmpq 48f32c <_Unwind_IteratePhdrCallback+0x3c>
48f635:
            e9 f2 fc ff ff
48f63a:
            44 0f b6 e7
                                 movzbl %dil,%r12d
48f63e:
            48 89 ee
                                       %rbp,%rsi
                                 mov
                                       %r12d,%edi
48f641:
            44 89 e7
                                 mov
48f644:
            e8 57 fc ff ff
                                 callq 48f2a0 <base_from_cb_data.part.5>
48f649:
            48 8d 4c 24 18
                                 lea 0x18(\%rsp),\%rcx
48f64e:
            4c 89 ea
                                 mov
                                       %r13,%rdx
            48 89 c6
                                       %rax,%rsi
48f651:
                                 mov
            44 89 e7
                                       %r12d,%edi
48f654:
                                 mov
            e8 14 eb ff ff
                                 callg 48e170 < read encoded value with base>
48f657:
            48 8b 4c 24 18
                                       0x18(\%rsp),\%rcx
48f65c:
                                 mov
                                 test %rcx,%rcx
48f661:
            48 85 c9
```

```
48f664:
            0f 84 b1 fd ff ff
                                      48f41b < Unwind IteratePhdrCallback+0x12b>
                                 ie
48f66a:
            a8 03
                                 test $0x3,%al
48f66c:
            48 8b 55 00
                                 mov
                                       0x0(\%rbp),\%rdx
48f670:
            0f 85 1f ff ff ff
                                      48f595 < Unwind IteratePhdrCallback+0x2a5>
                                 ine
            48 63 30
                                 movslq (%rax),%rsi
48f676:
48f679:
            48 01 de
                                 add
                                       %rbx,%rsi
48f67c:
            48 39 d6
                                 cmp
                                       %rdx,%rsi
            0f 87 96 fd ff ff
                                      48f41b < Unwind IteratePhdrCallback+0x12b>
48f67f:
                                 ia
            48 8d 71 ff
                                      -0x1(%rcx),%rsi
48f685:
                                 lea
                                %edi,%edi
48f689:
            31 ff
                          xor
                                 lea (%rax,%rsi,8),%r12
48f68b:
            4c 8d 24 f0
                                 movslg (%r12),%rcx
48f68f:
            49 63 0c 24
                                       %rbx,%rcx
48f693:
            48 01 d9
                                 add
48f696:
            48 39 d1
                                 cmp
                                       %rdx,%rcx
48f699:
            76 69
                                      48f704 < _Unwind_IteratePhdrCallback+0x414>
                                 jbe
48f69b:
            48 39 fe
                                       %rdi.%rsi
                                 cmp
48f69e:
            76 33
                                 ibe
                                      48f6d3 < Unwind IteratePhdrCallback+0x3e3>
48f6a0:
            48 8d 0c 3e
                                 lea
                                      (%rsi,%rdi,1),%rcx
48f6a4:
            48 d1 e9
                                 shr
                                      %rcx
48f6a7:
            4c 63 04 c8
                                 movslq (%rax,%rcx,8),%r8
48f6ab:
            49 01 d8
                                 add
                                       %rbx,%r8
48f6ae:
            49 39 d0
                                 cmp
                                       %rdx,%r8
48f6b1:
            76.3d
                                 ibe
                                      48f6f0 < Unwind IteratePhdrCallback+0x400>
            48 39 cf
48f6b3:
                                 cmp
                                       %rcx,%rdi
                                      48f6d3 < Unwind IteratePhdrCallback+0x3e3>
48f6b6:
            73 1b
                                 iae
48f6b8:
            4c 8d 04 0f
                                 lea
                                      (%rdi,%rcx,1),%r8
                                      %r8
            49 d1 e8
48f6bc:
                                 shr
            4a 63 34 c0
                                 movslq (%rax,%r8,8),%rsi
48f6bf:
                                       %rbx,%rsi
48f6c3:
            48 01 de
                                 add
48f6c6:
            48 39 d6
                                       %rdx,%rsi
                                 cmp
                                      48f6ea < Unwind IteratePhdrCallback+0x3fa>
48f6c9:
            76 1f
                                 ibe
            4c 89 c1
                                       %r8,%rcx
48f6cb:
                                 mov
48f6ce:
            48 39 cf
                                 cmp
                                       %rcx,%rdi
48f6d1:
            72 e5
                                      48f6b8 < _Unwind_IteratePhdrCallback+0x3c8>
                                 jb
                                 callq 40e090 <abort>
            e8 b8 e9 f7 ff
48f6d3:
48f6d8:
            0f 1f 84 00 00 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48f6df:
            00
            b8 ff ff ff ff
48f6e0:
                                       $0xffffffff.%eax
                                 mov
48f6e5:
            e9 58 fd ff ff
                                       48f442 < Unwind IteratePhdrCallback+0x152>
                                 jmpq
48f6ea:
            48 89 ce
                                       %rcx,%rsi
                                 mov
48f6ed:
            4c 89 c1
                                       %r8,%rcx
                                 mov
48f6f0:
            48 8d 79 01
                                 lea
                                     0x1(%rcx),%rdi
48f6f4:
            4c 63 04 f8
                                 movslq (%rax,%rdi,8),%r8
                                       %rbx,%r8
48f6f8:
            49 01 d8
                                 add
48f6fb:
            49 39 d0
                                 cmp
                                       %rdx,%r8
48f6fe:
            76.9b
                                 ibe
                                      48f69b < Unwind IteratePhdrCallback+0x3ab>
48f700:
            4c 8d 24 c8
                                      (%rax,%rcx,8),%r12
                                 lea
48f704:
            4d 63 6c 24 04
                                 movslq 0x4(%r12),%r13
48f709:
                                 add
                                       %rbx,%r13
            49 01 dd
            49 63 45 04
                                 movslg 0x4(%r13),%rax
48f70c:
            49 8d 7d 04
                                      0x4(%r13),%rdi
48f710:
                                 lea
            48 29 c7
                                       %rax,%rdi
48f714:
                                 sub
```

```
48f717:
             e8 94 eb ff ff
                                 callq 48e2b0 <get cie encoding>
 48f71c:
             41 89 c6
                                       %eax,%r14d
                                 mov
 48f71f:
             ь8 08 00 00 00
                                 mov
                                       $0x8,%eax
 48f724:
             41 80 fe ff
                                       $0xff.%r14b
                                 cmp
                                      48f739 < Unwind IteratePhdrCallback+0x449>
 48f728:
             74 0f
 48f72a:
             41 0f b6 fe
                                 movzbl %r14b,%edi
 48f72e:
             e8 bd ec ff ff
                                 callq 48e3f0 <size_of_encoded_value.part.3>
 48f733:
                                       %eax,%eax
             89 c0
                                 mov
 48f735:
             48 83 c0 08
                                      $0x8,%rax
                                 add
                                     0x20(%rsp),%rcx
 48f739:
             48 8d 4c 24 20
                                 lea
             49 8d 54 05 00
                                      0x0(%r13,%rax,1),%rdx
 48f73e:
                                 lea
 48f743:
             44 89 f7
                                       %r14d,%edi
                                 mov
             83 e7 0f
                                      $0xf,%edi
 48f746:
                                 and
 48f749:
             31 f6
                                      %esi,%esi
                                 xor
             e8 20 ea ff ff
 48f74b:
                                 callq 48e170 <read_encoded_value_with_base>
 48f750:
             4d 63 14 24
                                 movslq (%r12),%r10
 48f754:
             48 8b 44 24 20
                                 mov
                                       0x20(%rsp),%rax
                                       %rbx,%r10
 48f759:
             49 01 da
                                 add
                                      %r10,%rax
 48f75c:
             4c 01 d0
                                 add
 48f75f:
             48 39 45 00
                                 cmp
                                       %rax,0x0(%rbp)
 48f763:
             73 04
                                      48f769 < Unwind IteratePhdrCallback+0x479>
                                 jae
 48f765:
             4c 89 6d 20
                                 mov
                                       %r13,0x20(%rbp)
 48f769:
             4c 89 55 18
                                 mov
                                       %r10.0x18(%rbp)
             e9 a9 fc ff ff
                                       48f41b < Unwind IteratePhdrCallback+0x12b>
 48f76d:
                                 jmpq
 48f772:
             4d 39 f3
                                       %r14,%r11
                                 cmp
 48f775:
             4d 8b 56 10
                                       0x10(%r14),%r10
                                 mov
 48f779:
             49 8b 6e 18
                                       0x18(%r14),%rbp
                                 mov
 48f77d:
             0f 84 83 fc ff ff
                                     48f406 < Unwind IteratePhdrCallback+0x116>
                                 je
                                       0x28(%r14),%rax
 48f783:
             49 8b 46 28
                                 mov
 48f787:
             4c 89 35 ca da 22 00 mov
                                       %r14,0x22daca(%rip)
                                                                #6bd258
<frame hdr cache head>
 48f78e:
             48 89 43 28
                                       %rax,0x28(%rbx)
                                 mov
 48f792:
             4d 89 5e 28
                                 mov
                                       %r11,0x28(%r14)
                                 jmpq 48f406 <_Unwind_IteratePhdrCallback+0x116>
 48f796:
             e9 6b fc ff ff
 48f79b:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
00000000048f7a0 < __register_frame_info_bases.part.6>:
             48 83 3d 80 a7 22 00 cmpg $0x0,0x22a780(%rip)
 48f7a0:
                                                                # 6b9f28 < .got+0x30>
 48f7a7:
             00
             48 c7 06 ff ff ff ff
                                 48f7a8:
             48 89 56 08
                                       %rdx,0x8(%rsi)
 48f7af:
                                 mov
 48f7b3:
             48 89 4e 10
                                 mov
                                       %rcx,0x10(%rsi)
 48f7b7:
             48 89 7e 18
                                       %rdi,0x18(%rsi)
                                 mov
             48 c7 46 20 f8 07 00 movg $0x7f8,0x20(%rsi)
 48f7bb:
 48f7c2:
             00
             74 4b
 48f7c3:
                                 je
                                      48f810 < register frame info bases.part.6+0x70>
 48f7c5:
             53
                          push %rbx
             48 8d 3d 13 dc 22 00 lea
                                     0x22dc13(%rip),%rdi
                                                              # 6bd3e0 <object mutex>
 48f7c6:
             48 89 f3
                                       %rsi,%rbx
 48f7cd:
                                 mov
             e8 2b 08 b7 ff
                                 callq 0 < nl current LC CTYPE>
 48f7d0:
             8b 15 2d dc 22 00
                                       0x22dc2d(\%rip),\%edx
                                                                #6bd408
 48f7d5:
                                 mov
<any_objects_registered>
```

```
48f7db:
             48 8b 05 36 dc 22 00 mov
                                        0x22dc36(%rip),%rax
                                                                 #6bd418 <unseen objects>
 48f7e2:
             48 89 1d 2f dc 22 00 mov
                                        %rbx,0x22dc2f(%rip)
                                                                 #6bd418 < unseen objects >
 48f7e9:
             85 d2
                                  test %edx,%edx
 48f7eb:
             48 89 43 28
                                        %rax,0x28(%rbx)
                                  mov
                                       48f7fb <__register_frame_info_bases.part.6+0x5b>
 48f7ef:
             75 0a
                                  ine
             c7 05 0d dc 22 00 01 movl $0x1,0x22dc0d(%rip)
 48f7f1:
                                                                 #6bd408
<any_objects_registered>
 48f7f8:
             00 00 00
 48f7fb:
             5b
                           pop
                                 %rbx
             48 8d 3d dd db 22 00 lea
                                      0x22dbdd(%rip),%rdi
 48f7fc:
                                                                # 6bd3e0 < object mutex >
                                  jmpq 0 <_nl_current_LC CTYPE>
             e9 f8 07 b7 ff
 48f803:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48f808:
 48f80f:
             00
 48f810:
             48 8b 05 01 dc 22 00 mov
                                        0x22dc01(%rip),%rax
                                                                 #6bd418 <unseen objects>
             48 89 35 fa db 22 00 mov
                                        %rsi,0x22dbfa(%rip)
 48f817:
                                                                # 6bd418 <unseen_objects>
                                        %rax.0x28(%rsi)
 48f81e:
             48 89 46 28
                                  mov
 48f822:
             8b 05 e0 db 22 00
                                  mov
                                        0x22dbe0(\%rip),\%eax
                                                                  #6bd408
<any_objects_registered>
 48f828:
             85 c0
                                  test %eax.%eax
 48f82a:
             74 04
                                  ie
                                      48f830 < register frame info bases.part.6+0x90>
 48f82c:
             f3 c3
                                  repz retq
                                  xchg %ax,%ax
 48f82e:
             66 90
 48f830:
             c7 05 ce db 22 00 01 movl $0x1,0x22dbce(%rip)
                                                                 #6bd408
<any objects registered>
             00 00 00
 48f837:
 48f83a:
             c3
                           retq
                                  nopl 0x0(\%rax,\%rax,1)
 48f83b:
             0f 1f 44 00 00
00000000048f840 < __register_frame_info_bases>:
 48f840:
             48 85 ff
                                  test %rdi,%rdi
             74 0b
                                      48f850 < register frame info bases+0x10>
 48f843:
             8b 07
                                        (%rdi),%eax
 48f845:
                                  mov
 48f847:
             85 c0
                                  test %eax,%eax
 48f849:
             74 05
                                      48f850 < __register_frame_info_bases+0x10>
             e9 50 ff ff ff
                                  jmpq 48f7a0 < __register_frame_info_bases.part.6>
 48f84b:
 48f850:
             f3 c3
                                  repz retq
                                  nopl 0x0(\%rax)
             0f 1f 40 00
 48f852:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48f856:
 48f85d:
             00 00 00
00000000048f860 < __register_frame_info>:
 48f860:
             48 85 ff
                                  test %rdi,%rdi
             74 06
 48f863:
                                      48f86b < __register_frame_info+0xb>
                                  je
                                        (%rdi),%eax
 48f865:
             8b 07
                                  mov
 48f867:
             85 c0
                                  test %eax,%eax
 48f869:
             75 05
                                      48f870 < register frame info+0x10>
                                  ine
 48f86b:
             f3 c3
                                  repz retq
             0f 1f 00
 48f86d:
                                  nopl (%rax)
             31 c9
                                       %ecx,%ecx
 48f870:
                                  xor
                                       %edx,%edx
 48f872:
             31 d2
                                  xor
             e9 27 ff ff ff
                                  jmpq 48f7a0 < register frame info bases.part.6>
 48f874:
             Of 1f 80 00 00 00 00 nopl 0x0(%rax)
 48f879:
```

```
00000000048f880 < register frame>:
 48f880:
             8b 07
                                  mov
                                        (%rdi),%eax
 48f882:
             85 c0
                                  test
                                      %eax.%eax
 48f884:
             75 0a
                                       48f890 < __register_frame+0x10>
                                  ine
 48f886:
             f3 c3
                                  repz retq
 48f888:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48f88f:
             00
 48f890:
             53
                           push %rbx
                                        %rdi,%rbx
 48f891:
             48 89 fb
                                 mov
             bf 30 00 00 00
 48f894:
                                  mov
                                        $0x30,%edi
 48f899:
             e8 f2 02 f9 ff
                                  callq 41fb90 < libc malloc>
 48f89e:
             48 89 df
                                        %rbx,%rdi
                                  mov
 48f8a1:
             31 c9
                                       %ecx,%ecx
                                  xor
 48f8a3:
             31 d2
                                       %edx,%edx
                                  xor
 48f8a5:
             5b
                                 %rbx
                           pop
 48f8a6:
             48 89 c6
                                  mov
                                        %rax,%rsi
             e9 f2 fe ff ff
                                  jmpq 48f7a0 < __register_frame_info_bases.part.6>
 48f8a9:
 48f8ae:
             66 90
                                  xchg %ax,%ax
00000000048f8b0 < __register_frame_info_table_bases>:
             48 83 3d 70 a6 22 00 cmpg $0x0,0x22a670(%rip)
 48f8b0:
                                                                 # 6b9f28 < .got+0x30>
 48f8b7:
             00
             48 c7 06 ff ff ff ff
                                        $0xfffffffffffffff(%rsi)
 48f8b8:
                                  movq
             48 89 56 08
                                        %rdx,0x8(%rsi)
 48f8bf:
                                  mov
 48f8c3:
             48 89 4e 10
                                        %rcx,0x10(%rsi)
                                  mov
             48 89 7e 18
                                        %rdi,0x18(%rsi)
 48f8c7:
                                  mov
 48f8cb:
             48 c7 46 20 fa 07 00 movg $0x7fa,0x20(%rsi)
 48f8d2:
             00
 48f8d3:
             74 4b
                                      48f920 < __register_frame_info_table_bases+0x70>
                                 je
                           push %rbx
 48f8d5:
             53
             48 8d 3d 03 db 22 00 lea
                                      0x22db03(%rip),%rdi
                                                                # 6bd3e0 <object_mutex>
 48f8d6:
 48f8dd:
             48 89 f3
                                  mov
                                        %rsi,%rbx
 48f8e0:
             e8 1b 07 b7 ff
                                  callq 0 <_nl_current_LC_CTYPE>
             8b 15 1d db 22 00
                                        0x22db1d(\%rip),\%edx
                                                                  #6bd408
 48f8e5:
                                  mov
<any_objects_registered>
                                                                 # 6bd418 <unseen_objects>
 48f8eb:
             48 8b 05 26 db 22 00 mov
                                        0x22db26(%rip),%rax
             48 89 1d 1f db 22 00 mov
 48f8f2:
                                        %rbx.0x22db1f(%rip)
                                                                 #6bd418 < unseen objects >
 48f8f9:
             85 d2
                                  test %edx,%edx
             48 89 43 28
                                        %rax,0x28(%rbx)
 48f8fb:
                                  mov
 48f8ff:
             75 0a
                                      48f90b < __register_frame_info_table_bases+0x5b>
                                  ine
 48f901:
             c7 05 fd da 22 00 01 movl $0x1,0x22dafd(%rip)
                                                                 #6bd408
<any objects registered>
             00 00 00
 48f908:
 48f90b:
             5b
                           pop
                                %rbx
 48f90c:
             48 8d 3d cd da 22 00 lea
                                      0x22dacd(%rip),%rdi
                                                               # 6bd3e0 <object mutex>
 48f913:
             e9 e8 06 b7 ff
                                  impq 0 <_nl_current_LC_CTYPE>
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48f918:
             00
 48f91f:
             48 8b 05 f1 da 22 00 mov
 48f920:
                                        0x22daf1(%rip),%rax
                                                                 #6bd418 <unseen objects>
 48f927:
             48 89 35 ea da 22 00 mov
                                        %rsi,0x22daea(%rip)
                                                                #6bd418 <unseen objects>
 48f92e:
             48 89 46 28
                                        %rax,0x28(%rsi)
                                  mov
```

```
48f932:
             8b 05 d0 da 22 00
                                 mov 0x22dad0(%rip),%eax
                                                                 #6bd408
<any objects registered>
 48f938:
             85 c0
                                 test %eax,%eax
 48f93a:
             74 04
                                      48f940 < register frame info table bases+0x90>
                                 ie
 48f93c:
             f3 c3
                                 repz reta
                                 xchg %ax,%ax
 48f93e:
             66 90
 48f940:
             c7 05 be da 22 00 01 movl $0x1,0x22dabe(%rip)
                                                                 #6bd408
<any objects registered>
 48f947:
             00 00 00
 48f94a:
             c3
                           retq
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
 48f94b:
00000000048f950 < register frame info table>:
 48f950:
             31 c9
                                 xor
                                       %ecx,%ecx
 48f952:
             31 d2
                                       %edx,%edx
                                 xor
 48f954:
             e9 57 ff ff ff
                                 jmpq 48f8b0 < register frame info table bases>
 48f959:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
00000000048f960 < __register_frame_table>:
                           push %rbx
 48f960:
             53
 48f961:
             48 89 fb
                                        %rdi,%rbx
                                 mov
 48f964:
             bf 30 00 00 00
                                 mov
                                        $0x30,%edi
 48f969:
             e8 22 02 f9 ff
                                 callq 41fb90 < libc malloc>
                                        %rbx,%rdi
             48 89 df
 48f96e:
                                 mov
             31 c9
 48f971:
                                       %ecx,%ecx
                                 xor
 48f973:
             31 d2
                                       %edx,%edx
                                 xor
 48f975:
             5b
                           pop
                                %rbx
 48f976:
             48 89 c6
                                        %rax,%rsi
                                 mov
 48f979:
             e9 32 ff ff ff
                                 impq 48f8b0 < __register_frame_info_table_bases>
 48f97e:
             66 90
                                 xchg %ax,%ax
00000000048f980 < __deregister_frame_info_bases>:
                                 test %rdi,%rdi
 48f980:
             48 85 ff
 48f983:
             41 54
                                 push %r12
                           push %rbp
 48f985:
             55
                           push
 48f986:
             53
                                %rbx
 48f987:
             0f 84 e3 00 00 00
                                      48fa70 < __deregister_frame_info_bases+0xf0>
                                 ie
 48f98d:
             8b 07
                                        (%rdi),%eax
                                 mov
 48f98f:
             85 c0
                                 test %eax,%eax
             0f 84 d9 00 00 00
                                      48fa70 < __deregister_frame_info_bases+0xf0>
 48f991:
                                 je
 48f997:
             49 c7 c4 00 00 00 00 mov
                                        $0x0,%r12
 48f99e:
             48 89 fd
                                 mov
                                        %rdi,%rbp
             4d 85 e4
                                 test %r12,%r12
 48f9a1:
             74.0c
                                      48f9b2 < __deregister_frame_info_bases+0x32>
 48f9a4:
                                 je
 48f9a6:
             48 8d 3d 33 da 22 00 lea 0x22da33(%rip),%rdi
                                                               # 6bd3e0 <object_mutex>
 48f9ad:
             e8 4e 06 b7 ff
                                 callq 0 < nl current LC CTYPE>
 48f9b2:
             48 8b 05 5f da 22 00 mov
                                        0x22da5f(%rip),%rax
                                                                 # 6bd418 <unseen_objects>
             48 85 c0
                                 test %rax,%rax
 48f9b9:
 48f9bc:
             74 24
                                      48f9e2 < __deregister_frame_info_bases+0x62>
             48 3b 68 18
                                       0x18(%rax),%rbp
 48f9be:
                                 cmp
             75 15
                                 ine 48f9d9 < deregister frame info bases+0x59>
 48f9c2:
 48f9c4:
             e9 c7 00 00 00
                                 jmpq 48fa90 < __deregister_frame_info_bases+0x110>
```

```
48f9c9:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48f9d0:
            48 3b 6b 18
                                       0x18(%rbx),%rbp
                                 cmp
                                     48fa48 < deregister frame info bases+0xc8>
48f9d4:
            74 72
                                 je
48f9d6:
            48 89 d8
                                       %rbx,%rax
                                 mov
48f9d9:
            48 8b 58 28
                                       0x28(%rax),%rbx
                                 mov
48f9dd:
            48 85 db
                                 test %rbx,%rbx
48f9e0:
            75 ee
                                      48f9d0 < __deregister_frame_info_bases+0x50>
                                 jne
                                                                # 6bd410 <seen_objects>
48f9e2:
            48 8b 1d 27 da 22 00 mov
                                       0x22da27(%rip),%rbx
48f9e9:
            48 85 db
                                 test %rbx,%rbx
48f9ec:
            74 62
                                     48fa50 < __deregister_frame_info_bases+0xd0>
                                 je
            48 8d 05 1b da 22 00 lea
                                     0x22da1b(%rip),%rax
                                                               #6bd410 <seen objects>
48f9ee:
                                      48fa12 < deregister frame info bases+0x92>
48f9f5:
                                 imp
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
48f9f7:
48f9fe:
            00 00
            48 3b 2f
48fa00:
                                 cmp
                                      (%rdi),%rbp
            74 7b
                                     48fa80 < deregister frame info bases+0x100>
48fa03:
                                 ie
48fa05:
            48 8d 43 28
                                 lea
                                     0x28(%rbx),%rax
48fa09:
            48 8b 5b 28
                                 mov 0x28(%rbx),%rbx
48fa0d:
            48 85 db
                                 test %rbx.%rbx
48fa10:
            74 3e
                                 ie
                                     48fa50 < __deregister_frame_info_bases+0xd0>
48fa12:
            f6 43 20 01
                                 testb $0x1,0x20(\%rbx)
48fa16:
            48 8b 7b 18
                                 mov
                                       0x18(%rbx),%rdi
48fa1a:
            75 e4
                                      48fa00 < deregister frame info bases+0x80>
                                 ine
            48 39 fd
48fa1c:
                                 cmp
                                       %rdi,%rbp
                                      48fa05 < __deregister_frame_info_bases+0x85>
48fa1f:
            75 e4
                                 ine
48fa21:
            48 8b 53 28
                                       0x28(%rbx),%rdx
                                 mov
48fa25:
            48 89 10
                                       %rdx,(%rax)
                                 mov
            4d 85 e4
                                 test %r12,%r12
48fa28:
            74 0c
                                     48fa39 < __deregister_frame_info_bases+0xb9>
48fa2b:
                                 ie
48fa2d:
            48 8d 3d ac d9 22 00 lea
                                     0x22d9ac(%rip),%rdi
                                                              # 6bd3e0 <object_mutex>
                                 callq 0 < nl current LC CTYPE>
48fa34:
            e8 c7 05 b7 ff
48fa39:
            48 89 d8
                                       %rbx,%rax
                                 mov
48fa3c:
            5b
                                %rbx
                          pop
48fa3d:
            5d
                          pop
                                %rbp
            41 5c
48fa3e:
                                 pop
                                      %r12
48fa40:
            c3
                          retq
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48fa41:
48fa48:
            48 83 c0 28
                                 add
                                      $0x28,%rax
48fa4c:
            eb d3
                                 imp
                                      48fa21 < __deregister_frame_info_bases+0xa1>
            66 90
                                 xchg %ax,%ax
48fa4e:
                                 test %r12,%r12
48fa50:
            4d 85 e4
48fa53:
            74.0c
                                 ie
                                     48fa61 < __deregister_frame_info_bases+0xe1>
                                     0x22d984(%rip),%rdi
                                                               # 6bd3e0 <object mutex>
48fa55:
            48 8d 3d 84 d9 22 00 lea
            e8 9f 05 b7 ff
                                 callq 0 <_nl_current_LC_CTYPE>
48fa5c:
48fa61:
            e8 2a e6 f7 ff
                                 callq 40e090 <abort>
            66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
48fa66:
            00 00 00
48fa6d:
                                      %ebx,%ebx
48fa70:
            31 db
                                 xor
48fa72:
            48 89 d8
                                mov
                                       %rbx,%rax
48fa75:
            5b
                                %rbx
                          pop
48fa76:
            5d
                                %rbp
                          pop
48fa77:
            41 5c
                                 pop
                                      %r12
```

```
48fa79:
             c3
                           retq
 48fa7a:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
 48fa80:
             48 8b 53 28
                                 mov
                                        0x28(%rbx),%rdx
 48fa84:
             48 89 10
                                        %rdx,(%rax)
                                 mov
 48fa87:
             e8 c4 09 f9 ff
                                 callg 420450 < free>
 48fa8c:
             eb 9a
                                       48fa28 < deregister frame info bases+0xa8>
                                 jmp
 48fa8e:
             66 90
                                 xchg %ax,%ax
 48fa90:
             48 89 c3
                                        %rax,%rbx
                                 mov
 48fa93:
             48 8d 05 7e d9 22 00 lea 0x22d97e(%rip),%rax
                                                                # 6bd418 <unseen objects>
                                       48fa21 < __deregister_frame_info_bases+0xa1>
 48fa9a:
             eb 85
                                 imp
             0f 1f 40 00
 48fa9c:
                                 nopl 0x0(\%rax)
00000000048faa0 < deregister frame info>:
 48faa0:
             e9 db fe ff ff
                                 impq 48f980 < __deregister_frame_info_bases>
 48faa5:
             90
                           nop
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48faa6:
 48faad:
             00 00 00
00000000048fab0 < deregister frame>:
                                        (%rdi),%eax
 48fab0:
             8b 07
                                 mov
 48fab2:
             85 c0
                                 test %eax,%eax
 48fab4:
             75 0a
                                 ine
                                      48fac0 < __deregister_frame+0x10>
 48fab6:
             f3 c3
                                 repz retq
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48fab8:
 48fabf:
             00
 48fac0:
             48 83 ec 08
                                 sub
                                       $0x8,%rsp
             e8 b7 fe ff ff
                                 callq 48f980 < deregister frame info bases>
 48fac4:
 48fac9:
             48 83 c4 08
                                 add
                                       $0x8,%rsp
 48facd:
             48 89 c7
                                        %rax,%rdi
                                 mov
                                 jmpq 420450 <__free>
 48fad0:
             e9 7b 09 f9 ff
 48fad5:
             90
                           nop
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48fad6:
 48fadd:
             00 00 00
00000000048fae0 < _Unwind_Find_FDE>:
 48fae0:
             41 57
                                 push %r15
             41 56
 48fae2:
                                 push %r14
 48fae4:
             49 89 ff
                                        %rdi,%r15
                                 mov
 48fae7:
             41 55
                                 push %r13
 48fae9:
             41 54
                                 push %r12
 48faeb:
             55
                                %rbp
                           push
 48faec:
             53
                           push %rbx
 48faed:
             48 89 f5
                                        %rsi,%rbp
                                 mov
 48faf0:
             48 83 ec 38
                                       $0x38,%rsp
                                 sub
 48faf4:
             8b 05 0e d9 22 00
                                 mov
                                        0x22d90e(%rip),%eax
                                                                 #6bd408
<any objects registered>
 48fafa:
             85 c0
                                 test %eax,%eax
             0f 85 7e 00 00 00
 48fafc:
                                 jne
                                       48fb80 < Unwind Find FDE+0xa0>
 48fb02:
             48 8d 3d e7 f7 ff ff
                                      -0x819(%rip),%rdi
                                 lea
                                                             # 48f2f0
<_Unwind_IteratePhdrCallback>
 48fb09:
             48 89 e6
                                        %rsp,%rsi
                                 mov
 48fb0c:
             4c 89 3c 24
                                        %r15,(%rsp)
                                 mov
```

```
48fb10:
            48 c7 44 24 08 00 00 movg $0x0,0x8(%rsp)
48fb17:
            00 00
48fb19:
            48 c7 44 24 10 00 00 movg $0x0,0x10(%rsp)
48fb20:
            00 00
48fb22:
            48 c7 44 24 18 00 00 movg $0x0,0x18(%rsp)
48fb29:
            00 00
48fb2b:
            48 c7 44 24 20 00 00 movg $0x0,0x20(%rsp)
            00 00
48fb32:
48fb34:
            c7 44 24 28 01 00 00 movl $0x1,0x28(%rsp)
48fb3b:
                                callq 490130 <__dl_iterate_phdr>
48fb3c:
            e8 ef 05 00 00
            85 c0
                                test %eax,%eax
48fb41:
48fb43:
            0f 88 89 01 00 00
                                     48fcd2 < Unwind Find FDE+0x1f2>
                                is
48fb49:
            4c 8b 74 24 20
                                      0x20(\%rsp),\%r14
                                mov
            4d 85 f6
                                test %r14,%r14
48fb4e:
            74 1b
                                     48fb6e < Unwind Find FDE+0x8e>
48fb51:
                                ie
48fb53:
            48 8b 44 24 08
                                mov
                                      0x8(%rsp),%rax
48fb58:
            48 89 45 00
                                      %rax,0x0(%rbp)
                                mov
48fb5c:
            48 8b 44 24 10
                                      0x10(\%rsp),\%rax
                                mov
48fb61:
            48 89 45 08
                                mov
                                      %rax,0x8(%rbp)
48fb65:
            48 8b 44 24 18
                                      0x18(%rsp), %rax
                                mov
48fb6a:
            48 89 45 10
                                mov
                                      %rax,0x10(%rbp)
48fb6e:
            48 83 c4 38
                                add
                                      $0x38,%rsp
            4c 89 f0
48fb72:
                                mov
                                      %r14,%rax
48fb75:
            5b
                               %rbx
                         pop
48fb76:
            5d
                               %rbp
                          pop
            41 5c
                                      %r12
48fb77:
                                pop
            41 5d
                                      %r13
48fb79:
                                pop
                                      %r14
48fb7b:
            41 5e
                                pop
48fb7d:
            41 5f
                                      %r15
                                pop
48fb7f:
            c3
                         retq
            49 c7 c4 00 00 00 00 mov
                                      $0x0,%r12
48fb80:
48fb87:
            4d 85 e4
                                test %r12,%r12
48fb8a:
            74.0c
                                     48fb98 < _Unwind_Find_FDE+0xb8>
                                je
            48 8d 3d 4d d8 22 00 lea
48fb8c:
                                     0x22d84d(%rip),%rdi
                                                              # 6bd3e0 < object mutex >
48fb93:
            e8 68 04 b7 ff
                                callq 0 < nl current LC CTYPE>
48fb98:
            48 8b 1d 71 d8 22 00 mov
                                      0x22d871(%rip),%rbx
                                                                # 6bd410 <seen_objects>
48fb9f:
            48 85 db
                                test %rbx.%rbx
            75 19
48fba2:
                                     48fbbd < Unwind Find FDE+0xdd>
            e9 9f 00 00 00
                                jmpq 48fc48 < Unwind_Find_FDE+0x168>
48fba4:
48fba9:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48fbb0:
            48 8b 5b 28
                                mov
                                      0x28(%rbx),%rbx
48fbb4:
            48 85 db
                                test %rbx,%rbx
            0f 84 8b 00 00 00
                                     48fc48 < Unwind_Find_FDE+0x168>
48fbb7:
                                je
48fbbd:
            4c 3b 3b
                                cmp
                                      (%rbx),%r15
                                     48fbb0 < Unwind Find FDE+0xd0>
48fbc0:
            72 ee
                                jb
48fbc2:
            4c 89 fe
                                      %r15,%rsi
                                mov
            48 89 df
                                      %rbx,%rdi
48fbc5:
                                mov
                                callq 48eb30 <search_object>
            e8 63 ef ff ff
48fbc8:
                                test %rax,%rax
48fbcd:
            48 85 c0
48fbd0:
            49 89 c6
                                      %rax,%r14
                                mov
            74 73
48fbd3:
                                je
                                     48fc48 < Unwind_Find_FDE+0x168>
```

```
48fbd5:
            4d 85 e4
                                test %r12.%r12
            74.0c
48fbd8:
                                     48fbe6 < Unwind Find FDE+0x106>
                                ie
48fbda:
            48 8d 3d ff d7 22 00
                                lea
                                     0x22d7ff(%rip),%rdi
                                                             # 6bd3e0 <object mutex>
48fbe1:
            e8 1a 04 b7 ff
                                callq 0 < nl current LC CTYPE>
48fbe6:
            48 8b 43 08
                                       0x8(%rbx),%rax
                                mov
48fbea:
            f6 43 20 04
                                testb $0x4,0x20(%rbx)
48fbee:
            48 89 45 00
                                mov
                                       %rax,0x0(%rbp)
48fbf2:
            48 8b 43 10
                                       0x10(%rbx),%rax
                                mov
48fbf6:
            48 89 45 08
                                       %rax,0x8(%rbp)
                                mov
                                     48fcbd < Unwind Find FDE+0x1dd>
48fbfa:
            0f 85 bd 00 00 00
                                movzwl 0x20(%rbx),%eax
48fc00:
            0f b7 43 20
48fc04:
            66 c1 e8 03
                                     $0x3.%ax
            0f b6 c0
48fc08:
                                movzbl %al.%eax
48fc0b:
            31 f6
                                xor
                                      %esi,%esi
                                $0xff,%al
48fc0d:
            3c ff
                          cmp
            4d 8d 6e 08
                                     0x8(%r14),%r13
48fc0f:
                                lea
48fc13:
            44 0f b6 e0
                                movzbl %al,%r12d
                                     48fc27 < Unwind Find FDE+0x147>
48fc17:
            74 0e
                                je
48fc19:
            48 89 de
                                       %rbx,%rsi
                                mov
48fc1c:
            44 89 e7
                                mov
                                       %r12d,%edi
                                callq 48e440 <base from object.part.4>
48fc1f:
            e8 1c e8 ff ff
48fc24:
            48 89 c6
                                mov
                                       %rax,%rsi
48fc27:
            48 89 e1
                                mov
                                       %rsp,%rcx
            4c 89 ea
                                       %r13,%rdx
48fc2a:
                                mov
48fc2d:
            44 89 e7
                                       %r12d,%edi
                                mov
48fc30:
            e8 3b e5 ff ff
                                callg 48e170 < read encoded value with base>
48fc35:
            48 8b 04 24
                                       (%rsp),%rax
                                mov
                                       %rax,0x10(%rbp)
48fc39:
            48 89 45 10
                                mov
48fc3d:
            e9 2c ff ff ff
                                jmpq 48fb6e <_Unwind_Find_FDE+0x8e>
48fc42:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
            4c 8d 2d c1 d7 22 00 lea 0x22d7c1(%rip),%r13
                                                              #6bd410 <seen objects>
48fc48:
48fc4f:
            90
                          nop
48fc50:
            48 8b 1d c1 d7 22 00 mov
                                       0x22d7c1(%rip),%rbx
                                                                #6bd418 < unseen objects >
48fc57:
            48 85 db
                                test %rbx,%rbx
            0f 84 80 00 00 00
                                     48fce0 < Unwind_Find_FDE+0x200>
48fc5a:
                                ie
48fc60:
            48 8b 43 28
                                mov
                                       0x28(%rbx),%rax
            4c 89 fe
                                       %r15,%rsi
48fc64:
                                mov
48fc67:
            48 89 df
                                       %rbx,%rdi
                                mov
48fc6a:
            48 89 05 a7 d7 22 00 mov
                                       %rax,0x22d7a7(%rip)
                                                                #6bd418 <unseen objects>
            e8 ba ee ff ff
                                callq 48eb30 <search_object>
48fc71:
48fc76:
            49 89 c6
                                       %rax,%r14
                                mov
48fc79:
            48 8b 05 90 d7 22 00 mov
                                       0x22d790(%rip),%rax
                                                                #6bd410 < seen objects >
48fc80:
            48 85 c0
                                test %rax,%rax
            74 33
                                     48fcb8 < Unwind_Find_FDE+0x1d8>
48fc83:
                                je
48fc85:
            48 8b 13
                                mov
                                       (%rbx),%rdx
48fc88:
            48 39 10
                                       %rdx,(%rax)
                                cmp
            73 08
                                     48fc95 < Unwind Find FDE+0x1b5>
48fc8b:
                                iae
            eb 29
                                      48fcb8 < Unwind Find FDE+0x1d8>
48fc8d:
                                jmp
            90
48fc8f:
                          nop
            48 39 10
48fc90:
                                       %rdx,(%rax)
                                cmp
48fc93:
            72 0d
                                     48fca2 < Unwind Find FDE+0x1c2>
                                jb
48fc95:
            48 8d 48 28
                                lea
                                     0x28(%rax),%rcx
```

```
48fc99:
             48 8b 40 28
                                 mov 0x28(%rax),%rax
 48fc9d:
             48 85 c0
                                 test %rax,%rax
 48fca0:
             75 ee
                                 ine
                                      48fc90 < Unwind Find FDE+0x1b0>
 48fca2:
             4d 85 f6
                                 test %r14.%r14
             48 89 43 28
                                 mov %rax,0x28(%rbx)
 48fca5:
 48fca9:
             48 89 19
                                       %rbx,(%rcx)
                                 mov
 48fcac:
             74 a2
                                      48fc50 < Unwind_Find_FDE+0x170>
                                 je
             e9 22 ff ff ff
                                 jmpq 48fbd5 < Unwind Find FDE+0xf5>
 48fcae:
 48fcb3:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
 48fcb8:
             4c 89 e9
                                 mov
                                       %r13,%rcx
                                       48fca2 < Unwind Find FDE+0x1c2>
 48fcbb:
             eb e5
                                 jmp
             49 63 46 04
                                 movslg 0x4(%r14),%rax
 48fcbd:
             49 8d 7e 04
                                 lea 0x4(%r14),%rdi
 48fcc1:
 48fcc5:
             48 29 c7
                                 sub
                                      %rax,%rdi
                                 callq 48e2b0 < get_cie_encoding>
 48fcc8:
             e8 e3 e5 ff ff
             e9 39 ff ff ff
                                 jmpg 48fc0b < Unwind Find FDE+0x12b>
 48fccd:
 48fcd2:
             45 31 f6
                                 xor %r14d,%r14d
 48fcd5:
             e9 94 fe ff ff
                                 jmpq 48fb6e <_Unwind_Find_FDE+0x8e>
                                 nopw 0x0(\%rax,\%rax,1)
 48fcda:
             66 0f 1f 44 00 00
 48fce0:
             4d 85 e4
                                 test %r12,%r12
 48fce3:
             0f 84 19 fe ff ff
                                      48fb02 <_Unwind_Find_FDE+0x22>
                                 je
 48fce9:
             48 8d 3d f0 d6 22 00 lea 0x22d6f0(%rip),%rdi
                                                              # 6bd3e0 <object_mutex>
 48fcf0:
             e8 0b 03 b7 ff
                                 calla 0 < nl current LC CTYPE>
             e9 08 fe ff ff
                                 jmpq 48fb02 <_Unwind_Find_FDE+0x22>
 48fcf5:
 48fcfa:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
00000000048fd00 <base of encoded value>:
             40 80 ff ff
 48fd00:
                                 cmp
                                       $0xff,%dil
             74 35
                                      48fd3b <base_of_encoded_value+0x3b>
 48fd04:
                                 je
 48fd06:
             83 e7 70
                                       $0x70,%edi
                                 and
 48fd09:
             40 80 ff 20
                                       $0x20,%dil
                                 cmp
             74 41
                                      48fd50 <base_of_encoded_value+0x50>
 48fd0d:
                                 ie
 48fd0f:
             76 1f
                                 ibe
                                      48fd30 <base of encoded value+0x30>
 48fd11:
             40 80 ff 40
                                       $0x40,%dil
                                 cmp
                                      48fd40 <base of encoded value+0x40>
 48fd15:
             74 29
                                 je
 48fd17:
             40 80 ff 50
                                 cmp
                                       $0x50,%dil
                                      48fd3b <base_of_encoded_value+0x3b>
             74 1e
 48fd1b:
                                 je
 48fd1d:
             40 80 ff 30
                                       $0x30,%dil
                                 cmp
 48fd21:
             75 35
                                 ine
                                      48fd58 <base of encoded value+0x58>
 48fd23:
             48 89 f7
                                       %rsi,%rdi
                                 mov
 48fd26:
             e9 c5 d8 ff ff
                                 jmpq 48d5f0 <_Unwind_GetDataRelBase>
 48fd2b:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
 48fd30:
             40 84 ff
                                 test %dil,%dil
             74 06
                                      48fd3b <base_of_encoded_value+0x3b>
 48fd33:
                                 je
 48fd35:
             40 80 ff 10
                                 cmp
                                       $0x10,%dil
 48fd39:
             75 1d
                                      48fd58 <base of encoded value+0x58>
                                 ine
 48fd3b:
             31 c0
                                      %eax,%eax
                                 xor
 48fd3d:
             с3
                          retq
             66 90
                                 xchg %ax,%ax
 48fd3e:
             48 89 f7
                                       %rsi,%rdi
 48fd40:
                                 mov
             e9 68 d8 ff ff
                                 impq 48d5b0 < Unwind GetRegionStart>
 48fd43:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48fd48:
```

```
48fd4f:
             00
             48 89 f7
 48fd50:
                                        %rsi,%rdi
                                  mov
 48fd53:
             e9 a8 d8 ff ff
                                  jmpq 48d600 < Unwind GetTextRelBase>
 48fd58:
             48 83 ec 08
                                       $0x8,%rsp
                                  sub
 48fd5c:
             e8 2f e3 f7 ff
                                  callq 40e090 <abort>
                                  nopl 0x0(\%rax,\%rax,1)
 48fd61:
             0f 1f 44 00 00
 48fd66:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 48fd6d:
             00 00 00
00000000048fd70 <read_encoded_value_with_base>:
             40 80 ff 50
                                        $0x50,%dil
 48fd70:
                                  cmp
 48fd74:
             49 89 ca
                                        %rcx,%r10
                                  mov
             74 57
 48fd77:
                                      48fdd0 < read encoded value with base+0x60>
                                  ie
 48fd79:
             89 f9
                                        %edi,%ecx
                                  mov
                                       $0xf,%ecx
 48fd7b:
             83 e1 0f
                                  and
 48fd7e:
             80 f9 0c
                                        $0xc,%cl
                                  cmp
 48fd81:
             0f 87 1c 01 00 00
                                  ia
                                       48fea3 <read_encoded_value_with_base+0x133>
 48fd87:
             4c 8d 05 aa be 01 00 lea
                                      0x1beaa(%rip),%r8
                                                              # 4abc38
< PRETTY FUNCTION .8641+0x5a8>
 48fd8e:
             0f b6 c9
                                  movzbl %cl,%ecx
 48fd91:
             49 63 04 88
                                  movslq (%r8,%rcx,4),%rax
 48fd95:
             4c 01 c0
                                  add
                                       %r8,%rax
 48fd98:
             ff e0
                           jmpg
                                  *%rax
             66 0f 1f 44 00 00
                                  nopw 0x0(\%rax,\%rax,1)
 48fd9a:
 48fda0:
             4c 8b 02
                                        (%rdx),%r8
                                  mov
 48fda3:
             48 8d 42 08
                                       0x8(%rdx),%rax
                                  lea
 48fda7:
             4d 85 c0
                                  test %r8.%r8
             74 17
 48fdaa:
                                      48fdc3 < read encoded value with base+0x53>
                                  ie
             89 f9
                                        %edi,%ecx
 48fdac:
                                  mov
 48fdae:
             83 e1 70
                                  and
                                       $0x70,%ecx
 48fdb1:
             80 f9 10
                                        $0x10,%cl
                                  cmp
             48 0f 44 f2
                                  cmove %rdx,%rsi
 48fdb4:
 48fdb8:
             49 01 f0
                                  add
                                       %rsi,%r8
 48fdbb:
             40 84 ff
                                  test %dil,%dil
             79 03
                                       48fdc3 < read encoded value with base+0x53>
 48fdbe:
                                  ins
 48fdc0:
             4d 8b 00
                                  mov
                                        (%r8),%r8
 48fdc3:
             4d 89 02
                                        %r8,(%r10)
                                  mov
 48fdc6:
             c3
                           retq
 48fdc7:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
             00 00
 48fdce:
 48fdd0:
             48 8d 42 07
                                       0x7(\%rdx),\%rax
                                  lea
 48fdd4:
             48 83 e0 f8
                                  and
                                       $0xffffffffffff8,%rax
 48fdd8:
             4c 8b 00
                                        (%rax),%r8
                                  mov
 48fddb:
             48 8d 40 08
                                       0x8(%rax),%rax
                                  lea
 48fddf:
             4d 89 02
                                  mov
                                        %r8,(%r10)
 48fde2:
             c3
                           retq
 48fde3:
             0f 1f 44 00 00
                                  nopl 0x0(\%rax,\%rax,1)
                                  movswq (%rdx),%r8
 48fde8:
             4c 0f bf 02
 48fdec:
                                  lea 0x2(%rdx),%rax
             48 8d 42 02
                                       48fda7 < read encoded value with base + 0x37 >
 48fdf0:
             eb b5
             66 0f 1f 44 00 00
                                  nopw 0x0(\%rax,\%rax,1)
 48fdf2:
             48 89 d0
                                        %rdx,%rax
 48fdf8:
                                  mov
```

```
48fdfb:
             45 31 c0
                                        %r8d,%r8d
                                  xor
 48fdfe:
             31 c9
                                        %ecx,%ecx
                                  xor
 48fe00:
             48 83 c0 01
                                  add
                                        $0x1,%rax
 48fe04:
             44 0f b6 58 ff
                                  movzbl -0x1(%rax),%r11d
 48fe09:
             4d 89 d9
                                         %r11,%r9
                                  mov
 48fe0c:
             41 83 e1 7f
                                       $0x7f,%r9d
                                  and
 48fe10:
             49 d3 e1
                                  shl
                                       %cl,%r9
                                       $0x7,%ecx
 48fe13:
             83 c1 07
                                  add
 48fe16:
             4d 09 c8
                                       %r9,%r8
                                  or
 48fe19:
             45 84 db
                                  test %r11b,%r11b
                                       48fe00 < read encoded value with base+0x90>
 48fe1c:
             78 e2
             eb 87
                                  imp 48fda7 < read encoded value with base + 0x37 >
 48fe1e:
 48fe20:
             44 0f b7 02
                                  movzwl (%rdx),%r8d
 48fe24:
             48 8d 42 02
                                  lea 0x2(\%rdx),\%rax
                                  jmpq 48fda7 <read_encoded_value_with_base+0x37>
 48fe28:
             e9 7a ff ff ff
 48fe2d:
             0f 1f 00
                                  nopl (%rax)
 48fe30:
             44 8b 02
                                  mov
                                        (%rdx),%r8d
 48fe33:
             48 8d 42 04
                                  lea 0x4(\%rdx),%rax
                                  impg 48fda7 < read encoded value with base+0x37>
 48fe37:
             e9 6b ff ff ff
 48fe3c:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
 48fe40:
             4c 63 02
                                  movslq (%rdx),%r8
 48fe43:
             48 8d 42 04
                                  lea 0x4(%rdx),%rax
 48fe47:
             e9 5b ff ff ff
                                  jmpq 48fda7 < read encoded value with base+0x37>
 48fe4c:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
 48fe50:
             48 89 d0
                                         %rdx,%rax
                                  mov
 48fe53:
             45 31 c0
                                        %r8d,%r8d
                                  xor
                                        %ecx,%ecx
 48fe56:
             31 c9
                                  xor
 48fe58:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 48fe5f:
             00
 48fe60:
             48 83 c0 01
                                  add
                                        $0x1,%rax
                                  movzbl -0x1(%rax),%r11d
 48fe64:
             44 0f b6 58 ff
             4d 89 d9
                                         %r11,%r9
 48fe69:
                                  mov
 48fe6c:
             41 83 e1 7f
                                  and
                                        $0x7f,%r9d
 48fe70:
             49 d3 e1
                                       %cl,%r9
                                  shl
                                       $0x7,%ecx
 48fe73:
             83 c1 07
                                  add
 48fe76:
             4d 09 c8
                                       %r9,%r8
                                  or
 48fe79:
             45 84 db
                                  test %r11b,%r11b
 48fe7c:
             78 e2
                                       48fe60 < read encoded value with base + 0xf0 >
                                  is
 48fe7e:
             83 f9 3f
                                  cmp
                                         $0x3f,%ecx
                                       48fda7 < read_encoded_value_with_base+0x37>
 48fe81:
             0f 87 20 ff ff ff
                                  ja
 48fe87:
             41 83 e3 40
                                  and $0x40,%r11d
 48fe8b:
             0f 84 16 ff ff ff
                                  ie
                                       48fda7 < read_encoded_value_with_base+0x37>
                                        $0xffffffffffffff,%r9
 48fe91:
             49 c7 c1 ff ff ff ff
                                  mov
                                       %cl,%r9
 48fe98:
             49 d3 e1
                                  shl
 48fe9b:
             4d 09 c8
                                       %r9,%r8
 48fe9e:
             e9 09 ff ff ff
                                  impg 48fdac < read encoded value with base + 0x3c >
                                  sub
 48fea3:
             48 83 ec 08
                                        $0x8,%rsp
                                  callq 40e090 <abort>
 48fea7:
             e8 e4 e1 f7 ff
 48feac:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
00000000048feb0 < __gcc_personality_v0>:
```

push %r15

48feb0:

41 57

```
48feb2:
            41 56
                                 push %r14
48feb4:
            b8 03 00 00 00
                                        $0x3,%eax
                                 mov
            41 55
48feb9:
                                 push
                                       %r13
48febb:
            41 54
                                 push %r12
48febd:
            55
                                %rbp
                          push
48febe:
            53
                          push
                                %rbx
48febf:
            48 83 ec 68
                                 sub
                                       $0x68,%rsp
48fec3:
            83 ff 01
                                       $0x1.%edi
                                 cmp
            c7 44 24 14 00 00 00 movl $0x0,0x14(%rsp)
48fec6:
48fecd:
            00
            74 10
48fece:
                                 je
                                      48fee0 < __gcc_personality_v0+0x30>
48fed0:
            48 83 c4 68
                                 add
                                       $0x68,%rsp
48fed4:
            5b
                                %rbx
                          pop
48fed5:
            5d
                                %rbp
                          pop
            41 5c
48fed6:
                                       %r12
                                 pop
            41 5d
                                       %r13
48fed8:
                                 pop
48feda:
            41 5e
                                       %r14
                                 pop
48fedc:
            41 5f
                                       %r15
                                 pop
48fede:
            c3
                          retq
48fedf:
            90
                          nop
48fee0:
            83 e6 02
                                       $0x2,%esi
                                 and
48fee3:
            75 1b
                                 ine
                                      48ff00 < gcc_personality_v0+0x50>
48fee5:
            48 83 c4 68
                                 add
                                       $0x68,%rsp
48fee9:
            b8 08 00 00 00
                                 mov
                                        $0x8,%eax
48feee:
            5b
                                %rbx
                          pop
48feef:
            5d
                                %rbp
                          pop
48fef0:
            41 5c
                                       %r12
                                 pop
            41 5d
                                       %r13
48fef2:
                                 pop
48fef4:
            41 5e
                                       %r14
                                 pop
48fef6:
            41 5f
                                       %r15
                                 pop
48fef8:
            c3
                          retq
48fef9:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
48ff00:
            4c 89 c7
                                 mov
                                       %r8,%rdi
48ff03:
            4c 89 c3
                                        %r8,%rbx
                                 mov
            4c 89 04 24
48ff06:
                                 mov
                                        %r8,(%rsp)
48ff0a:
            48 89 4c 24 08
                                 mov
                                        %rcx,0x8(%rsp)
48ff0f:
            e8 8c d6 ff ff
                                 callq 48d5a0 < Unwind_GetLanguageSpecificData>
48ff14:
            48 85 c0
                                 test %rax,%rax
                                       %rax,%r12
48ff17:
            49 89 c4
                                 mov
            74 c9
                                      48fee5 < __gcc_personality_v0+0x35>
48ff1a:
                                 je
48ff1c:
            31 c0
                                      %eax,%eax
                                 xor
48ff1e:
            48 85 db
                                 test %rbx,%rbx
48ff21:
            74 08
                                      48ff2b < __gcc_personality_v0+0x7b>
                                 je
            48 89 df
48ff23:
                                       %rbx,%rdi
                                 mov
48ff26:
            e8 85 d6 ff ff
                                 callq 48d5b0 <_Unwind_GetRegionStart>
48ff2b:
            48 89 44 24 30
                                       %rax,0x30(%rsp)
48ff30:
            41 0f b6 3c 24
                                 movzbl (%r12),%edi
48ff35:
            4d 8d 6c 24 01
                                      0x1(%r12),%r13
                                 lea
48ff3a:
            40 80 ff ff
                                 cmp
                                       $0xff,%dil
48ff3e:
            0f 85 5c 01 00 00
                                      4900a0 < __gcc_personality_v0+0x1f0>
                                 ine
48ff44:
            48 89 44 24 38
                                       %rax,0x38(%rsp)
                                 movzbl 0x0(%r13),%eax
48ff49:
            41 0f b6 45 00
```

```
48ff4e:
            49 8d 75 01
                                      0x1(%r13),%rsi
                                 lea
48ff52:
            3c ff
                                 $0xff,%al
                          cmp
48ff54:
            88 44 24 58
                                 mov
                                        %al,0x58(%rsp)
48ff58:
            0f 84 6d 01 00 00
                                      4900cb < gcc personality v0+0x21b>
                                 ie
                                %edi,%edi
48ff5e:
            31 ff
                          xor
                                 xor %ecx,%ecx
48ff60:
            31 c9
48ff62:
            66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
48ff68:
                                       $0x1.%rsi
            48 83 c6 01
                                 add
48ff6c:
            0f b6 56 ff
                                 movzbl -0x1(%rsi),%edx
48ff70:
            48 89 d0
                                        %rdx,%rax
                                 mov
48ff73:
            83 e0 7f
                                 and
                                       $0x7f,%eax
                                      %cl.%rax
48ff76:
            48 d3 e0
                                 shl
48ff79:
                                       $0x7,%ecx
            83 c1 07
                                 add
48ff7c:
            48 09 c7
                                      %rax,%rdi
                                 or
48ff7f:
            84 d2
                                 test %dl,%dl
48ff81:
            78 e5
                                      48ff68 < gcc personality v0+0xb8>
                                 is
48ff83:
            48 01 f7
                                 add
                                       %rsi,%rdi
48ff86:
            48 89 7c 24 48
                                        %rdi,0x48(%rsp)
                                 mov
48ff8b:
            0f b6 06
                                 movzbl (%rsi),%eax
48ff8e:
            48 8d 6e 01
                                 lea 0x1(%rsi),%rbp
48ff92:
            31 ff
                                %edi,%edi
                          xor
            31 c9
                                       %ecx,%ecx
48ff94:
                                 xor
48ff96:
            88 44 24 59
                                        %al.0x59(%rsp)
                                 mov
            66 0f 1f 44 00 00
48ff9a:
                                 nopw 0x0(\%rax,\%rax,1)
48ffa0:
            48 83 c5 01
                                 add
                                       $0x1,%rbp
                                 movzbl -0x1(%rbp),%esi
48ffa4:
            0f b6 75 ff
48ffa8:
            48 89 f0
                                        %rsi,%rax
                                 mov
                                       $0x7f,%eax
48ffab:
            83 e0 7f
                                 and
                                      %cl,%rax
48ffae:
            48 d3 e0
                                 shl
48ffb1:
            83 c1 07
                                 add
                                      $0x7,%ecx
48ffb4:
            48 09 c7
                                      %rax,%rdi
                                 or
48ffb7:
            40 84 f6
                                 test %sil,%sil
48ffba:
            78 e4
                                 js
                                      48ffa0 < __gcc_personality_v0+0xf0>
48ffbc:
            48 01 ef
                                 add
                                       %rbp,%rdi
48ffbf:
            48 8d 74 24 14
                                 lea
                                      0x14(%rsp),%rsi
48ffc4:
            48 89 7c 24 50
                                 mov
                                        %rdi,0x50(%rsp)
48ffc9:
            48 8b 3c 24
                                        (%rsp),%rdi
                                 mov
                                  callq 48d570 <_Unwind_GetIPInfo>
48ffcd:
            e8 9e d5 ff ff
48ffd2:
            49 89 c4
                                        %rax,%r12
                                  mov
            8b 44 24 14
                                        0x14(%rsp),%eax
48ffd5:
                                 mov
48ffd9:
            85 c0
                                 test %eax,%eax
48ffdb:
            75 04
                                 ine
                                       48ffe1 < __gcc_personality_v0+0x131>
48ffdd:
            49 83 ec 01
                                       $0x1,%r12
                                 sub
                                        %rbp,0x50(%rsp)
48ffe1:
            48 39 6c 24 50
                                 cmp
48ffe6:
            0f 86 f9 fe ff ff
                                 jbe
                                      48fee5 < __gcc_personality_v0+0x35>
48ffec:
            4c 8d 7c 24 18
                                 lea
                                      0x18(\%rsp),\%r15
48fff1:
            4c 8d 74 24 20
                                 lea
                                      0x20(\%rsp),\%r14
            4c 8d 6c 24 28
                                      0x28(%rsp),%r13
48fff6:
            0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
48fffb:
            0f b6 5c 24 59
490000:
                                 movzbl 0x59(%rsp),%ebx
490005:
                                       %esi,%esi
            31 f6
                                 xor
            89 df
490007:
                                 mov
                                        %ebx,%edi
```

```
490009:
            e8 f2 fc ff ff
                                callq 48fd00 <base of encoded value>
49000e:
            48 89 ea
                                       %rbp,%rdx
                                mov
490011:
            4c 89 f9
                                mov
                                       %r15,%rcx
490014:
            89 df
                                       %ebx.%edi
                                mov
490016:
            48 89 c6
                                       %rax,%rsi
                                mov
                                callq 48fd70 < read encoded value with base>
490019:
            e8 52 fd ff ff
49001e:
            0f b6 5c 24 59
                                movzbl 0x59(%rsp),%ebx
490023:
            48 89 c5
                                       %rax,%rbp
                                mov
490026:
            31 f6
                                      %esi,%esi
                                xor
490028:
            89 df
                                       %ebx,%edi
                                mov
            e8 d1 fc ff ff
                                callq 48fd00 <base of encoded value>
49002a:
49002f:
            48 89 ea
                                       %rbp,%rdx
                                mov
                                       %r14,%rcx
490032:
            4c 89 f1
                                mov
490035:
            89 df
                                       %ebx,%edi
                                mov
                                       %rax,%rsi
490037:
            48 89 c6
                                mov
            e8 31 fd ff ff
                                callq 48fd70 < read encoded value with base>
49003a:
49003f:
            0f b6 6c 24 59
                                movzbl 0x59(%rsp),%ebp
490044:
            48 89 c3
                                       %rax,%rbx
                                mov
490047:
            31 f6
                                      %esi,%esi
                                xor
490049:
            89 ef
                                mov
                                       %ebp,%edi
49004b:
            e8 b0 fc ff ff
                                callq 48fd00 <base of encoded value>
490050:
            89 ef
                                mov
                                       %ebp,%edi
490052:
            4c 89 e9
                                mov
                                       %r13.%rcx
            48 89 da
490055:
                                mov
                                       %rbx,%rdx
490058:
            48 89 c6
                                       %rax,%rsi
                                mov
49005b:
            e8 10 fd ff ff
                                 callg 48fd70 < read encoded value with base>
                                       %rax,%rbp
490060:
            48 89 c5
                                mov
                                nopl 0x0(\%rax,\%rax,1)
490063:
            0f 1f 44 00 00
            48 83 c5 01
                                      $0x1,%rbp
490068:
                                 add
49006c:
            80 7d ff 00
                                 cmpb $0x0,-0x1(\%rbp)
                                     490068 < gcc personality v0+0x1b8>
490070:
            78 f6
                                is
                                       0x18(%rsp),%rax
490072:
            48 8b 44 24 18
                                mov
490077:
            48 03 44 24 30
                                add
                                      0x30(%rsp),%rax
49007c:
            4c 39 e0
                                       %r12,%rax
                                cmp
            0f 87 60 fe ff ff
                                ja
                                     48fee5 < __gcc_personality_v0+0x35>
49007f:
490085:
            48 03 44 24 20
                                add 0x20(\%rsp),\%rax
            4c 39 e0
49008a:
                                       %r12,%rax
                                cmp
49008d:
            77 4a
                                     4900d9 < gcc personality v0+0x229>
                                ja
49008f:
            48 39 6c 24 50
                                cmp
                                       %rbp,0x50(%rsp)
            0f 87 66 ff ff ff
                                     490000 < __gcc_personality_v0+0x150>
490094:
49009a:
            e9 46 fe ff ff
                                jmpq 48fee5 <__gcc_personality_v0+0x35>
49009f:
            90
                          nop
4900a0:
            48 8b 34 24
                                       (%rsp),%rsi
                                mov
                                movzbl %dil,%r12d
4900a4:
            44 0f b6 e7
4900a8:
            44 89 e7
                                mov
                                       %r12d,%edi
4900ab:
            e8 50 fc ff ff
                                callq 48fd00 <base of encoded value>
4900b0:
            48 8d 4c 24 38
                                lea
                                     0x38(%rsp),%rcx
                                       %r13,%rdx
4900b5:
            4c 89 ea
                                mov
4900b8:
            48 89 c6
                                       %rax,%rsi
                                mov
            44 89 e7
4900bb:
                                       %r12d,%edi
                                mov
4900be:
            e8 ad fc ff ff
                                callg 48fd70 < read encoded value with base>
            49 89 c5
4900c3:
                                mov
                                       %rax,%r13
```

```
4900c6:
             e9 7e fe ff ff
                                 impq 48ff49 < gcc personality v0+0x99>
 4900cb:
             48 c7 44 24 48 00 00 movg $0x0,0x48(%rsp)
 4900d2:
             00 00
 4900d4:
             e9 b2 fe ff ff
                                 impg 48ff8b < gcc personality v0+0xdb>
 4900d9:
             48 8b 44 24 28
                                 mov
                                       0x28(%rsp),%rax
 4900de:
             48 85 c0
                                 test %rax,%rax
 4900e1:
             Of 84 fe fd ff ff
                                      48fee5 < __gcc_personality_v0+0x35>
                                 je
             48 03 44 24 38
                                       0x38(%rsp),%rax
 4900e7:
                                 add
 4900ec:
             49 89 c4
                                       %rax,%r12
                                 mov
 4900ef:
             0f 84 f0 fd ff ff
                                      48fee5 < __gcc_personality_v0+0x35>
                                 je
                                       (%rsp),%rbx
 4900f5:
             48 8b 1c 24
                                 mov
             48 8b 54 24 08
                                       0x8(\%rsp),\%rdx
 4900f9:
                                 mov
             31 f6
 4900fe:
                                       %esi,%esi
                                 xor
 490100:
             48 89 df
                                       %rbx,%rdi
             e8 18 d4 ff ff
 490103:
                                 callq 48d520 <_Unwind_SetGR>
                                       %edx,%edx
 490108:
             31 d2
                                 xor
 49010a:
             be 01 00 00 00
                                 mov
                                       $0x1,%esi
 49010f:
             48 89 df
                                       %rbx,%rdi
                                 mov
 490112:
             e8 09 d4 ff ff
                                 callg 48d520 < Unwind SetGR>
 490117:
             4c 89 e6
                                 mov
                                        %r12,%rsi
 49011a:
             48 89 df
                                       %rbx,%rdi
                                 mov
 49011d:
             e8 6e d4 ff ff
                                 callq 48d590 < Unwind_SetIP>
 490122:
             b8 07 00 00 00
                                 mov
                                       $0x7.%eax
             e9 a4 fd ff ff
                                 jmpq 48fed0 < __gcc_personality_v0+0x20>
 490127:
 49012c:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
000000000490130 < dl iterate phdr>:
                                 push %r15
 490130:
             41 57
                                 push %r14
 490132:
             41 56
 490134:
             41 55
                                       %r13
                                 push
 490136:
             41 54
                                       %r12
                                 push
             49 89 f4
 490138:
                                 mov
                                        %rsi,%r12
 49013b:
             55
                           push %rbp
 49013c:
             53
                           push %rbx
             48 89 fd
                                        %rdi,%rbp
 49013d:
                                 mov
 490140:
             48 83 ec 58
                                 sub
                                       $0x58,%rsp
             64 48 8b 04 25 28 00 mov
                                       %fs:0x28,%rax
 490144:
 49014b:
             00 00
 49014d:
             48 89 44 24 48
                                        %rax,0x48(%rsp)
                                 mov
                                       %eax,%eax
 490152:
             31 c0
                                 xor
             48 83 3d ac 9d 22 00 cmpq $0x0,0x229dac(%rip)
 490154:
                                                                 # 6b9f08 < .got+0x10>
 49015b:
             00
 49015c:
             74 0c
                                      49016a < dl iterate phdr+0x3a>
                                 je
 49015e:
             48 8d 3d 9b b0 22 00 lea
                                      0x22b09b(%rip),%rdi
                                                               #6bb200
<_dl_load_write_lock>
 490165:
             e8 96 fe b6 ff
                                 callq 0 < nl current LC CTYPE>
 49016a:
             4c 8b 35 6f b1 22 00 mov
                                        0x22b16f(%rip),%r14
                                                                 # 6bb2e0 < dl ns>
                                       0x22b171(%rip),%ebx
 490171:
             8b 1d 71 b1 22 00
                                 mov
                                                                 \# 6bb2e8 < dl ns + 0x8 >
             4d 85 f6
                                 test %r14,%r14
 490177:
             0f 84 90 00 00 00
                                      490210 < __dl_iterate_phdr+0xe0>
 49017a:
                                 ie
             49 89 e5
                                        %rsp,%r13
 490180:
                                 mov
 490183:
             eb 20
                                 jmp
                                       4901a5 < __dl_iterate_phdr+0x75>
```

```
490185:
             0f 1f 00
                                 nopl (%rax)
490188:
             4c 89 e2
                                       %r12,%rdx
                                 mov
49018b:
             be 40 00 00 00
                                 mov
                                       $0x40,%esi
490190:
             4c 89 ef
                                       %r13,%rdi
                                 mov
490193:
             ff d5
                          callq *%rbp
490195:
             85 c0
                                 test %eax,%eax
490197:
             41 89 c7
                                       %eax,%r15d
                                 mov
             75 77
                                      490213 < dl iterate phdr+0xe3>
49019a:
                                 ine
49019c:
             4d 8b 76 18
                                       0x18(%r14),%r14
                                 mov
4901a0:
             4d 85 f6
                                 test %r14,%r14
             74 6b
                                      490210 <__dl_iterate_phdr+0xe0>
4901a3:
                                 je
             49 8b 7e 28
                                 mov
                                       0x28(%r14),%rdi
4901a5:
             48 8b 07
                                       (%rdi),%rax
4901a9:
                                 mov
4901ac:
             48 89 04 24
                                       %rax,(%rsp)
                                 mov
4901b0:
             48 8b 47 08
                                       0x8(%rdi),%rax
                                 mov
             48 c7 44 24 38 00 00 movg $0x0,0x38(%rsp)
4901b4:
4901bb:
             00 00
4901bd:
             48 89 44 24 08
                                       %rax,0x8(%rsp)
                                 mov
4901c2:
             48 8b 87 a0 02 00 00 mov
                                       0x2a0(%rdi),%rax
4901c9:
             48 89 44 24 10
                                 mov
                                       %rax,0x10(%rsp)
4901ce:
             0f b7 87 b0 02 00 00 movzwl 0x2b0(%rdi),%eax
4901d5:
             66 89 44 24 18
                                 mov
                                       %ax,0x18(%rsp)
4901da:
             48 8b 05 9f b0 22 00 mov
                                       0x22b09f(%rip),%rax
                                                                #6bb280 < dl load adds>
                                       %rax,0x20(%rsp)
4901e1:
             48 89 44 24 20
                                 mov
                                      %rbx,%rax
4901e6:
             48 29 d8
                                 sub
4901e9:
             48 89 44 24 28
                                       %rax,0x28(%rsp)
                                 mov
             48 8b 87 48 04 00 00 mov
                                       0x448(%rdi),%rax
4901ee:
4901f5:
             48 85 c0
                                 test %rax,%rax
             48 89 44 24 30
                                       %rax,0x30(%rsp)
4901f8:
                                 mov
4901fd:
             74 89
                                      490188 <__dl_iterate_phdr+0x58>
                                 je
                                 callq 47fc70 < dl tls get addr soft>
4901ff:
             e8 6c fa fe ff
             48 89 44 24 38
                                       %rax,0x38(%rsp)
490204:
                                 mov
490209:
             e9 7a ff ff ff
                                 jmpq
                                       490188 <__dl_iterate_phdr+0x58>
49020e:
             66 90
                                       %ax,%ax
                                 xchg
                                      %r15d,%r15d
490210:
             45 31 ff
                                 xor
490213:
             48 83 3d 5d 9d 22 00 cmpg $0x0,0x229d5d(%rip)
                                                                 # 6b9f78 < .got+0x80>
49021a:
             00
             74 0c
49021b:
                                      490229 < dl iterate phdr+0xf9>
                                 ie
49021d:
             48 8d 3d dc af 22 00 lea
                                      0x22afdc(%rip),%rdi
                                                              #6bb200
<_dl_load_write_lock>
490224:
             e8 d7 fd b6 ff
                                 callq 0 <_nl_current_LC_CTYPE>
490229:
             48 8b 4c 24 48
                                 mov
                                       0x48(\%rsp),\%rcx
49022e:
             64 48 33 0c 25 28 00 xor
                                      %fs:0x28,%rcx
             00 00
490235:
490237:
             44 89 f8
                                 mov
                                       %r15d,%eax
49023a:
             75 Of
                                      49024b < dl iterate phdr+0x11b>
                                 ine
49023c:
             48 83 c4 58
                                 add
                                       $0x58,%rsp
                                %rbx
490240:
             5b
                          pop
490241:
             5d
                          pop
                                %rbp
             41 5c
490242:
                                       %r12
                                 pop
             41 5d
                                       %r13
490244:
                                 pop
490246:
             41 5e
                                 pop
                                       %r14
```

```
e8 d0 bf fb ff
 49024b:
                                 callq 44c220 < stack chk fail>
Disassembly of section __libc_freeres_fn:
0000000000490250 <free_mem>:
                          push %rbp
 490250:
             55
                          push %rbx
 490251:
             53
             48 8d 2d 07 2a 00 00 lea
 490252:
                                      0x2a07(%rip),%rbp
                                                             # 492c60
< nl default dirname>
 490259:
             48 83 ec 08
                                 sub
                                       $0x8,%rsp
 49025d:
             48 8b 1d 1c 16 23 00 mov
                                       0x23161c(%rip),%rbx
                                                                #6c1880
< nl domain bindings>
 490264:
             48 85 db
                                 test %rbx,%rbx
             74.3c
                                      4902a5 <free mem+0x55>
 490267:
                                 ie
 490269:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
 490270:
             48 8b 7b 08
                                 mov
                                       0x8(%rbx),%rdi
 490274:
             48 8b 03
                                       (%rbx),%rax
                                 mov
 490277:
             48 39 ef
                                       %rbp,%rdi
                                 cmp
 49027a:
             48 89 05 ff 15 23 00 mov
                                       %rax,0x2315ff(%rip)
                                                                #6c1880
<_nl_domain_bindings>
 490281:
             74 05
                                      490288 <free mem+0x38>
                                 callg 420450 < free>
 490283:
             e8 c8 01 f9 ff
 490288:
             48 8b 7b 10
                                 mov
                                       0x10(%rbx),%rdi
 49028c:
             e8 bf 01 f9 ff
                                 callq 420450 < free>
             48 89 df
                                       %rbx,%rdi
 490291:
                                 mov
 490294:
             e8 b7 01 f9 ff
                                 callq 420450 < free>
             48 8b 1d e0 15 23 00 mov
                                       0x2315e0(%rip),%rbx
 490299:
                                                                #6c1880
<_nl_domain_bindings>
                                 test %rbx,%rbx
 4902a0:
             48 85 db
                                      490270 <free mem+0x20>
 4902a3:
             75 cb
                                 jne
 4902a5:
             48 8b 3d dc 9e 22 00 mov
                                       0x229edc(%rip),%rdi
                                                                # 6ba188
<_nl_current_default_domain>
4902ac:
             48 8d 05 c5 29 00 00 lea 0x29c5(%rip),%rax
                                                             # 492c78
< nl default default domain>
 4902b3:
             48 39 c7
                                       %rax,%rdi
                                 cmp
 4902b6:
             74 05
                                 ie
                                      4902bd < free mem + 0x6d >
 4902b8:
             e8 93 01 f9 ff
                                 callg 420450 < free>
             48 8b 3d 84 c5 22 00 mov
                                       0x22c584(%rip),%rdi
 4902bd:
                                                                # 6bc848 <root>
 4902c4:
             48 c7 c6 50 04 42 00 mov
                                       $0x420450,%rsi
 4902cb:
             e8 10 b3 fb ff
                                 callq 44b5e0 < tdestroy>
                                       0x22c569(%rip),%rdi
 4902d0:
             48 8b 3d 69 c5 22 00 mov
                                                                # 6bc840 <transmem list>
             48 c7 05 66 c5 22 00 movg $0x0,0x22c566(%rip)
 4902d7:
                                                                 # 6bc848 <root>
 4902de:
             00 00 00 00
 4902e2:
             48 85 ff
                                 test %rdi.%rdi
                                      490307 <free mem+0xb7>
 4902e5:
             74 20
                                 ie
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
 4902e7:
             00 00
 4902ee:
             48 8b 1f
 4902f0:
                                        (%rdi),%rbx
                                 mov
             48 89 1d 46 c5 22 00 mov
                                        %rbx,0x22c546(%rip)
                                                                # 6bc840 <transmem list>
 4902f3:
                                 callq 420450 <__free>
 4902fa:
             e8 51 01 f9 ff
```

pop %r15

reta

490248:

49024a:

41 5f

с3

```
4902ff:
             48 85 db
                                 test %rbx,%rbx
             48 89 df
 490302:
                                       %rbx,%rdi
                                 mov
 490305:
             75 e9
                                 ine
                                      4902f0 <free mem+0xa0>
 490307:
             48 83 c4 08
                                 add
                                      $0x8,%rsp
 49030b:
                                %rbx
             5b
                          pop
 49030c:
             5d
                                %rbp
                          pop
 49030d:
             c3
                          retq
             66 90
                                 xchg %ax,%ax
 49030e:
000000000490310 < nl finddomain subfreeres>:
                          push %rbp
 490310:
             55
 490311:
             53
                          push %rbx
 490312:
             48 83 ec 08
                                 sub
                                      $0x8,%rsp
 490316:
             48 8b 1d bb c5 22 00 mov
                                       0x22c5bb(%rip),%rbx
                                                                #6bc8d8
<_nl_loaded_domains>
                                 test %rbx,%rbx
 49031d:
             48 85 db
 490320:
             75 09
                                 ine
                                      49032b <_nl_finddomain_subfreeres+0x1b>
 490322:
             eb 2e
                                       490352 < nl finddomain subfreeres+0x42>
                                 jmp
 490324:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
 490328:
             48 89 eb
                                 mov
                                       %rbp,%rbx
 49032b:
             48 8b 7b 10
                                       0x10(%rbx),%rdi
                                 mov
 49032f:
             48 85 ff
                                 test %rdi,%rdi
 490332:
             74 05
                                      490339 < nl finddomain subfreeres+0x29>
                                 ie
                                 callq 490360 < nl unload domain>
             e8 27 00 00 00
 490334:
                                       (%rbx),%rdi
 490339:
             48 8b 3b
                                 mov
 49033c:
             48 8b 6b 18
                                       0x18(%rbx),%rbp
                                 mov
 490340:
                                 callg 420450 < free>
             e8 0b 01 f9 ff
                                       %rbx,%rdi
 490345:
             48 89 df
                                 mov
             e8 03 01 f9 ff
                                 callq 420450 <__free>
 490348:
 49034d:
             48 85 ed
                                 test %rbp,%rbp
                                      490328 < nl finddomain subfreeres+0x18>
 490350:
             75 d6
                                 ine
             48 83 c4 08
 490352:
                                 add
                                      $0x8,%rsp
 490356:
             5b
                          pop
                                %rbx
 490357:
             5d
                                %rbp
                          pop
 490358:
             c3
                          retq
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
 490359:
000000000490360 < nl unload domain>:
 490360:
             41 55
                                 push %r13
 490362:
             41 54
                                 push %r12
 490364:
             48 8d 05 f5 6d 22 00 lea
                                      0x226df5(%rip),%rax
                                                              # 6b7160 < __fini_array_end>
 49036b:
             55
                          push %rbp
 49036c:
             53
                          push %rbx
             48 89 fd
                                       %rdi,%rbp
 49036d:
                                 mov
 490370:
             48 83 ec 08
                                 sub
                                      $0x8,%rsp
 490374:
             48 8b bf b8 00 00 00 mov
                                       0xb8(%rdi),%rdi
 49037b:
             48 39 c7
                                       %rax,%rdi
                                 cmp
             74 05
                                      490385 < nl unload domain+0x25>
 49037e:
             e8 3b 61 f7 ff
                                 callq 4064c0 < __gettext_free_exp>
 490380:
                                      %r12d,%r12d
 490385:
             45 31 e4
                                 xor
             45 31 ed
                                      %r13d,%r13d
 490388:
                                 xor
 49038b:
             48 83 7d 78 00
                                 cmpq $0x0,0x78(%rbp)
```

```
490390:
            74 44
                                     4903d6 < nl unload domain + 0x76 >
490392:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
490398:
            48 8b 5d 70
                                mov
                                      0x70(%rbp), %rbx
49039c:
            4c 01 e3
                                add
                                      %r12,%rbx
49039f:
            48 8b 3b
                                      (%rbx),%rdi
                                mov
                                callq 420450 < free>
4903a2:
            e8 a9 00 f9 ff
4903a7:
            48 8b 7b 10
                                mov
                                      0x10(%rbx),%rdi
4903ab:
            48 8d 47 ff
                                     -0x1(%rdi),%rax
                                lea
4903af:
            48 83 f8 fd
                                      $0xfffffffffffd,%rax
                                cmp
4903b3:
            0f 86 7f 00 00 00
                                ibe
                                     490438 < nl unload domain+0xd8>
            48 8b 7b 08
                                      0x8(%rbx),%rdi
4903b9:
                                mov
            48 83 ff ff
                                      $0xfffffffffffff.%rdi
4903bd:
                                cmp
4903c1:
            74 5d
                                     490420 < nl unload domain+0xc0>
                                callq 44ec50 < __gconv_close>
4903c3:
            e8 88 e8 fb ff
                                      $0x1,%r13
4903c8:
            49 83 c5 01
                                add
4903cc:
            49 83 c4 18
                                add
                                      $0x18,%r12
4903d0:
            4c 39 6d 78
                                cmp
                                      %r13,0x78(%rbp)
4903d4:
            77 c2
                                     490398 < nl unload domain+0x38>
                                ja
            48 8b 7d 70
                                      0x70(%rbp),%rdi
4903d6:
                                mov
4903da:
            e8 71 00 f9 ff
                                callq 420450 <__free>
4903df:
            48 83 3d d9 9b 22 00 cmpg $0x0,0x229bd9(%rip)
                                                                # 6b9fc0 < .got+0xc8>
4903e6:
            00
4903e7:
            74.0c
                                ie
                                     4903f5 < nl unload domain+0x95>
            48 8d bd 80 00 00 00 lea
                                     0x80(%rbp),%rdi
4903e9:
                                callq 0 <_nl_current_LC_CTYPE>
4903f0:
            e8 0b fc b6 ff
4903f5:
            48 8b 7d 20
                                mov
                                      0x20(%rbp),%rdi
4903f9:
            e8 52 00 f9 ff
                                callg 420450 < free>
            8b 45 08
                                      0x8(%rbp),%eax
4903fe:
                                mov
490401:
            85 c0
                                test %eax,%eax
490403:
            75 43
                                     490448 <_nl_unload_domain+0xe8>
                                jne
            48 8b 7d 00
490405:
                                      0x0(%rbp), %rdi
                                mov
            e8 42 00 f9 ff
                                callg 420450 < free>
490409:
49040e:
            48 83 c4 08
                                add
                                      $0x8,%rsp
490412:
            48 89 ef
                                      %rbp,%rdi
                                mov
490415:
            5b
                               %rbx
                         pop
490416:
            5d
                         pop
                               %rbp
            41 5c
                                      %r12
490417:
                                pop
490419:
            41 5d
                                      %r13
                                pop
                                jmpg 420450 < free>
49041b:
            e9 30 00 f9 ff
                                      $0x1,%r13
490420:
            49 83 c5 01
                                add
490424:
            49 83 c4 18
                                      $0x18,%r12
                                add
490428:
            4c 39 6d 78
                                      %r13,0x78(%rbp)
                                cmp
49042c:
            0f 87 66 ff ff ff
                                     490398 < nl unload domain+0x38>
                                ja
490432:
            eb a2
                                      4903d6 <_nl_unload_domain+0x76>
                                jmp
490434:
            0f 1f 40 00
                                nopl 0x0(\%rax)
                                callq 420450 < free>
490438:
            e8 13 00 f9 ff
                                jmpq 4903b9 <_nl_unload_domain+0x59>
49043d:
            e9 77 ff ff ff
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
490442:
            48 8b 75 10
                                       0x10(%rbp),%rsi
490448:
                                mov
            48 8b 7d 00
                                      0x0(%rbp),%rdi
49044c:
                                mov
490450:
            e8 0b a5 fb ff
                                callq 44a960 < munmap>
                                      49040e <_nl_unload_domain+0xae>
490455:
            eb b7
                                jmp
```

```
49045e:
             00 00
0000000000490460 <buffer_free>:
                           push %rbx
 490460:
             53
             48 8b 1d 08 c9 22 00 mov
 490461:
                                       0x22c908(%rip),%rbx
                                                                 #6bcd70 <freeres list>
 490468:
             c6 05 09 c9 22 00 01 movb $0x1,0x22c909(%rip)
                                                                 # 6bcd78 <dealloc_buffers>
             48 85 db
                                 test %rbx.%rbx
 49046f:
                                      490497 <buffer free+0x37>
 490472:
             74 23
                                 ie
 490474:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
             48 8b bb b0 00 00 00 mov
                                       0xb0(%rbx),%rdi
 490478:
             e8 cc ff f8 ff
                                 callg 420450 < free>
 49047f:
                                        0xa8(%rbx),%rbx
             48 8b 9b a8 00 00 00 mov
 490484:
 49048b:
             48 85 db
                                 test %rbx,%rbx
                                        %rbx,0x22c8db(%rip)
                                                                 # 6bcd70 <freeres_list>
 49048e:
             48 89 1d db c8 22 00 mov
             75 e1
                                      490478 <buffer free+0x18>
 490495:
                                 ine
 490497:
             5b
                                %rbx
                           pop
 490498:
             c3
                           retq
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
 490499:
00000000004904a0 < free derivation >:
                                 push %r13
 4904a0:
             41 55
 4904a2:
             41 54
                                 push
                                       %r12
             49 89 fd
 4904a4:
                                 mov
                                        %rdi,%r13
                          push %rbp
             55
 4904a7:
 4904a8:
             53
                           push %rbx
             48 83 ec 08
                                       $0x8,%rsp
 4904a9:
                                 sub
                                       0x18(%rdi),%rcx
 4904ad:
             48 8b 4f 18
                                 mov
                                        0x10(%rdi),%rdx
 4904b1:
             48 8b 57 10
                                 mov
 4904b5:
             48 85 c9
                                 test %rcx,%rcx
             74 53
                                      49050d <free derivation+0x6d>
 4904b8:
                                 ie
                                      %ebx,%ebx
 4904ba:
             31 db
                                 xor
 4904bc:
             45 31 e4
                                 xor
                                       %r12d,%r12d
 4904bf:
             90
                           nop
             48 8d 04 1a
 4904c0:
                                      (%rdx,%rbx,1),%rax
                                 lea
 4904c4:
             8b 70 10
                                 mov
                                       0x10(%rax),%esi
             85 f6
                                 test %esi,%esi
 4904c7:
                                      490500 <free derivation+0x60>
 4904c9:
             7e 35
                                 cmpq $0x0,(%rax)
 4904cb:
             48 83 38 00
                                      490500 <free_derivation+0x60>
 4904cf:
             74 2f
 4904d1:
             48 8b 68 40
                                 mov
                                       0x40(%rax),%rbp
 4904d5:
             48 c1 cd 11
                                      $0x11,%rbp
                                 ror
 4904d9:
             64 48 33 2c 25 30 00 xor
                                       %fs:0x30,%rbp
 4904e0:
             00 00
 4904e2:
             48 85 ed
                                 test %rbp,%rbp
                                      490500 <free derivation+0x60>
 4904e5:
             74 19
                                 je
 4904e7:
             48 89 ef
                                 mov
                                        %rbp,%rdi
                                 callq 44d7b0 <_dl_mcount_wrapper_check>
 4904ea:
             e8 c1 d2 fb ff
                                        0x10(%r13),%rdi
 4904ef:
             49 8b 7d 10
                                 mov
             48 01 df
 4904f3:
                                 add
                                       %rbx,%rdi
             ff d5
                           callq *%rbp
 4904f6:
```

66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)

490457:

4904f8:

49 8b 4d 18

mov

0x18(%r13),%rcx

```
4904fc:
             49 8b 55 10
                                        0x10(%r13),%rdx
                                 mov
 490500:
             49 83 c4 01
                                       $0x1,%r12
                                 add
 490504:
             48 83 c3 68
                                 add
                                       $0x68,%rbx
 490508:
             49 39 cc
                                       %rcx,%r12
                                 cmp
                                      4904c0 <free derivation+0x20>
 49050b:
             72 b3
                                 jb
 49050d:
             48 85 d2
                                 test %rdx,%rdx
 490510:
             74 2f
                                      490541 <free_derivation+0xa1>
                                 ie
             48 8b 7a 18
                                        0x18(%rdx),%rdi
 490512:
                                 mov
 490516:
             e8 35 ff f8 ff
                                 callg 420450 < free>
 49051b:
             49 8b 45 18
                                 mov
                                        0x18(%r13),%rax
             48 8d 14 40
                                      (%rax,%rax,2),%rdx
 49051f:
                                 lea
             48 8d 04 90
                                      (%rax,%rdx,4),%rax
 490523:
                                 lea
 490527:
             49 8b 55 10
                                        0x10(%r13),%rdx
                                 mov
 49052b:
             48 8d 04 c2
                                 lea
                                      (%rdx,%rax,8),%rax
 49052f:
             48 8b 78 b8
                                        -0x48(%rax),%rdi
                                 mov
             e8 18 ff f8 ff
                                 callq 420450 < free>
 490533:
 490538:
             49 8b 7d 10
                                 mov
                                        0x10(%r13),%rdi
 49053c:
             e8 0f ff f8 ff
                                 callq 420450 < free>
 490541:
             48 83 c4 08
                                 add
                                       $0x8,%rsp
 490545:
             4c 89 ef
                                 mov
                                        %r13,%rdi
 490548:
             5b
                                %rbx
                           pop
 490549:
             5d
                           pop
                                %rbp
 49054a:
             41.5c
                                       %r12
                                 pop
             41 5d
                                       %r13
 49054c:
                                 pop
                                 jmpq 420450 <__ free>
             e9 fd fe f8 ff
 49054e:
 490553:
             0f 1f 00
                                 nopl (%rax)
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 490556:
             00 00 00
 49055d:
000000000490560 <free_modules_db>:
             41 54
 490560:
                                 push %r12
                                %rbp
 490562:
             55
                           push
 490563:
             53
                           push
                                %rbx
 490564:
             48 8b 6f 20
                                        0x20(%rdi),%rbp
                                 mov
             48 89 fb
                                        %rdi,%rbx
 490568:
                                 mov
                                 test %rbp,%rbp
 49056b:
             48 85 ed
                                      4905b0 <free_modules_db+0x50>
 49056e:
             75 40
                                 ine
                                        0x30(%rbx),%rbp
 490570:
             48 8b 6b 30
                                 mov
 490574:
             48 85 ed
                                      %rbp,%rbp
                                 test
             74 Of
                                      490588 <free_modules_db+0x28>
 490577:
                                 ie
 490579:
             eb 75
                                       4905f0 < free modules db+0x90>
                                 jmp
 49057b:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
 490580:
             48 85 ed
                                 test %rbp,%rbp
                                        %rbp,%rbx
 490583:
             48 89 eb
                                 mov
 490586:
             74 1d
                                 je
                                      4905a5 <free_modules_db+0x45>
 490588:
             48 8b 43 18
                                        0x18(%rbx),%rax
                                 mov
 49058c:
             48 8b 6b 28
                                        0x28(%rbx),%rbp
                                 mov
             80 38 2f
                                 cmpb $0x2f,(%rax)
 490590:
             75 eb
                                      490580 <free_modules_db+0x20>
 490593:
                                 ine
             48 89 df
                                        %rbx,%rdi
 490595:
                                 mov
 490598:
             48 89 eb
                                        %rbp,%rbx
                                 mov
 49059b:
             e8 b0 fe f8 ff
                                 callq 420450 <__free>
```

```
4905a0:
            48 85 ed
                                test %rbp,%rbp
            75 e3
4905a3:
                                     490588 < free modules db+0x28>
                                ine
4905a5:
            5b
                               %rbx
                         pop
4905a6:
            5d
                               %rbp
                         pop
            41 5c
                                      %r12
4905a7:
                                pop
4905a9:
            c3
                         retq
4905aa:
            66 0f 1f 44 00 00
                                nopw 0x0(\%rax,\%rax,1)
            48 8b 7d 20
                                      0x20(%rbp),%rdi
4905b0:
                                mov
                                test %rdi,%rdi
4905b4:
            48 85 ff
                                    490630 <free_modules_db+0xd0>
4905b7:
            75 77
                                ine
            48 8b 7d 30
                                mov 0x30(%rbp),%rdi
4905b9:
            48 85 ff
                                test %rdi,%rdi
4905bd:
                                     4905d8 < free modules db+0x78>
4905c0:
            74 16
4905c2:
            e9 99 00 00 00
                                impg 490660 <free modules db+0x100>
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
4905c7:
            00 00
4905ce:
4905d0:
            4d 85 e4
                                test %r12,%r12
4905d3:
            4c 89 e5
                                      %r12,%rbp
                                mov
            74 98
4905d6:
                                     490570 < free modules db+0x10>
                                ie
4905d8:
            48 8b 45 18
                                mov
                                      0x18(%rbp),%rax
4905dc:
            4c 8b 65 28
                                      0x28(%rbp),%r12
                                mov
4905e0:
            80 38 2f
                                cmpb $0x2f,(%rax)
4905e3:
            75 eb
                                ine
                                     4905d0 <free modules db+0x70>
            48 89 ef
                                      %rbp,%rdi
4905e5:
                                mov
4905e8:
            e8 63 fe f8 ff
                                callq 420450 < free>
4905ed:
            eb e1
                                jmp
                                      4905d0 < free modules db+0x70>
            90
4905ef:
                         nop
4905f0:
            48 8b 7d 20
                                      0x20(%rbp),%rdi
                                mov
                                test %rdi,%rdi
4905f4:
            48 85 ff
4905f7:
            75 57
                                     490650 <free_modules_db+0xf0>
                                jne
            48 8b 7d 30
                                mov 0x30(%rbp),%rdi
4905f9:
            48 85 ff
                                test %rdi,%rdi
4905fd:
490600:
            74 12
                                je
                                     490614 <free_modules_db+0xb4>
490602:
            eb 3c
                                     490640 <free_modules_db+0xe0>
                                jmp
                                nopl 0x0(\%rax)
490604:
            0f 1f 40 00
490608:
            4d 85 e4
                                test %r12,%r12
                                      %r12,%rbp
49060b:
            4c 89 e5
                                mov
49060e:
            0f 84 74 ff ff ff
                                     490588 < free modules db+0x28>
                                ie
490614:
            48 8b 45 18
                                      0x18(%rbp),%rax
                                mov
                                      0x28(%rbp),%r12
490618:
            4c 8b 65 28
                                mov
49061c:
            80 38 2f
                                cmpb $0x2f,(%rax)
49061f:
            75 e7
                                ine
                                     490608 <free modules db+0xa8>
490621:
            48 89 ef
                                      %rbp,%rdi
                                mov
            e8 27 fe f8 ff
                                callq 420450 <__free>
490624:
490629:
            eb dd
                                jmp
                                      490608 <free_modules_db+0xa8>
49062b:
            0f 1f 44 00 00
                                nopl 0x0(\%rax,\%rax,1)
                                callq 490560 <free modules db>
490630:
            e8 2b ff ff ff
                                      4905b9 < free modules db+0x59>
490635:
            eb 82
                                jmp
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
490637:
49063e:
            00 00
            e8 1b ff ff ff
                                callq 490560 <free modules db>
490640:
                                      490614 <free_modules_db+0xb4>
490645:
            eb cd
                                jmp
```

```
490647:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
 49064e:
             00 00
 490650:
             e8 0b ff ff ff
                                 callq 490560 <free modules db>
 490655:
             eb a2
                                 imp 4905f9 <free modules db+0x99>
490657:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
 49065e:
             00 00
 490660:
             e8 fb fe ff ff
                                 callq 490560 <free_modules_db>
             e9 6e ff ff ff
                                 jmpq 4905d8 <free modules db+0x78>
 490665:
 49066a:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
0000000000490670 <free mem>:
                                 push %r13
 490670:
             41 55
             41 54
 490672:
                                 push %r12
 490674:
             55
                                %rbp
                          push
 490675:
             53
                                %rbx
                          push
 490676:
             48 83 ec 08
                                 sub
                                      $0x8,%rsp
 49067a:
             e8 51 03 00 00
                                 callq 4909d0 <_nl_locale_subfreeres>
 49067f:
                                 callq 490310 < nl finddomain subfreeres>
             e8 8c fc ff ff
             48 8b 3d 4d 13 23 00 mov 0x23134d(%rip),%rdi
490684:
                                                               # 6c19d8
<__gconv_alias_db>
 49068b:
             48 85 ff
                                 test %rdi,%rdi
             74.0c
 49068e:
                                 je
                                     49069c <free_mem+0x2c>
 490690:
             48 c7 c6 50 04 42 00 mov $0x420450,%rsi
             e8 44 af fb ff
                                 callq 44b5e0 < tdestroy>
 490697:
             48 8b 1d 25 13 23 00 mov
 49069c:
                                       0x231325(%rip),%rbx
                                                                #6c19c8
< gconv modules db>
 4906a3:
             48 85 db
                                 test %rbx,%rbx
 4906a6:
             74 7d
                                     490725 <free mem+0xb5>
             48 8b 6b 20
                                      0x20(%rbx),%rbp
 4906a8:
                                 mov
4906ac:
             48 85 ed
                                 test %rbp,%rbp
                                     490760 <free mem+0xf0>
 4906af:
             0f 85 ab 00 00 00
                                 ine
             48 8b 6b 30
                                 mov 0x30(\%rbx),\%rbp
 4906b5:
 4906b9:
             48 85 ed
                                 test %rbp,%rbp
 4906bc:
             74 52
                                     490710 <free_mem+0xa0>
                                 je
             4c 8b 65 20
                                 mov 0x20(%rbp),%r12
 4906be:
 4906c2:
             4d 85 e4
                                 test %r12.%r12
 4906c5:
             0f 85 dd 00 00 00
                                      4907a8 <free_mem+0x138>
                                 ine
 4906cb:
             4c 8b 65 30
                                       0x30(%rbp), %r12
                                 mov
 4906cf:
             4d 85 e4
                                 test %r12,%r12
             74 14
 4906d2:
                                     4906e8 <free_mem+0x78>
             e9 a7 01 00 00
                                 jmpq 490880 <free_mem+0x210>
 4906d4:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
 4906d9:
                                 test %r12,%r12
 4906e0:
             4d 85 e4
                                       %r12,%rbp
 4906e3:
             4c 89 e5
                                 mov
 4906e6:
             74 28
                                 je
                                     490710 <free_mem+0xa0>
 4906e8:
             48 8b 45 18
                                       0x18(%rbp),%rax
                                 mov
                                       0x28(%rbp),%r12
 4906ec:
             4c 8b 65 28
                                 mov
             80 38 2f
                                 cmpb $0x2f,(%rax)
 4906f0:
             75 eb
                                     4906e0 <free_mem+0x70>
 4906f3:
                                 jne
                                       %rbp,%rdi
 4906f5:
             48 89 ef
                                 mov
             e8 53 fd f8 ff
                                 callq 420450 < free>
 4906f8:
                                       4906e0 <free_mem+0x70>
 4906fd:
             eb e1
                                 jmp
```

```
4906ff:
             90
                          nop
490700:
             48 89 df
                                       %rbx,%rdi
                                 mov
490703:
             48 89 eb
                                 mov
                                       %rbp,%rbx
490706:
             e8 45 fd f8 ff
                                 callg 420450 < free>
                                 test %rbp,%rbp
49070b:
             48 85 ed
49070e:
             74 15
                                     490725 <free mem+0xb5>
                                 je
490710:
             48 8b 43 18
                                 mov
                                       0x18(%rbx),%rax
             48 8b 6b 28
                                       0x28(%rbx),%rbp
490714:
                                 mov
490718:
             80 38 2f
                                 cmpb $0x2f,(%rax)
49071b:
             74 e3
                                     490700 <free mem+0x90>
49071d:
             48 85 ed
                                 test %rbp,%rbp
             48 89 eb
                                       %rbp,%rbx
490720:
                                 mov
                                      490710 <free mem+0xa0>
490723:
             75 eb
                                 ine
490725:
             48 8b 3d ac c7 22 00 mov
                                       0x22c7ac(%rip),%rdi
                                                               #6bced8
<known_derivations>
                                 test %rdi,%rdi
49072c:
             48 85 ff
49072f:
             74 1f
                                     490750 <free mem+0xe0>
                                 ie
490731:
             48 83 c4 08
                                 add
                                      $0x8,%rsp
490735:
             48 8d 35 64 fd ff ff
                                      -0x29c(%rip),%rsi
                                                           # 4904a0 < free derivation >
                                 lea
49073c:
             5b
                                %rbx
                          pop
49073d:
             5d
                                %rbp
                          pop
49073e:
             41 5c
                                 pop
                                      %r12
490740:
             41 5d
                                      %r13
                                 pop
             e9 99 ae fb ff
                                 jmpq 44b5e0 <__tdestroy>
490742:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
490747:
49074e:
             00 00
             48 83 c4 08
                                      $0x8,%rsp
490750:
                                 add
490754:
             5b
                                %rbx
                          pop
490755:
             5d
                          pop
                                %rbp
490756:
             41 5c
                                      %r12
                                 pop
490758:
             41 5d
                                      %r13
                                 pop
49075a:
             с3
                          retq
49075b:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
490760:
             4c 8b 65 20
                                       0x20(%rbp),%r12
                                 mov
                                 test %r12,%r12
490764:
             4d 85 e4
490767:
             0f 85 cb 00 00 00
                                 ine
                                     490838 < free mem+0x1c8>
49076d:
             4c 8b 65 30
                                 mov 0x30(%rbp), %r12
                                 test %r12.%r12
490771:
             4d 85 e4
490774:
             74 16
                                     49078c <free mem+0x11c>
                                 ie
                                      4907f0 <free_mem+0x180>
490776:
             eb 78
                                 jmp
490778:
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
49077f:
             00
             4d 85 e4
490780:
                                 test %r12,%r12
                                       %r12,%rbp
490783:
             4c 89 e5
                                 mov
490786:
             0f 84 29 ff ff ff
                                 je
                                     4906b5 <free_mem+0x45>
49078c:
             48 8b 45 18
                                       0x18(%rbp),%rax
                                 mov
490790:
             4c 8b 65 28
                                       0x28(%rbp),%r12
                                 mov
             80 38 2f
                                 cmpb $0x2f,(%rax)
490794:
490797:
                                     490780 <free_mem+0x110>
             75 e7
                                 jne
490799:
             48 89 ef
                                       %rbp,%rdi
                                 mov
49079c:
             e8 af fc f8 ff
                                 callq 420450 < free>
                                       490780 <free_mem+0x110>
4907a1:
             eb dd
                                 jmp
```

```
4907a3:
            0f 1f 44 00 00
                                nopl 0x0(\%rax.\%rax.1)
4907a8:
            49 8b 7c 24 20
                                      0x20(%r12),%rdi
                                mov
4907ad:
            48 85 ff
                                test %rdi.%rdi
4907b0:
            0f 85 4c 01 00 00
                                     490902 <free mem+0x292>
                                ine
4907b6:
            49 8b 7c 24 30
                                mov 0x30(%r12),%rdi
4907bb:
            48 85 ff
                                test %rdi,%rdi
4907be:
            74 14
                                    4907d4 <free_mem+0x164>
                                ie
4907c0:
            e9 33 01 00 00
                                jmpg 4908f8 <free mem+0x288>
4907c5:
            0f 1f 00
                                nopl (%rax)
                                test %r13,%r13
4907c8:
            4d 85 ed
            4d 89 ec
                                      %r13,%r12
4907cb:
                                mov
            0f 84 f7 fe ff ff
                                    4906cb <free mem+0x5b>
4907ce:
                                ie
4907d4:
            49 8b 44 24 18
                                      0x18(%r12),%rax
                                mov
4907d9:
            4d 8b 6c 24 28
                                mov
                                      0x28(%r12),%r13
            80 38 2f
                                cmpb $0x2f,(%rax)
4907de:
            75 e5
                                    4907c8 <free mem+0x158>
4907e1:
                                ine
4907e3:
            4c 89 e7
                                mov
                                      %r12,%rdi
4907e6:
            e8 65 fc f8 ff
                                callg 420450 < free>
                                     4907c8 <free mem+0x158>
4907eb:
            eb db
                                imp
4907ed:
            0f 1f 00
                                nopl (%rax)
                                mov 0x20(%r12),%rdi
4907f0:
            49 8b 7c 24 20
                                test %rdi,%rdi
4907f5:
            48 85 ff
4907f8:
            0f 85 f0 00 00 00
                                ine
                                    4908ee <free mem+0x27e>
            49 8b 7c 24 30
                                mov 0x30(%r12),%rdi
4907fe:
                                test %rdi,%rdi
490803:
            48 85 ff
490806:
            74 14
                                    49081c <free mem+0x1ac>
                                impg 4908e4 <free mem+0x274>
            e9 d7 00 00 00
490808:
            0f 1f 00
                                nopl (%rax)
49080d:
                                test %r13,%r13
490810:
            4d 85 ed
                                      %r13,%r12
490813:
            4d 89 ec
                                mov
            0f 84 70 ff ff ff
                                    49078c <free mem+0x11c>
490816:
                                ie
            49 8b 44 24 18
                                      0x18(%r12),%rax
49081c:
                                mov
490821:
            4d 8b 6c 24 28
                                mov
                                      0x28(%r12),%r13
490826:
            80 38 2f
                                cmpb $0x2f,(%rax)
                                ine 490810 <free mem+0x1a0>
490829:
            75 e5
49082b:
            4c 89 e7
                                mov
                                      %r12,%rdi
49082e:
            e8 1d fc f8 ff
                                callq 420450 <__free>
                                      490810 <free mem+0x1a0>
490833:
            eb db
                                imp
490835:
            0f 1f 00
                                nopl (%rax)
            49 8b 7c 24 20
                                mov 0x20(%r12),%rdi
490838:
49083d:
            48 85 ff
                                test %rdi,%rdi
490840:
            0f 85 94 00 00 00
                                ine
                                     4908da <free mem+0x26a>
490846:
            49 8b 7c 24 30
                                      0x30(%r12),%rdi
                                mov
            48 85 ff
                                test %rdi,%rdi
49084b:
49084e:
            74 14
                                    490864 <free_mem+0x1f4>
                                jmpq 4908d3 <free_mem+0x263>
490850:
            e9 7e 00 00 00
490855:
            0f 1f 00
                                nopl (%rax)
                                test %r13,%r13
490858:
            4d 85 ed
            4d 89 ec
49085b:
                                mov
                                      %r13,%r12
            0f 84 09 ff ff ff
                                    49076d <free mem+0xfd>
49085e:
                                ie
            49 8b 44 24 18
                                      0x18(%r12),%rax
490864:
                                mov
490869:
            4d 8b 6c 24 28
                                mov
                                      0x28(%r12),%r13
```

```
49086e:
             80 38 2f
                                 cmpb $0x2f,(%rax)
 490871:
             75 e5
                                      490858 <free mem+0x1e8>
 490873:
             4c 89 e7
                                 mov
                                       %r12,%rdi
 490876:
             e8 d5 fb f8 ff
                                 calla 420450 < free>
 49087b:
             eb db
                                       490858 <free_mem+0x1e8>
                                 imp
 49087d:
             0f 1f 00
                                 nopl (%rax)
 490880:
             49 8b 7c 24 20
                                 mov
                                       0x20(%r12),%rdi
             48 85 ff
                                 test %rdi,%rdi
 490885:
             75 42
                                      4908cc <free_mem+0x25c>
 490888:
                                 ine
 49088a:
             49 8b 7c 24 30
                                 mov 0x30(%r12),%rdi
             48 85 ff
                                 test %rdi,%rdi
 49088f:
             74 18
                                      4908ac < free mem + 0x23c >
 490892:
                                 ie
 490894:
             eb 2f
                                       4908c5 < free mem+0x255>
                                 jmp
 490896:
             66 2e 0f 1f 84 00 00
                                 nopw %cs:0x0(%rax,%rax,1)
 49089d:
             00 00 00
                                 test %r13,%r13
 4908a0:
             4d 85 ed
 4908a3:
             4d 89 ec
                                 mov
                                       %r13,%r12
             Of 84 3c fe ff ff
                                      4906e8 <free mem+0x78>
 4908a6:
                                 ie
 4908ac:
             49 8b 44 24 18
                                       0x18(%r12),%rax
                                 mov
 4908b1:
             4d 8b 6c 24 28
                                 mov
                                       0x28(%r12),%r13
 4908b6:
             80 38 2f
                                 cmpb $0x2f,(%rax)
 4908Ъ9:
             75 e5
                                 ine
                                      4908a0 <free mem+0x230>
 4908bb:
             4c 89 e7
                                       %r12,%rdi
                                 mov
             e8 8d fb f8 ff
                                 callg 420450 < free>
 4908be:
                                       4908a0 <free_mem+0x230>
 4908c3:
             eb db
 4908c5:
             e8 96 fc ff ff
                                 callq 490560 <free modules db>
             eb e0
                                       4908ac <free mem+0x23c>
 4908ca:
             e8 8f fc ff ff
 4908cc:
                                 callq 490560 <free modules db>
                                       49088a <free_mem+0x21a>
 4908d1:
             eb b7
                                 imp
 4908d3:
             e8 88 fc ff ff
                                 callq 490560 <free_modules_db>
                                 jmp 490864 <free mem+0x1f4>
 4908d8:
             eb 8a
                                 callq 490560 <free_modules_db>
 4908da:
             e8 81 fc ff ff
 4908df:
             e9 62 ff ff ff
                                 jmpq 490846 <free_mem+0x1d6>
 4908e4:
             e8 77 fc ff ff
                                 callq 490560 <free_modules_db>
                                 jmpq 49081c <free_mem+0x1ac>
 4908e9:
             e9 2e ff ff ff
 4908ee:
             e8 6d fc ff ff
                                 callq 490560 <free modules db>
                                 jmpq 4907fe <free_mem+0x18e>
 4908f3:
             e9 06 ff ff ff
                                 calla 490560 <free modules db>
 4908f8:
             e8 63 fc ff ff
                                 impg 4907d4 <free mem+0x164>
 4908fd:
             e9 d2 fe ff ff
                                 callq 490560 <free_modules_db>
 490902:
             e8 59 fc ff ff
 490907:
             e9 aa fe ff ff
                                 jmpg 4907b6 <free mem+0x146>
 49090c:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
000000000490910 <free_mem>:
 490910:
             48 8b 3d d9 10 23 00 mov
                                       0x2310d9(%rip),%rdi
                                                                # 6c19f0
<__gconv_path_elem>
 490917:
             48 85 ff
                                 test %rdi,%rdi
             74 14
                                      490930 <free_mem+0x20>
 49091a:
                                 je
             48 8d 05 2d 67 00 00 lea
                                      0x672d(%rip),%rax
 49091c:
                                                             # 497050 <empty_path_elem>
             48 39 c7
                                       %rax,%rdi
 490923:
                                 cmp
 490926:
             74 08
                                      490930 <free mem+0x20>
                                 ie
                                 jmpq 420450 <__free>
 490928:
             e9 23 fb f8 ff
```

```
49092d:
             0f 1f 00
                                 nopl (%rax)
 490930:
             f3 c3
                                 repz reta
 490932:
             66 2e 0f 1f 84 00 00
                                 nopw %cs:0x0(%rax,%rax,1)
 490939:
             00 00 00
                                 nopl 0x0(\%rax)
 49093c:
             0f 1f 40 00
0000000000490940 <free_mem>:
             8b 05 a2 c5 22 00
 490940:
                                 mov
                                        0x22c5a2(%rip),%eax
                                                                 # 6bcee8 <cache malloced>
 490946:
             48 8b 3d ab c5 22 00 mov
                                        0x22c5ab(%rip),%rdi
                                                                 # 6bcef8 <gconv_cache>
 49094d:
             85 c0
                                 test %eax,%eax
             75 1f
                                      490970 <free_mem+0x30>
 49094f:
                                 ine
             48 85 ff
                                 test %rdi.%rdi
 490951:
 490954:
             74 12
                                      490968 <free mem+0x28>
                                 ie
 490956:
             48 8b 35 93 c5 22 00 mov
                                        0x22c593(%rip),%rsi
                                                                # 6bcef0 <cache size>
                                 jmpq 44a960 <__munmap>
 49095d:
             e9 fe 9f fb ff
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
 490962:
 490968:
             f3 c3
                                 repz retq
 49096a:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
                                       420450 < free>
 490970:
             e9 db fa f8 ff
                                 impa
 490975:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 49097c:
             00 00 00
 49097f:
             90
                           nop
0000000000490980 <do_release_all>:
 490980:
                           push %rbx
             53
 490981:
             48 89 fb
                                        %rdi,%rbx
                                 mov
             48 8b 7f 10
                                        0x10(%rdi),%rdi
 490984:
                                 mov
 490988:
             48 85 ff
                                 test %rdi.%rdi
             74 05
                                      490992 <do_release_all+0x12>
 49098b:
                                 ie
 49098d:
             e8 1e 17 ff ff
                                 callq 4820b0 <__libc_dlclose>
 490992:
             48 89 df
                                 mov
                                        %rbx,%rdi
 490995:
             5b
                                %rbx
                           pop
                                 jmpq 420450 <__free>
 490996:
             e9 b5 fa f8 ff
 49099b:
             0f 1f 44 00 00
                                 nopl 0x0(\%rax,\%rax,1)
00000000004909a0 <free mem>:
 4909a0:
             48 83 ec 08
                                 sub
                                       $0x8,%rsp
                                        0x22c55d(%rip),%rdi
                                                                 # 6bcf08 <loaded>
 4909a4:
             48 8b 3d 5d c5 22 00 mov
 4909ab:
             48 8d 35 ce ff ff ff
                                 lea
                                      -0x32(%rip),%rsi
                                                           # 490980 <do release all>
 4909b2:
             e8 29 ac fb ff
                                 callq 44b5e0 <__tdestroy>
 4909b7:
             48 c7 05 46 c5 22 00 movq $0x0,0x22c546(%rip)
                                                                 #6bcf08 <loaded>
 4909be:
             00 00 00 00
 4909c2:
             48 83 c4 08
                                 add
                                       $0x8,%rsp
 4909c6:
             c3
                           retq
 4909c7:
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
 4909ce:
             00 00
0000000004909d0 < nl locale subfreeres>:
 4909d0:
             41 55
                                 push %r13
             41 54
                                       %r12
 4909d2:
                                 push
             55
                           push %rbp
 4909d4:
 4909d5:
             53
                           push %rbx
```

```
48 8d 2d 1f 5f 00 00 lea 0x5f1f(%rip),%rbp
4909d6:
                                                            # 4968fc < nl C name>
4909dd:
             48 83 ec 08
                                 sub
                                       $0x8,%rsp
4909e1:
             48 83 3d 0f 95 22 00 cmpg $0x0,0x22950f(%rip)
                                                                 # 6b9ef8 < .got>
4909e8:
             00
4909e9:
             74 4d
                                      490a38 < nl locale subfreeres+0x68>
                                 ie
4909eb:
             48 c7 c0 80 8e 94 ff mov
                                       $0xfffffffff948e80,%rax
4909f2:
             49 c7 c5 20 8f 6b 00 mov
                                        $0x6b8f20,%r13
             48 8b 1d 18 10 23 00 mov
                                       0x231018(%rip),%rbx
                                                                 # 6c1a18
4909f9:
<_nl_locale file list+0x18>
                                       %fs:(%rax),%rax
490a00:
             64 48 8b 00
                                 mov
             4c 39 28
                                       %r13,(%rax)
490a04:
                                 cmp
490a07:
             74 1f
                                      490a28 < nl locale subfreeres+0x58>
                                 ie
             48 8b 3d 48 b1 22 00 mov
                                       0x22b148(%rip),%rdi
                                                                #6bbb58
490a09:
<_nl_global_locale+0x98>
490a10:
             4c 89 2d c1 b0 22 00 mov
                                       %r13,0x22b0c1(%rip)
                                                                 #6bbad8
< nl global locale+0x18>
490a17:
             48 39 ef
                                 cmp
                                       %rbp,%rdi
490a1a:
             74 0c
                                      490a28 <_nl_locale_subfreeres+0x58>
                                 je
                                 callq 420450 <__ free>
490a1c:
             e8 2f fa f8 ff
490a21:
             48 89 2d 30 b1 22 00 mov
                                       %rbp,0x22b130(%rip)
                                                                 #6bbb58
<_nl_global_locale+0x98>
490a28:
             48 85 db
                                 test %rbx,%rbx
490a2b:
             0f 85 c2 03 00 00
                                 ine
                                     490df3 < nl locale_subfreeres+0x423>
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
490a31:
             48 83 3d 18 95 22 00 cmpg $0x0,0x229518(%rip)
490a38:
                                                                 # 6b9f58 < .got+0x60>
490a3f:
             00
             74 5e
                                      490aa0 < nl locale subfreeres+0xd0>
490a40:
                                 ie
                                       $0xfffffffffffa0.%rax
490a42:
             48 c7 c0 a0 ff ff ff
                                 mov
                                        $0x6b7220,%r13
490a49:
             49 c7 c5 20 72 6b 00 mov
490a50:
             48 8b 1d a9 0f 23 00 mov
                                       0x230fa9(%rip),%rbx
                                                                #6c1a00
<_nl_locale_file_list>
             64 48 8b 00
                                       %fs:(%rax),%rax
490a57:
                                 mov
490a5b:
             4c 39 28
                                 cmp
                                       %r13,(%rax)
490a5e:
             74 2e
                                      490a8e <_nl_locale_subfreeres+0xbe>
                                 ie
             48 83 3d 08 95 22 00 cmpg $0x0,0x229508(%rip)
                                                                 # 6b9f70 < .got+0x78>
490a60:
490a67:
             4c 89 2d 51 b0 22 00 mov
                                       %r13,0x22b051(%rip)
                                                                 #6bbac0
490a68:
<_nl_global_locale>
490a6f:
             74 05
                                      490a76 < nl locale subfreeres+0xa6>
                                 callq 45ae50 <_nl_postload_ctype>
490a71:
             e8 da a3 fc ff
             48 8b 3d c3 b0 22 00 mov
                                       0x22b0c3(%rip),%rdi
490a76:
                                                                # 6bbb40
<_nl_global_locale+0x80>
             48 39 ef
490a7d:
                                       %rbp,%rdi
                                 cmp
             74.0c
                                      490a8e <_nl_locale_subfreeres+0xbe>
490a80:
                                 je
490a82:
             e8 c9 f9 f8 ff
                                 callq 420450 <__free>
490a87:
             48 89 2d b2 b0 22 00 mov
                                       %rbp,0x22b0b2(%rip)
                                                                 #6bbb40
<_nl_global_locale+0x80>
             48 85 db
                                 test %rbx,%rbx
490a8e:
490a91:
             0f 85 94 03 00 00
                                     490e2b <_nl_locale_subfreeres+0x45b>
                                 jne
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
490a97:
490a9e:
             00 00
             48 83 3d 20 95 22 00 cmpg $0x0,0x229520(%rip)
490aa0:
                                                                 # 6b9fc8 < .got+0xd0>
```

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490aa7:
             00
490aa8:
             74 46
                                      490af0 < nl locale subfreeres+0x120>
                                        $0xffffffffffb0,%rax
490aaa:
             48 c7 c0 b0 ff ff ff
                                 mov
490ab1:
             49 c7 c5 60 84 6b 00 mov
                                        $0x6b8460,%r13
490ab8:
             48 8b 1d 61 0f 23 00 mov
                                        0x230f61(%rip),%rbx
                                                                 # 6c1a20
< nl locale file list+0x20>
490abf:
             64 48 8b 00
                                 mov
                                        %fs:(%rax),%rax
490ac3:
             4c 39 28
                                       %r13,(%rax)
                                 cmp
                                      490ae7 <_nl_locale_subfreeres+0x117>
490ac6:
             74 1f
                                 je
                                       0x22b091(%rip),%rdi
490ac8:
             48 8b 3d 91 b0 22 00 mov
                                                                 # 6bbb60
<_nl_global_locale+0xa0>
             4c 89 2d 0a b0 22 00 mov
490acf:
                                        %r13,0x22b00a(%rip)
                                                                 # 6bbae0
< nl global locale+0x20>
490ad6:
             48 39 ef
                                       %rbp,%rdi
                                 cmp
             74 0c
                                      490ae7 <_nl_locale_subfreeres+0x117>
490ad9:
                                 je
             e8 70 f9 f8 ff
                                 callq 420450 < free>
490adb:
490ae0:
             48 89 2d 79 b0 22 00 mov
                                        %rbp,0x22b079(%rip)
                                                                 #6bbb60
<_nl_global_locale+0xa0>
490ae7:
             48 85 db
                                 test %rbx,%rbx
                                      490e63 <_nl_locale_subfreeres+0x493>
490aea:
             0f 85 73 03 00 00
                                 ine
490af0:
             48 83 3d 18 94 22 00 cmpg $0x0,0x229418(%rip)
                                                                 # 6b9f10 < .got+0x18>
490af7:
             00
490af8:
             74 46
                                      490b40 < nl locale subfreeres+0x170>
                                        $0xfffffffffffb8,%rax
             48 c7 c0 b8 ff ff ff
                                 mov
490afa:
                                        $0x6b8620,%r13
490b01:
             49 c7 c5 20 86 6b 00 mov
490b08:
             48 8b 1d f9 0e 23 00 mov
                                        0x230ef9(%rip),%rbx
                                                                 #6c1a08
< nl locale file list+0x8>
             64 48 8b 00
490b0f:
                                        %fs:(%rax),%rax
                                 mov
             4c 39 28
                                       %r13,(%rax)
490b13:
                                 cmp
490b16:
             74 1f
                                      490b37 <_nl_locale_subfreeres+0x167>
                                 je
                                       0x22b029(%rip),%rdi
                                                                 #6bbb48
490b18:
             48 8b 3d 29 b0 22 00 mov
<_nl_global_locale+0x88>
490b1f:
             4c 89 2d a2 af 22 00 mov
                                       %r13,0x22afa2(%rip)
                                                                #6bbac8
<_nl_global_locale+0x8>
490b26:
             48 39 ef
                                       %rbp,%rdi
                                 cmp
                                      490b37 < nl locale subfreeres+0x167>
490b29:
             74 0c
                                 ie
                                 callq 420450 <__ free>
490b2b:
             e8 20 f9 f8 ff
             48 89 2d 11 b0 22 00 mov
                                        %rbp,0x22b011(%rip)
490b30:
                                                                 #6bbb48
< nl global locale+0x88>
490b37:
                                 test %rbx,%rbx
             48 85 db
490b3a:
             0f 85 5b 03 00 00
                                      490e9b < nl locale subfreeres+0x4cb>
                                 jne
490b40:
             48 83 3d 48 94 22 00 cmpg $0x0,0x229448(%rip)
                                                                 # 6b9f90 < .got+0x98>
490b47:
             00
             74 46
                                      490b90 <_nl_locale_subfreeres+0x1c0>
490b48:
                                 je
             48 c7 c0 80 8e 94 ff mov
490b4a:
                                        $0xffffffffff948e80,%rax
             49 c7 c5 a0 86 6b 00 mov
                                        $0x6b86a0,%r13
490b51:
490b58:
             48 8b 1d b1 0e 23 00 mov
                                        0x230eb1(%rip),%rbx
                                                                 #6c1a10
<_nl_locale_file_list+0x10>
490b5f:
             64 48 8b 00
                                        %fs:(%rax),%rax
                                 mov
490b63:
             4c 39 28
                                       %r13,(%rax)
                                 cmp
490b66:
             74 1f
                                      490b87 < nl locale subfreeres+0x1b7>
                                 ie
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490b68:
             48 8b 3d e1 af 22 00 mov
                                       0x22afe1(%rip),%rdi
                                                                #6bbb50
< nl global locale+0x90>
                                                                #6bbad0
490b6f:
             4c 89 2d 5a af 22 00 mov
                                       %r13,0x22af5a(%rip)
< nl global locale+0x10>
490b76:
             48 39 ef
                                       %rbp,%rdi
                                 cmp
             74 0c
                                      490b87 < nl locale subfreeres+0x1b7>
490b79:
                                 je
490b7b:
             e8 d0 f8 f8 ff
                                 callq 420450 <__free>
             48 89 2d c9 af 22 00 mov
                                       %rbp,0x22afc9(%rip)
490b80:
                                                                #6bbb50
< nl global locale+0x90>
                                 test %rbx,%rbx
490b87:
             48 85 db
                                      490ed3 < nl locale subfreeres+0x503>
490b8a:
             0f 85 43 03 00 00
                                 ine
             48 83 3d 08 94 22 00 cmpg $0x0,0x229408(%rip)
490b90:
                                                                 # 6b9fa0 <.got+0xa8>
490b97:
             00
490b98:
             74 46
                                      490be0 < nl locale subfreeres+0x210>
                                 je
                                       $0xfffffffff948e80,%rax
490b9a:
             48 c7 c0 80 8e 94 ff
                                 mov
                                       $0x6b83e0,%r13
490ba1:
             49 c7 c5 e0 83 6b 00 mov
490ba8:
             48 8b 1d 79 0e 23 00 mov
                                       0x230e79(%rip),%rbx
                                                                 #6c1a28
< nl locale file list+0x28>
             64 48 8b 00
490baf:
                                       %fs:(%rax),%rax
                                 mov
490bb3:
             4c 39 28
                                 cmp
                                       %r13,(%rax)
490bb6:
             74 1f
                                      490bd7 <_nl_locale_subfreeres+0x207>
                                 je
490bb8:
             48 8b 3d a9 af 22 00 mov
                                       0x22afa9(%rip),%rdi
                                                                #6bbb68
< nl global locale+0xa8>
             4c 89 2d 22 af 22 00 mov
490bbf:
                                       %r13,0x22af22(%rip)
                                                                # 6bbae8
<_nl_global_locale+0x28>
490bc6:
             48 39 ef
                                 cmp
                                       %rbp,%rdi
                                     490bd7 < nl locale subfreeres+0x207>
490bc9:
             74.0c
                                 ie
                                 callq 420450 < free>
490bcb:
             e8 80 f8 f8 ff
             48 89 2d 91 af 22 00 mov
                                       %rbp,0x22af91(%rip)
490bd0:
                                                                #6bbb68
<_nl_global_locale+0xa8>
                                 test %rbx,%rbx
490bd7:
             48 85 db
490bda:
                                      490f0b <_nl_locale_subfreeres+0x53b>
             0f 85 2b 03 00 00
                                 ine
490be0:
             48 83 3d b0 93 22 00 cmpq $0x0,0x2293b0(%rip)
                                                                 # 6b9f98 < .got+0xa0>
490be7:
             00
             74 46
                                      490c30 < nl locale subfreeres+0x260>
490be8:
                                 je
490bea:
             48 c7 c0 80 8e 94 ff
                                mov
                                       $0xfffffffff948e80,%rax
490bf1:
             49 c7 c5 e0 8b 6b 00 mov
                                       $0x6b8be0,%r13
490bf8:
             48 8b 1d 39 0e 23 00 mov
                                       0x230e39(%rip),%rbx
                                                                 # 6c1a38
<_nl_locale_file_list+0x38>
490bff:
             64 48 8b 00
                                       %fs:(%rax),%rax
                                 mov
490c03:
             4c 39 28
                                       %r13,(%rax)
                                 cmp
490c06:
             74 1f
                                 ie
                                      490c27 < nl locale subfreeres+0x257>
                                       0x22af69(%rip),%rdi
490c08:
             48 8b 3d 69 af 22 00 mov
                                                                #6bbb78
<_nl_global_locale+0xb8>
490c0f:
             4c 89 2d e2 ae 22 00 mov
                                       %r13,0x22aee2(%rip)
                                                                #6bbaf8
< nl global locale+0x38>
490c16:
             48 39 ef
                                       %rbp,%rdi
                                 cmp
             74 0c
                                 je
                                      490c27 <_nl_locale_subfreeres+0x257>
490c19:
             e8 30 f8 f8 ff
                                 callq 420450 <__free>
490c1b:
                                       %rbp,0x22af51(%rip)
490c20:
             48 89 2d 51 af 22 00 mov
                                                                #6bbb78
< nl global locale+0xb8>
             48 85 db
490c27:
                                 test %rbx,%rbx
```

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490c2a:
             0f 85 13 03 00 00
                                 ine 490f43 < nl locale subfreeres+0x573>
490c30:
             48 83 3d 18 93 22 00 cmpg $0x0,0x229318(%rip)
                                                                 # 6b9f50 < .got+0x58>
490c37:
             00
490c38:
             74 46
                                      490c80 < nl locale subfreeres+0x2b0>
                                 ie
490c3a:
             48 c7 c0 80 8e 94 ff mov
                                       $0xfffffffff948e80,%rax
490c41:
             49 c7 c5 40 8c 6b 00 mov
                                       $0x6b8c40,%r13
490c48:
             48 8b 1d f1 0d 23 00 mov
                                       0x230df1(%rip),%rbx
                                                                #6c1a40
<_nl_locale_file_list+0x40>
             64 48 8b 00
                                       %fs:(%rax),%rax
490c4f:
                                 mov
490c53:
             4c 39 28
                                       %r13,(%rax)
                                 cmp
                                      490c77 < _nl_locale_subfreeres+0x2a7>
             74 1f
490c56:
                                 je
             48 8b 3d 21 af 22 00 mov
                                       0x22af21(%rip),%rdi
                                                                #6bbb80
490c58:
< nl global locale+0xc0>
490c5f:
             4c 89 2d 9a ae 22 00 mov
                                       %r13,0x22ae9a(%rip)
                                                                #6bbb00
<_nl_global_locale+0x40>
490c66:
             48 39 ef
                                       %rbp,%rdi
                                 cmp
490c69:
             74.0c
                                      490c77 <_nl_locale_subfreeres+0x2a7>
                                 ie
             e8 e0 f7 f8 ff
                                 callq 420450 < free>
490c6b:
490c70:
             48 89 2d 09 af 22 00 mov
                                       %rbp,0x22af09(%rip)
                                                                #6bbb80
<_nl_global_locale+0xc0>
490c77:
             48 85 db
                                 test %rbx,%rbx
                                     490f7b <_nl_locale_subfreeres+0x5ab>
490c7a:
             0f 85 fb 02 00 00
                                 ine
490c80:
             48 83 3d 48 93 22 00 cmpg $0x0,0x229348(%rip)
                                                                 # 6b9fd0 < .got+0xd8>
490c87:
             00
             74 46
                                      490cd0 < nl locale subfreeres+0x300>
490c88:
                                 ie
490c8a:
             48 c7 c0 80 8e 94 ff mov
                                       $0xfffffffff948e80,%rax
490c91:
             49 c7 c5 c0 8c 6b 00 mov
                                       $0x6b8cc0,%r13
490c98:
             48 8b 1d a9 0d 23 00 mov
                                       0x230da9(%rip),%rbx
                                                                 # 6c1a48
<_nl_locale_file_list+0x48>
490c9f:
             64 48 8b 00
                                       %fs:(%rax),%rax
                                 mov
             4c 39 28
                                       %r13,(%rax)
490ca3:
                                 cmp
             74 1f
                                     490cc7 <_nl_locale_subfreeres+0x2f7>
490ca6:
                                 je
490ca8:
             48 8b 3d d9 ae 22 00 mov
                                       0x22aed9(%rip),%rdi
                                                                #6bbb88
<_nl_global_locale+0xc8>
             4c 89 2d 52 ae 22 00 mov
                                       %r13,0x22ae52(%rip)
                                                                #6bbb08
490caf:
<_nl_global_locale+0x48>
490cb6:
             48 39 ef
                                       %rbp,%rdi
                                 cmp
                                      490cc7 < nl locale subfreeres+0x2f7>
490cb9:
             74 0c
                                 ie
                                 callg 420450 < free>
490cbb:
             e8 90 f7 f8 ff
                                       %rbp,0x22aec1(%rip)
490cc0:
             48 89 2d c1 ae 22 00 mov
                                                                #6bbb88
<_nl_global_locale+0xc8>
490cc7:
             48 85 db
                                 test %rbx,%rbx
490cca:
             0f 85 e3 02 00 00
                                      490fb3 < nl locale subfreeres+0x5e3>
                                 ine
             48 83 3d 60 92 22 00 cmpg $0x0,0x229260(%rip)
490cd0:
                                                                 # 6b9f38 < .got+0x40>
490cd7:
             00
490cd8:
             74 46
                                      490d20 < nl locale subfreeres+0x350>
                                 ie
                                       $0xfffffffff948e80,%rax
490cda:
             48 c7 c0 80 8e 94 ff
                                 mov
             49 c7 c5 80 8d 6b 00 mov
                                       $0x6b8d80,%r13
490ce1:
                                       0x230d61(%rip),%rbx
490ce8:
             48 8b 1d 61 0d 23 00 mov
                                                                 #6c1a50
< nl locale file list+0x50>
490cef:
             64 48 8b 00
                                       %fs:(%rax),%rax
                                 mov
490cf3:
             4c 39 28
                                       %r13,(%rax)
                                 cmp
```

```
490cf6:
             74 1f
                                     490d17 < nl locale subfreeres+0x347>
490cf8:
             48 8b 3d 91 ae 22 00 mov
                                       0x22ae91(%rip),%rdi
                                                                #6bbb90
<_nl_global_locale+0xd0>
490cff:
             4c 89 2d 0a ae 22 00 mov
                                       %r13,0x22ae0a(%rip)
                                                                #6bbb10
< nl global locale+0x50>
490d06:
             48 39 ef
                                       %rbp,%rdi
                                 cmp
490d09:
             74.0c
                                 je
                                     490d17 <_nl_locale_subfreeres+0x347>
                                 callq 420450 < free>
             e8 40 f7 f8 ff
490d0b:
490d10:
                                       %rbp,0x22ae79(%rip)
             48 89 2d 79 ae 22 00 mov
                                                                #6bbb90
<_nl_global_locale+0xd0>
490d17:
                                 test %rbx,%rbx
             48 85 db
490d1a:
             0f 85 cb 02 00 00
                                      490feb < nl locale subfreeres+0x61b>
                                 ine
             48 83 3d 88 92 22 00 cmpg $0x0,0x229288(%rip)
490d20:
                                                                # 6b9fb0 < .got+0xb8>
490d27:
             00
             74 46
                                     490d70 <_nl_locale_subfreeres+0x3a0>
490d28:
             48 c7 c0 80 8e 94 ff mov
                                       $0xfffffffff948e80,%rax
490d2a:
490d31:
             49 c7 c5 00 8e 6b 00 mov
                                       $0x6b8e00,%r13
                                                                # 6c1a58
490d38:
             48 8b 1d 19 0d 23 00 mov
                                       0x230d19(%rip),%rbx
< nl locale file list+0x58>
490d3f:
             64 48 8b 00
                                 mov
                                       %fs:(%rax),%rax
490d43:
             4c 39 28
                                       %r13,(%rax)
                                 cmp
                                     490d67 <_nl_locale_subfreeres+0x397>
490d46:
             74 1f
                                 je
490d48:
             48 8b 3d 49 ae 22 00 mov
                                       0x22ae49(%rip),%rdi
                                                                #6bbb98
< nl global locale+0xd8>
490d4f:
             4c 89 2d c2 ad 22 00 mov
                                       %r13,0x22adc2(%rip)
                                                                #6bbb18
< nl global locale+0x58>
490d56:
             48 39 ef
                                       %rbp,%rdi
                                 cmp
490d59:
             74 0c
                                     490d67 < nl locale subfreeres+0x397>
                                 je
                                 callq 420450 <__ free>
490d5b:
             e8 f0 f6 f8 ff
490d60:
             48 89 2d 31 ae 22 00 mov
                                       %rbp,0x22ae31(%rip)
                                                                #6bbb98
< nl global locale+0xd8>
490d67:
            48 85 db
                                 test %rbx,%rbx
490d6a:
             0f 85 b3 02 00 00
                                 ine
                                     491023 <_nl_locale_subfreeres+0x653>
490d70:
             48 83 3d a8 91 22 00 cmpg $0x0,0x2291a8(%rip)
                                                                # 6b9f20 < .got+0x28>
490d77:
             00
             74 46
490d78:
                                     490dc0 < nl locale subfreeres+0x3f0>
             48 c7 c0 80 8e 94 ff mov
                                       $0xfffffffff948e80,%rax
490d7a:
490d81:
             49 c7 c5 60 8e 6b 00 mov
                                       $0x6b8e60,%r13
490d88:
             48 8b 1d d1 0c 23 00 mov
                                       0x230cd1(%rip),%rbx
                                                                #6c1a60
<_nl_locale_file_list+0x60>
490d8f:
             64 48 8b 00
                                       %fs:(%rax),%rax
                                 mov
490d93:
             4c 39 28
                                 cmp
                                       %r13,(%rax)
                                     490db7 < nl locale subfreeres+0x3e7>
490d96:
             74 1f
                                 je
490d98:
             48 8b 3d 01 ae 22 00 mov
                                       0x22ae01(%rip),%rdi
                                                                #6bbba0
<_nl_global_locale+0xe0>
             4c 89 2d 7a ad 22 00 mov
490d9f:
                                       %r13,0x22ad7a(%rip)
                                                                #6bbb20
<_nl_global_locale+0x60>
             48 39 ef
                                       %rbp,%rdi
490da6:
                                 cmp
490da9:
             74 0c
                                     490db7 <_nl_locale_subfreeres+0x3e7>
                                 je
                                 callg 420450 < free>
490dab:
             e8 a0 f6 f8 ff
             48 89 2d e9 ad 22 00 mov
                                       %rbp,0x22ade9(%rip)
                                                                #6bbba0
490db0:
<_nl_global_locale+0xe0>
```

```
490db7:
             48 85 db
                                  test %rbx,%rbx
490dba:
             0f 85 9b 02 00 00
                                       49105b < nl locale subfreeres+0x68b>
                                  ine
490dc0:
             48 8b 3d a9 ad 22 00 mov
                                        0x22ada9(%rip),%rdi
                                                                 #6bbb70
< nl global locale+0xb0>
490dc7:
             48 39 ef
                                        %rbp,%rdi
                                  cmp
             74.0c
                                      490dd8 < nl locale subfreeres+0x408>
490dca:
                                 je
490dcc:
             e8 7f f6 f8 ff
                                  callq 420450 <__free>
             48 89 2d 98 ad 22 00 mov
                                        %rbp,0x22ad98(%rip)
                                                                  #6bbb70
490dd1:
< nl global locale+0xb0>
                                       $0x8,%rsp
490dd8:
             48 83 c4 08
                                  add
490ddc:
             5b
                           pop
                                 %rbx
490ddd:
             5d
                           pop
                                 %rbp
             41 5c
490dde:
                                       %r12
                                  pop
490de0:
             41 5d
                                       %r13
                                  pop
             e9 a9 02 00 00
490de2:
                                  jmpq 491090 <_nl_archive_subfreeres>
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
490de7:
490dee:
             00 00
                                  mov
490df0:
             4c 89 e3
                                        %r12,%rbx
                                        0x10(%rbx),%rdi
490df3:
             48 8b 7b 10
                                  mov
490df7:
             48 85 ff
                                  test %rdi,%rdi
490dfa:
             74 0a
                                      490e06 < nl locale subfreeres+0x436>
                                  ie
490dfc:
             4c 39 ef
                                  cmp
                                        %r13,%rdi
490dff:
             74 05
                                      490e06 <_nl_locale_subfreeres+0x436>
                                  ie
                                  callq 45a8d0 < nl unload locale>
490e01:
             e8 ca 9a fc ff
                                        (%rbx),%rdi
490e06:
             48 8b 3b
                                  mov
490e09:
             4c 8b 63 18
                                        0x18(\%rbx),\%r12
                                  mov
             e8 3e f6 f8 ff
                                  callg 420450 < free>
490e0d:
                                        %rbx,%rdi
             48 89 df
490e12:
                                  mov
             e8 36 f6 f8 ff
490e15:
                                  callq 420450 <__free>
490e1a:
             4d 85 e4
                                  test %r12,%r12
                                       490df0 < nl locale subfreeres+0x420>
490e1d:
             75 d1
                                  ine
             e9 14 fc ff ff
                                 impg 490a38 <_nl_locale_subfreeres+0x68>
490e1f:
490e24:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
490e28:
             4c 89 e3
                                        %r12,%rbx
                                  mov
             48 8b 7b 10
                                        0x10(%rbx),%rdi
490e2b:
                                  mov
490e2f:
             48 85 ff
                                  test %rdi,%rdi
490e32:
             74 0a
                                      490e3e <_nl_locale_subfreeres+0x46e>
                                  je
490e34:
             4c 39 ef
                                        %r13,%rdi
                                  cmp
490e37:
             74 05
                                      490e3e < nl locale subfreeres+0x46e>
             e8 92 9a fc ff
                                  callq 45a8d0 <_nl_unload_locale>
490e39:
490e3e:
             48 8b 3b
                                        (%rbx),%rdi
                                  mov
490e41:
             4c 8b 63 18
                                  mov
                                        0x18(\%rbx),\%r12
490e45:
             e8 06 f6 f8 ff
                                  callq 420450 < free>
490e4a:
             48 89 df
                                  mov
                                        %rbx,%rdi
490e4d:
             e8 fe f5 f8 ff
                                  callq 420450 <__free>
                                  test %r12.%r12
490e52:
             4d 85 e4
                                       490e28 <_nl_locale_subfreeres+0x458>
490e55:
             75 d1
                                  ine
             e9 44 fc ff ff
                                  jmpq 490aa0 <_nl_locale_subfreeres+0xd0>
490e57:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
490e5c:
             4c 89 e3
                                        %r12,%rbx
490e60:
                                  mov
490e63:
             48 8b 7b 10
                                        0x10(%rbx),%rdi
                                  mov
             48 85 ff
                                  test %rdi,%rdi
490e67:
```

```
490e6a:
            74 0a
                                      490e76 < nl locale subfreeres+0x4a6>
            4c 39 ef
490e6c:
                                        %r13,%rdi
                                 cmp
490e6f:
            74 05
                                      490e76 < nl locale subfreeres+0x4a6>
490e71:
            e8 5a 9a fc ff
                                 callq 45a8d0 < nl unload locale>
490e76:
            48 8b 3b
                                        (%rbx),%rdi
                                 mov
490e79:
            4c 8b 63 18
                                        0x18(\%rbx),\%r12
                                 mov
490e7d:
            e8 ce f5 f8 ff
                                 callq 420450 <__free>
            48 89 df
                                        %rbx,%rdi
490e82:
                                 mov
490e85:
            e8 c6 f5 f8 ff
                                 callq 420450 <__free>
                                 test %r12,%r12
490e8a:
            4d 85 e4
                                      490e60 < nl locale subfreeres+0x490>
490e8d:
            75 d1
                                 ine
            e9 5c fc ff ff
                                 impg 490af0 < nl locale subfreeres+0x120>
490e8f:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
490e94:
490e98:
            4c 89 e3
                                        %r12,%rbx
                                 mov
                                        0x10(%rbx),%rdi
490e9b:
            48 8b 7b 10
                                 mov
                                 test %rdi,%rdi
490e9f:
            48 85 ff
490ea2:
            74 0a
                                      490eae <_nl_locale_subfreeres+0x4de>
                                 je
            4c 39 ef
                                        %r13,%rdi
490ea4:
                                 cmp
490ea7:
            74 05
                                      490eae < nl locale subfreeres+0x4de>
                                 ie
490ea9:
            e8 22 9a fc ff
                                 callq 45a8d0 < nl unload locale>
490eae:
            48 8b 3b
                                        (%rbx),%rdi
                                 mov
490eb1:
            4c 8b 63 18
                                 mov
                                        0x18(\%rbx),\%r12
490eb5:
            e8 96 f5 f8 ff
                                 calla 420450 < free>
            48 89 df
                                        %rbx.%rdi
490eba:
                                 mov
                                 callq 420450 <__ free>
490ebd:
            e8 8e f5 f8 ff
490ec2:
            4d 85 e4
                                 test %r12,%r12
                                      490e98 < nl locale subfreeres+0x4c8>
490ec5:
            75 d1
            e9 74 fc ff ff
                                 jmpg 490b40 < nl locale subfreeres+0x170>
490ec7:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
490ecc:
490ed0:
            4c 89 e3
                                        %r12,%rbx
                                 mov
490ed3:
            48 8b 7b 10
                                        0x10(%rbx),%rdi
                                 mov
            48 85 ff
                                 test %rdi,%rdi
490ed7:
490eda:
            74 0a
                                      490ee6 <_nl_locale_subfreeres+0x516>
                                 je
490edc:
            4c 39 ef
                                        %r13,%rdi
                                 cmp
                                      490ee6 <_nl_locale_subfreeres+0x516>
490edf:
            74 05
490ee1:
            e8 ea 99 fc ff
                                 callq 45a8d0 < nl unload locale>
            48 8b 3b
                                        (%rbx),%rdi
490ee6:
                                 mov
                                        0x18(%rbx),%r12
490ee9:
            4c 8b 63 18
                                 mov
                                 callq 420450 <__free>
490eed:
            e8 5e f5 f8 ff
490ef2:
            48 89 df
                                        %rbx,%rdi
                                 mov
            e8 56 f5 f8 ff
                                 callq 420450 < free>
490ef5:
490efa:
            4d 85 e4
                                 test %r12,%r12
490efd:
            75 d1
                                      490ed0 < nl locale subfreeres+0x500>
                                 ine
                                 impq 490b90 <_nl_locale_subfreeres+0x1c0>
490eff:
            e9 8c fc ff ff
490f04:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
490f08:
            4c 89 e3
                                        %r12.%rbx
                                 mov
490f0b:
            48 8b 7b 10
                                        0x10(%rbx),%rdi
                                 mov
            48 85 ff
                                 test %rdi,%rdi
490f0f:
                                      490f1e <_nl_locale_subfreeres+0x54e>
490f12:
            74 0a
                                 je
            4c 39 ef
490f14:
                                       %r13,%rdi
                                 cmp
            74 05
                                      490f1e < nl locale subfreeres+0x54e>
490f17:
                                 callq 45a8d0 <_nl_unload_locale>
490f19:
            e8 b2 99 fc ff
```

```
490f1e:
            48 8b 3b
                                        (%rbx),%rdi
                                 mov
490f21:
            4c 8b 63 18
                                        0x18(\%rbx),\%r12
                                 mov
490f25:
            e8 26 f5 f8 ff
                                 callq 420450 < free>
490f2a:
            48 89 df
                                        %rbx.%rdi
                                 mov
490f2d:
            e8 1e f5 f8 ff
                                 callq 420450 <__free>
490f32:
            4d 85 e4
                                 test %r12.%r12
490f35:
            75 d1
                                      490f08 <_nl_locale_subfreeres+0x538>
                                 ine
            e9 a4 fc ff ff
                                 jmpg 490be0 < nl locale subfreeres+0x210>
490f37:
490f3c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
490f40:
            4c 89 e3
                                        %r12,%rbx
                                 mov
            48 8b 7b 10
                                        0x10(%rbx),%rdi
490f43:
                                 mov
490f47:
            48 85 ff
                                 test %rdi.%rdi
                                      490f56 < nl locale subfreeres+0x586>
490f4a:
            74 0a
                                 ie
490f4c:
            4c 39 ef
                                        %r13,%rdi
                                 cmp
            74 05
                                      490f56 <_nl_locale_subfreeres+0x586>
490f4f:
                                 je
            e8 7a 99 fc ff
                                 callq 45a8d0 < nl unload locale>
490f51:
490f56:
            48 8b 3b
                                 mov
                                        (%rbx),%rdi
490f59:
            4c 8b 63 18
                                        0x18(\%rbx),\%r12
                                 mov
490f5d:
            e8 ee f4 f8 ff
                                 callg 420450 < free>
490f62:
            48 89 df
                                 mov
                                        %rbx,%rdi
490f65:
            e8 e6 f4 f8 ff
                                 callq 420450 < free>
                                 test %r12,%r12
490f6a:
            4d 85 e4
490f6d:
            75 d1
                                      490f40 < nl locale subfreeres+0x570>
                                 ine
            e9 bc fc ff ff
                                 impg 490c30 < nl locale subfreeres+0x260>
490f6f:
                                 nopl 0x0(\%rax)
490f74:
            0f 1f 40 00
490f78:
            4c 89 e3
                                 mov
                                        %r12,%rbx
            48 8b 7b 10
                                       0x10(%rbx),%rdi
490f7b:
                                 mov
            48 85 ff
                                 test %rdi,%rdi
490f7f:
            74 0a
                                      490f8e <_nl_locale_subfreeres+0x5be>
490f82:
                                 je
490f84:
            4c 39 ef
                                       %r13,%rdi
                                 cmp
                                      490f8e < nl locale subfreeres+0x5be>
490f87:
            74 05
490f89:
            e8 42 99 fc ff
                                 callq 45a8d0 <_nl_unload locale>
490f8e:
            48 8b 3b
                                 mov
                                        (%rbx),%rdi
490f91:
            4c 8b 63 18
                                        0x18(\%rbx),\%r12
                                 mov
                                 callg 420450 < free>
490f95:
            e8 b6 f4 f8 ff
490f9a:
            48 89 df
                                 mov
                                        %rbx.%rdi
490f9d:
            e8 ae f4 f8 ff
                                 callq 420450 <__free>
490fa2:
            4d 85 e4
                                 test %r12.%r12
490fa5:
            75 d1
                                      490f78 < nl locale subfreeres+0x5a8>
                                 jmpq 490c80 <_nl_locale_subfreeres+0x2b0>
490fa7:
            e9 d4 fc ff ff
                                 nopl 0x0(\%rax)
490fac:
            0f 1f 40 00
            4c 89 e3
490fb0:
                                 mov
                                        %r12,%rbx
490fb3:
            48 8b 7b 10
                                        0x10(%rbx),%rdi
                                 mov
                                 test %rdi,%rdi
490fb7:
            48 85 ff
490fba:
            74 0a
                                 je
                                      490fc6 <_nl_locale_subfreeres+0x5f6>
490fbc:
            4c 39 ef
                                       %r13,%rdi
                                 cmp
490fbf:
            74 05
                                      490fc6 <_nl_locale_subfreeres+0x5f6>
                                 ie
                                 callq 45a8d0 <_nl_unload_locale>
490fc1:
            e8 0a 99 fc ff
                                        (%rbx),%rdi
490fc6:
            48 8b 3b
                                 mov
            4c 8b 63 18
                                        0x18(\%rbx),\%r12
490fc9:
                                 mov
            e8 7e f4 f8 ff
                                 callq 420450 < free>
490fcd:
            48 89 df
490fd2:
                                 mov
                                        %rbx,%rdi
```

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490fd5:
            e8 76 f4 f8 ff
                                 callq 420450 < free>
                                 test %r12,%r12
490fda:
            4d 85 e4
490fdd:
            75 d1
                                      490fb0 < nl locale subfreeres+0x5e0>
490fdf:
            e9 ec fc ff ff
                                 impg 490cd0 < nl locale subfreeres+0x300>
490fe4:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
490fe8:
            4c 89 e3
                                       %r12,%rbx
                                 mov
490feb:
            48 8b 7b 10
                                       0x10(%rbx),%rdi
                                 mov
            48 85 ff
                                 test %rdi,%rdi
490fef:
490ff2:
            74.0a
                                      490ffe < nl locale subfreeres+0x62e>
                                 je
490ff4:
            4c 39 ef
                                       %r13,%rdi
                                 cmp
                                      490ffe < nl locale subfreeres+0x62e>
490ff7:
            74 05
                                 je
            e8 d2 98 fc ff
                                 callq 45a8d0 < nl unload locale>
490ff9:
490ffe:
            48 8b 3b
                                       (%rbx),%rdi
                                 mov
491001:
            4c 8b 63 18
                                       0x18(\%rbx),\%r12
                                 mov
            e8 46 f4 f8 ff
                                 callq 420450 <__free>
491005:
                                       %rbx,%rdi
49100a:
            48 89 df
                                 mov
                                 callq 420450 <__ free>
49100d:
            e8 3e f4 f8 ff
                                 test %r12,%r12
            4d 85 e4
491012:
491015:
            75 d1
                                      490fe8 < nl locale subfreeres+0x618>
                                 ine
491017:
            e9 04 fd ff ff
                                 impg 490d20 < nl locale subfreeres+0x350>
49101c:
            0f 1f 40 00
                                 nopl 0x0(\%rax)
491020:
            4c 89 e3
                                 mov
                                       %r12,%rbx
491023:
            48 8b 7b 10
                                       0x10(%rbx),%rdi
                                 mov
                                 test %rdi,%rdi
491027:
            48 85 ff
49102a:
            74 0a
                                      491036 <_nl_locale_subfreeres+0x666>
                                 ie
49102c:
            4c 39 ef
                                       %r13,%rdi
                                 cmp
            74 05
                                     491036 < nl locale subfreeres+0x666>
49102f:
            e8 9a 98 fc ff
                                 callq 45a8d0 < nl unload locale>
491031:
                                       (%rbx),%rdi
491036:
            48 8b 3b
                                 mov
491039:
            4c 8b 63 18
                                       0x18(\%rbx),\%r12
                                 mov
                                 callq 420450 < free>
49103d:
            e8 0e f4 f8 ff
            48 89 df
                                       %rbx,%rdi
491042:
                                 mov
                                 callq 420450 < free>
491045:
            e8 06 f4 f8 ff
49104a:
            4d 85 e4
                                 test %r12,%r12
                                      491020 <_nl_locale_subfreeres+0x650>
49104d:
            75 d1
49104f:
            e9 1c fd ff ff
                                 jmpq 490d70 < nl locale subfreeres+0x3a0>
            0f 1f 40 00
                                 nopl 0x0(\%rax)
491054:
                                       %r12,%rbx
            4c 89 e3
491058:
                                 mov
49105b:
            48 8b 7b 10
                                       0x10(%rbx),%rdi
                                 mov
                                 test %rdi,%rdi
            48 85 ff
49105f:
            74 0a
                                      49106e <_nl_locale_subfreeres+0x69e>
491062:
                                 je
491064:
            4c 39 ef
                                       %r13,%rdi
                                 cmp
491067:
            74 05
                                      49106e < nl locale subfreeres+0x69e>
                                 je
491069:
            e8 62 98 fc ff
                                 callq 45a8d0 <_nl_unload_locale>
49106e:
            48 8b 3b
                                 mov
                                       (%rbx),%rdi
491071:
            4c 8b 63 18
                                       0x18(\%rbx),\%r12
                                 mov
491075:
            e8 d6 f3 f8 ff
                                 callg 420450 < free>
49107a:
            48 89 df
                                 mov
                                       %rbx,%rdi
                                 callq 420450 <__free>
49107d:
            e8 ce f3 f8 ff
                                 test %r12,%r12
491082:
            4d 85 e4
                                     491058 < nl locale subfreeres+0x688>
491085:
            75 d1
            e9 34 fd ff ff
                                 jmpq 490dc0 <_nl_locale_subfreeres+0x3f0>
491087:
```

```
49108c:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
000000000491090 < nl archive subfreeres>:
 491090:
             41 54
                                 push %r12
 491092:
             55
                           push %rbp
             48 8b 2d c6 be 22 00 mov
 491093:
                                       0x22bec6(\%rip),\%rbp
                                                                # 6bcf60 <archloaded>
 49109a:
             53
                          push %rbx
             48 85 ed
 49109b:
                                 test %rbp,%rbp
 49109e:
             74 56
                                      4910f6 <_nl_archive_subfreeres+0x66>
                                 je
                                 mov
 4910a0:
             48 8b 7d 08
                                       0x8(%rbp),%rdi
                                       0x0(%rbp),%r12
 4910a4:
             4c 8b 65 00
                                 mov
             31 db
                                       %ebx,%ebx
 4910a8:
                                 xor
                                 callq 420450 < free>
             e8 a1 f3 f8 ff
 4910aa:
                                       4910bc <_nl_archive_subfreeres+0x2c>
 4910af:
             eb 0b
                                 imp
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
 4910b1:
                                       $0x1,%rbx
 4910b8:
             48 83 c3 01
                                 add
 4910bc:
             48 83 fb 06
                                 cmp
                                       $0x6,%rbx
             74 f6
                                      4910b8 <_nl_archive_subfreeres+0x28>
 4910c0:
                                 je
                                 mov 0x10(%rbp,%rbx,8),%rdi
 4910c2:
             48 8b 7c dd 10
                                 test %rdi,%rdi
 4910c7:
             48 85 ff
 4910ca:
             74 15
                                      4910e1 <_nl_archive_subfreeres+0x51>
                                 je
                                 mov 0x20(%rdi),%rax
 4910cc:
             48 8b 47 20
 4910d0:
             48 85 c0
                                 test %rax,%rax
                                      4910dc <_nl_archive_subfreeres+0x4c>
             74 07
 4910d3:
                                 je
                           callq *%rax
 4910d5:
             ff d0
 4910d7:
             48 8b 7c dd 10
                                 mov
                                       0x10(%rbp,%rbx,8),%rdi
             e8 6f f3 f8 ff
                                 callg 420450 < free>
 4910dc:
                                       $0xc,%ebx
 4910e1:
             83 fb 0c
                                 cmp
                                      4910b8 <_nl_archive_subfreeres+0x28>
 4910e4:
             75 d2
                                 ine
 4910e6:
             48 89 ef
                                        %rbp,%rdi
                                 mov
 4910e9:
             4c 89 e5
                                       %r12,%rbp
                                 mov
                                 callq 420450 <__free>
 4910ec:
             e8 5f f3 f8 ff
                                 test %r12,%r12
 4910f1:
             4d 85 e4
 4910f4:
             75 aa
                                      4910a0 <_nl_archive_subfreeres+0x10>
                                 jne
             48 8b 1d 2b bf 22 00 mov 0x22bf2b(%rip),%rbx
                                                                # 6bd028 <archmapped>
 4910f6:
 4910fd:
             48 c7 05 58 be 22 00 movg $0x0,0x22be58(%rip)
                                                                 # 6bcf60 <archloaded>
             00 00 00 00
 491104:
 491108:
             48 85 db
                                 test %rbx.%rbx
 49110b:
             74 52
                                      49115f < nl archive subfreeres+0xcf>
                                 ie
             48 8d 05 fc be 22 00 lea
                                     0x22befc(%rip),%rax
 49110d:
                                                               # 6bd010 <headmap>
             48 39 c3
                                       %rax,%rbx
 491114:
                                 cmp
 491117:
             75 4b
                                 ine
                                      491164 < _nl_archive_subfreeres+0xd4>
 491119:
             8b 73 0c
                                       0xc(%rbx),%esi
                                 mov
 49111c:
             48 8b 3b
                                       (%rbx),%rdi
                                 mov
 49111f:
             48 c7 05 fe be 22 00 movg $0x0,0x22befe(%rip)
                                                                # 6bd028 <archmapped>
 491126:
             00 00 00 00
 49112a:
             e8 31 98 fb ff
                                 callq 44a960 <__munmap>
             48 8b 5b 10
                                       0x10(%rbx),%rbx
 49112f:
                                 mov
             48 85 db
                                 test %rbx,%rbx
 491133:
             74 27
 491136:
                                      49115f < nl archive subfreeres+0xcf>
             0f 1f 84 00 00 00 00 nopl 0x0(%rax,%rax,1)
 491138:
 49113f:
             00
```

```
491140:
             8b 73 0c
                                       0xc(%rbx),%esi
                                 mov
 491143:
             48 8b 3b
                                       (%rbx),%rdi
                                 mov
 491146:
             48 8b 6b 10
                                       0x10(%rbx),%rbp
                                 mov
 49114a:
             e8 11 98 fb ff
                                 callq 44a960 < munmap>
             48 89 df
                                       %rbx,%rdi
 49114f:
                                 mov
 491152:
             48 89 eb
                                       %rbp,%rbx
                                 mov
 491155:
             e8 f6 f2 f8 ff
                                 callq 420450 <__free>
             48 85 ed
                                 test %rbp,%rbp
 49115a:
             75 e1
                                      491140 < nl archive subfreeres+0xb0>
 49115d:
                                 jne
 49115f:
             5b
                                %rbx
                          pop
 491160:
             5d
                          pop
                                %rbp
             41 5c
                                 pop
                                       %r12
 491161:
 491163:
             c3
                          retq
 491164:
             48 8d 0d 75 6e 00 00 lea
                                      0x6e75(%rip),%rcx
                                                            # 497fe0
<__PRETTY_FUNCTION__.9184>
                                     0x6e1e(%rip),%rsi
 49116b:
             48 8d 35 1e 6e 00 00 lea
                                                           # 497f90
<_nl_value_type_LC_MEASUREMENT+0x8>
 491172:
             48 8d 3d 25 6e 00 00 lea 0x6e25(%rip),%rdi
                                                            # 497f9e
< nl value type LC MEASUREMENT+0x16>
 491179:
             ba 16 02 00 00
                                 mov
                                       $0x216,%edx
 49117e:
             e8 ed 0d f7 ff
                                 callq 401f70 < assert fail>
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 491183:
 49118a:
             00 00 00
             0f 1f 00
                                 nopl (%rax)
 49118d:
0000000000491190 <free mem>:
             48 83 ec 08
                                      $0x8,%rsp
 491190:
                                 sub
 491194:
             be 01 00 00 00
                                       $0x1,%esi
                                 mov
                                      %eax,%eax
 491199:
             31 c0
                                 xor
 49119b:
             83 3d 0a 07 23 00 00 cmpl $0x0,0x23070a(%rip)
                                                               # 6c18ac
< libc multiple threads>
                                     4911b0 <free mem+0x20>
 4911a2:
             74.0c
 4911a4:
             f0 0f b1 35 94 be 22 lock cmpxchg %esi,0x22be94(%rip)
                                                                      # 6bd040 <envlock>
 4911ab:
             00
             75 0b
                                      4911b9 <free mem+0x29>
 4911ac:
                                 ine
 4911ae:
             eb 23
                                 jmp
                                      4911d3 <free mem+0x43>
             Of b1 35 89 be 22 00 cmpxchg %esi,0x22be89(%rip)
                                                                  # 6bd040 <envlock>
 4911b0:
                                     4911d3 <free mem+0x43>
 4911b7:
                                 ie
 4911b9:
             48 8d 3d 80 be 22 00 lea
                                      0x22be80(%rip),%rdi
                                                              # 6bd040 <envlock>
             48 81 ec 80 00 00 00 sub
 4911c0:
                                      $0x80,%rsp
             e8 34 af fb ff
                                 callq 44c100 <__lll_lock_wait_private>
 4911c7:
 4911cc:
             48 81 c4 80 00 00 00 add
                                      $0x80,%rsp
                                       0x22bc4e(%rip),%rdi
 4911d3:
             48 8b 3d 4e bc 22 00 mov
                                                               # 6bce28 < environ>
                                       %rdi,0x22be4f(%rip)
 4911da:
             48 39 3d 4f be 22 00 cmp
                                                               # 6bd030 < last_environ >
 4911e1:
             75 05
                                 jne
                                      4911e8 <free_mem+0x58>
             48 85 ff
 4911e3:
                                 test %rdi.%rdi
                                      491250 <free_mem+0xc0>
 4911e6:
             75 68
                                 ine
             48 c7 05 35 bc 22 00 movg $0x0,0x22bc35(%rip)
                                                                # 6bce28 < environ>
 4911e8:
             00 00 00 00
 4911ef:
             83 3d b2 06 23 00 00 cmpl $0x0,0x2306b2(%rip)
 4911f3:
                                                                # 6c18ac
< libc multiple threads>
 4911fa:
             74 0b
                                     491207 <free_mem+0x77>
                                 je
```

```
4911fc:
             f0 ff 0d 3d be 22 00 lock decl 0x22be3d(%rip)
                                                             # 6bd040 <envlock>
 491203:
             75 0a
                                 ine
                                     49120f <free mem+0x7f>
 491205:
             eb 22
                                 jmp 491229 <free mem+0x99>
 491207:
             ff 0d 33 be 22 00
                                 decl 0x22be33(%rip)
                                                          # 6bd040 <envlock>
 49120d:
             74 1a
                                      491229 <free mem+0x99>
                                 ie
 49120f:
             48 8d 3d 2a be 22 00 lea
                                      0x22be2a(%rip),%rdi
                                                              # 6bd040 <envlock>
 491216:
             48 81 ec 80 00 00 00 sub
                                      $0x80,%rsp
                                 callq 44c130 < lll unlock wake private>
 49121d:
             e8 0e af fb ff
 491222:
             48 81 c4 80 00 00 00 add
                                      $0x80,%rsp
                                       $0x420450,%rsi
 491229:
             48 c7 c6 50 04 42 00 mov
             48 8b 3d 01 be 22 00 mov
                                       0x22be01(%rip),%rdi
 491230:
                                                                #6bd038 <known values>
 491237:
             e8 a4 a3 fb ff
                                 callq 44b5e0 < tdestroy>
             48 c7 05 f1 bd 22 00 movg $0x0,0x22bdf1(%rip)
 49123c:
                                                                #6bd038 <known values>
             00 00 00 00
 491243:
             48 83 c4 08
 491247:
                                 add
                                       $0x8,%rsp
 49124b:
             c3
                          retq
 49124c:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
 491250:
             e8 fb f1 f8 ff
                                 callq 420450 < free>
 491255:
             48 c7 05 d0 bd 22 00 movg $0x0,0x22bdd0(%rip)
                                                                 #6bd030 < last environ>
 49125c:
             00 00 00 00
 491260:
             eb 86
                                 jmp 4911e8 <free mem+0x58>
 491262:
             66 2e 0f 1f 84 00 00 nopw %cs:0x0(%rax,%rax,1)
 491269:
             00 00 00
             0f 1f 40 00
                                 nopl 0x0(%rax)
 49126c:
0000000000491270 <free mem>:
 491270:
             48 8b 05 f9 07 23 00 mov
                                       0x2307f9(%rip),%rax
                                                                # 6c1a70
<__printf_modifier table>
 491277:
             48 85 c0
                                 test %rax,%rax
 49127a:
             74 4e
                                      4912ca <free_mem+0x5a>
                                 je
                          push %rbp
 49127c:
             55
                          push %rbx
 49127d:
             53
             31 ed
 49127e:
                                 xor
                                      %ebp,%ebp
 491280:
             48 83 ec 08
                                      $0x8,%rsp
                                 sub
 491284:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
 491288:
             48 8b 3c 28
                                 mov
                                       (%rax,%rbp,1),%rdi
 49128c:
             48 85 ff
                                 test %rdi,%rdi
                                      4912af <free mem+0x3f>
 49128f:
             74 1e
                                 ie
 491291:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
 491298:
             48 8b 1f
                                 mov
                                       (%rdi),%rbx
 49129b:
             e8 b0 f1 f8 ff
                                 callq 420450 <__free>
 4912a0:
             48 85 db
                                 test %rbx,%rbx
             48 89 df
 4912a3:
                                       %rbx,%rdi
                                 mov
                                      491298 <free_mem+0x28>
 4912a6:
             75 f0
                                 jne
 4912a8:
             48 8b 05 c1 07 23 00 mov
                                       0x2307c1(%rip),%rax
                                                                #6c1a70
< printf modifier table>
 4912af:
             48 83 c5 08
                                 add
                                       $0x8,%rbp
             48 81 fd f8 07 00 00
                                       $0x7f8,%rbp
 4912b3:
                                cmp
                                      491288 <free_mem+0x18>
 4912ba:
             75 cc
                                 jne
             48 83 c4 08
 4912bc:
                                 add
                                      $0x8,%rsp
             48 89 c7
                                       %rax,%rdi
 4912c0:
                                 mov
 4912c3:
             5b
                                %rbx
                          pop
```

```
4912c4:
             5d
                                 %rbp
                           pop
                                  jmpq 420450 <__ free>
 4912c5:
             e9 86 f1 f8 ff
 4912ca:
             f3 c3
                                  repz retq
 4912cc:
             0f 1f 40 00
                                  nopl 0x0(\%rax)
0000000004912d0 <free slotinfo>:
 4912d0:
             55
                           push %rbp
 4912d1:
             53
                           push %rbx
 4912d2:
             b8 01 00 00 00
                                        $0x1,%eax
                                  mov
 4912d7:
             48 83 ec 08
                                  sub
                                       $0x8,%rsp
             48 8b 1f
                                        (%rdi),%rbx
 4912db:
                                  mov
 4912de:
             48 85 db
                                  test %rbx,%rbx
             75 0d
                                       4912f0 <free_slotinfo+0x20>
 4912e1:
                                  ine
 4912e3:
             48 83 c4 08
                                  add
                                       $0x8,%rsp
 4912e7:
                                 %rbx
             5b
                           pop
 4912e8:
             5d
                                 %rbp
                           pop
 4912e9:
             c3
                           retq
 4912ea:
             66 0f 1f 44 00 00
                                  nopw 0x0(\%rax,\%rax,1)
 4912f0:
             48 89 fd
                                  mov
                                        %rdi,%rbp
 4912f3:
             48 8b 7b 08
                                  mov
                                        0x8(%rbx),%rdi
 4912f7:
             48 85 ff
                                  test %rdi.%rdi
 4912fa:
             75 3c
                                  ine
                                       491338 <free_slotinfo+0x68>
 4912fc:
             48 8b 0b
                                  mov (%rbx),%rcx
             48 85 c9
                                  test %rcx,%rcx
 4912ff:
             0f 84 88 00 00 00
 491302:
                                      491390 <free slotinfo+0xc0>
 491308:
             48 83 7b 18 00
                                  cmpq $0x0,0x18(\%rbx)
                                       491329 < free slotinfo + 0x59 >
             75 1a
                                  ine
 49130d:
                                       %eax,%eax
 49130f:
             31 c0
                                  xor
             48 83 c0 01
                                       $0x1,%rax
 491311:
                                  add
 491315:
             48 39 c8
                                       %rcx,%rax
                                  cmp
             74 76
                                      491390 <free slotinfo+0xc0>
 491318:
                                  je
             48 89 c2
                                        %rax,%rdx
 49131a:
                                  mov
 49131d:
             48 c1 e2 04
                                  shl
                                      $0x4,%rdx
                                  cmpq $0x0,0x18(%rbx,%rdx,1)
 491321:
             48 83 7c 13 18 00
                                      491311 < free slotinfo+0x41>
 491327:
             74 e8
                                  ie
 491329:
             48 83 c4 08
                                  add
                                       $0x8,%rsp
 49132d:
             31 c0
                                       %eax,%eax
                                  xor
 49132f:
             5b
                                 %rbx
                           pop
 491330:
             5d
                                 %rbp
                           pop
 491331:
             c3
                           retq
 491332:
             66 0f 1f 44 00 00
                                  nopw 0x0(\%rax,\%rax,1)
 491338:
             48 83 c7 08
                                  add $0x8,%rdi
                                  callq 4912d0 <free slotinfo>
 49133c:
             e8 8f ff ff ff
                                  test %al,%al
 491341:
             84 c0
 491343:
             74 e4
                                  je
                                      491329 <free_slotinfo+0x59>
 491345:
             48 8b 7b 08
                                        0x8(%rbx),%rdi
                                  mov
                                        (%rdi),%rcx
 491349:
             48 8b 0f
                                  mov
             48 85 c9
                                  test %rcx,%rcx
 49134c:
 49134f:
             74 23
                                      491374 <free_slotinfo+0xa4>
             48 83 7f 18 00
                                  cmpq $0x0,0x18(%rdi)
 491351:
             75 d1
                                       491329 < free slotinfo + 0x59 >
 491356:
                                  ine
                                       0x28(%rdi),%rdx
 491358:
             48 8d 57 28
                                  lea
```

```
49135c:
             31 c0
                                       %eax,%eax
                                 xor
 49135e:
             eb 0b
                                       49136b <free slotinfo+0x9b>
                                 imp
 491360:
             48 83 c2 10
                                 add
                                       $0x10,%rdx
 491364:
             48 83 7a f0 00
                                 cmpg $0x0,-0x10(\%rdx)
 491369:
             75 be
                                      491329 < free slotinfo + 0x59 >
                                 ine
 49136b:
             48 83 c0 01
                                 add $0x1,%rax
 49136f:
             48 39 c8
                                 cmp
                                       %rcx,%rax
             75 ec
                                 jne 491360 <free slotinfo+0x90>
 491372:
 491374:
             e8 d7 f0 f8 ff
                                 callg 420450 < free>
             48 c7 43 08 00 00 00 movq $0x0,0x8(%rbx)
 491379:
 491380:
             00
 491381:
             48 8b 5d 00
                                        0x0(%rbp), %rbx
                                 mov
 491385:
             e9 72 ff ff ff
                                 jmpg 4912fc <free slotinfo+0x2c>
 49138a:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
                                        %rbx,%rdi
 491390:
             48 89 df
                                 mov
                                 callq 420450 < free>
 491393:
             e8 b8 f0 f8 ff
 491398:
             48 c7 45 00 00 00 00 movq $0x0,0x0(%rbp)
 49139f:
             00
 4913a0:
             b8 01 00 00 00
                                        $0x1,%eax
                                 mov
                                 jmpq 4912e3 <free_slotinfo+0x13>
 4913a5:
             e9 39 ff ff ff
 4913aa:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
00000000004913b0 <free mem>:
 4913b0:
             41 57
                                 push %r15
             41 56
 4913b2:
                                 push %r14
 4913b4:
             41 55
                                 push %r13
             41 54
 4913b6:
                                 push %r12
 4913b8:
             55
                                 %rbp
                           push
 4913b9:
             53
                           push %rbx
 4913ba:
             48 83 ec 18
                                       $0x18,%rsp
                                 sub
             48 8b 3d d3 05 23 00 mov
 4913be:
                                       0x2305d3(%rip),%rdi
                                                                # 6c1998 < dl all dirs>
             48 3b 3d a4 05 23 00 cmp
                                       0x2305a4(%rip),%rdi
                                                                # 6c1970 <_dl_init_all_dirs>
 4913c5:
 4913cc:
             74 16
                                 je
                                      4913e4 < free mem+0x34>
             66 90
 4913ce:
                                 xchg %ax,%ax
             48 8b 1f
 4913d0:
                                 mov
                                       (%rdi),%rbx
 4913d3:
             e8 78 f0 f8 ff
                                 callq 420450 < free>
 4913d8:
             48 39 1d 91 05 23 00 cmp
                                       %rbx,0x230591(%rip)
                                                                 #6c1970
< dl init all dirs>
 4913df:
             48 89 df
                                 mov
                                        %rbx,%rdi
 4913e2:
             75 ec
                                 jne 4913d0 <free_mem+0x20>
 4913e4:
             48 83 3d 9c 9e 22 00 cmpq $0x0,0x229e9c(%rip)
                                                                 # 6bb288 <_dl_nns>
 4913eb:
             00
             74 79
 4913ec:
                                      491467 <free mem+0xb7>
                                 je
             48 8b 2d eb 9e 22 00 mov 0x229eeb(%rip),%rbp
 4913ee:
                                                                 # 6bb2e0 <_dl_ns>
 4913f5:
             48 85 ed
                                 test %rbp,%rbp
 4913f8:
             74 63
                                      49145d <free mem+0xad>
                                 ie
 4913fa:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
                                        0x38(%rbp),%rax
 491400:
             48 8b 45 38
                                 mov
                                        0x8(%rax),%rdi
 491404:
             48 8b 78 08
                                 mov
             48 c7 40 08 00 00 00 movq $0x0,0x8(%rax)
 491408:
             00
 49140f:
             48 85 ff
 491410:
                                 test %rdi,%rdi
```

```
491413:
            75 13
                                     491428 <free mem+0x78>
            eb 29
                                 imp 491440 <free mem+0x90>
491415:
491417:
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
49141e:
            00 00
491420:
            48 85 db
                                 test %rbx,%rbx
491423:
            48 89 df
                                 mov
                                       %rbx,%rdi
491426:
            74 18
                                     491440 <free_mem+0x90>
                                 ie
            8b 47 10
                                       0x10(%rdi),%eax
491428:
                                 mov
49142b:
            48 8b 5f 08
                                       0x8(%rdi),%rbx
                                 mov
49142f:
            85 c0
                                 test %eax,%eax
491431:
            75 ed
                                 ine 491420 <free mem+0x70>
            e8 18 f0 f8 ff
                                 callg 420450 < free>
491433:
                                 test %rbx,%rbx
491438:
            48 85 db
49143b:
            48 89 df
                                 mov
                                       %rbx,%rdi
49143e:
            75 e8
                                     491428 <free_mem+0x78>
                                 jne
            f6 85 16 03 00 00 01 testb $0x1,0x316(%rbp)
491440:
                                 jne 4914a0 <free_mem+0xf0>
491447:
            75 57
491449:
            48 c7 85 b8 03 00 00 movq $0x0,0x3b8(%rbp)
491450:
            00 00 00 00
491454:
            48 8b 6d 18
                                 mov
                                       0x18(%rbp),%rbp
491458:
            48 85 ed
                                 test %rbp,%rbp
                                     491400 <free_mem+0x50>
                                jne
49145b:
            75 a3
49145d:
            48 83 3d 93 9e 22 00 cmpg $0x0.0x229e93(%rip)
                                                                # 6bb2f8 < dl ns+0x18>
491464:
            00
            75 67
491465:
                                     4914ce <free mem+0x11e>
                                ine
491467:
            48 8b 2d f2 03 23 00 mov
                                       0x2303f2(%rip),%rbp
                                                               #6c1860
< dl tls dtv slotinfo list>
49146e:
            48 8b 5d 08
                                       0x8(\%rbp),\%rbx
                                 mov
                                 test %rbx,%rbx
491472:
            48 85 db
491475:
            0f 85 8d 00 00 00
                                      491508 <free_mem+0x158>
                                 jne
                                       0x2304ce(%rip),%rdi
49147b:
            48 8b 3d ce 04 23 00 mov
                                                               # 6c1950
<_dl_scope_free_list>
491482:
            48 c7 05 c3 04 23 00 movg $0x0,0x2304c3(%rip)
                                                                #6c1950
<_dl_scope_free_list>
491489:
            00 00 00 00
49148d:
            48 83 c4 18
                                 add
                                      $0x18,%rsp
                                %rbx
491491:
            5b
                          pop
491492:
            5d
                          pop
                                %rbp
491493:
            41 5c
                                      %r12
                                 pop
491495:
            41 5d
                                      %r13
                                 pop
            41 5e
                                      %r14
491497:
                                 pop
491499:
            41 5f
                                      %r15
                                 pop
49149b:
            e9 b0 ef f8 ff
                                 jmpg 420450 < free>
            48 8b bd b8 03 00 00 mov
                                       0x3b8(%rbp),%rdi
4914a0:
4914a7:
            e8 a4 ef f8 ff
                                 callq 420450 <__free>
4914ac:
            48 c7 85 b8 03 00 00 movg $0x0,0x3b8(%rbp)
4914b3:
            00 00 00 00
                                 mov
4914b7:
            48 8b 6d 18
                                       0x18(%rbp),%rbp
            48 85 ed
                                     %rbp,%rbp
4914bb:
                                 test
                                     491400 <free mem+0x50>
4914be:
            Of 85 3c ff ff ff
                                 ine
            48 83 3d 2c 9e 22 00 cmpg $0x0,0x229e2c(%rip)
                                                                # 6bb2f8 < dl ns+0x18>
4914c4:
4914cb:
            00
```

```
4914cc:
            74 99
                                     491467 <free mem+0xb7>
                                 je
4914ce:
            48 8b 05 1b 9e 22 00 mov
                                       0x229e1b(%rip),%rax
                                                               \# 6bb2f0 < dl ns+0x10 >
4914d5:
            8b 35 dd 9d 22 00
                                 mov
                                       0x229ddd(%rip),%esi
                                                               #6bb2b8
< dl initial searchlist+0x8>
4914db:
            39 70 08
                                       %esi,0x8(%rax)
                                 cmp
                                     491467 <free_mem+0xb7>
4914de:
            75 87
                                 ine
4914e0:
            48 8b 15 c9 9d 22 00 mov
                                       0x229dc9(%rip),%rdx
                                                                #6bb2b0
< dl initial searchlist>
4914e7:
            48 8b 38
                                       (%rax),%rdi
                                 mov
4914ea:
            48 89 10
                                       %rdx,(%rax)
                                 mov
            48 c7 05 00 9e 22 00 movg $0x0,0x229e00(%rip)
4914ed:
                                                                # 6bb2f8 < dl ns+0x18>
4914f4:
            00 00 00 00
                                 callq 420450 < free>
4914f8:
            e8 53 ef f8 ff
4914fd:
            e9 65 ff ff ff
                                 impg 491467 <free mem+0xb7>
                                 nopw 0x0(\%rax,\%rax,1)
491502:
            66 0f 1f 44 00 00
                                 mov 0x8(%rbx),%r12
491508:
            4c 8b 63 08
49150c:
            4d 85 e4
                                 test %r12,%r12
49150f:
            75 32
                                     491543 <free mem+0x193>
                                 ine
491511:
            48 8b 0b
                                 mov (%rbx),%rcx
491514:
            48 85 c9
                                 test %rcx,%rcx
491517:
            74 68
                                     491581 <free_mem+0x1d1>
                                 je
                                 cmpq $0x0,0x18(%rbx)
491519:
            48 83 7b 18 00
49151e:
            0f 85 57 ff ff ff
                                     49147b <free mem+0xcb>
                                     %eax,%eax
491524:
            31 c0
                                 xor
                                      $0x1,%rax
491526:
            48 83 c0 01
                                 add
49152a:
            48 39 c8
                                 cmp
                                      %rcx,%rax
                                     491581 <free mem+0x1d1>
            74 52
49152d:
                                 ie
                                      %rax,%rdx
49152f:
            48 89 c2
                                 mov
            48 c1 e2 04
                                     $0x4,%rdx
491532:
                                 shl
491536:
            48 83 7c 13 18 00
                                 cmpq $0x0,0x18(%rbx,%rdx,1)
                                     491526 <free_mem+0x176>
49153c:
            74 e8
            e9 38 ff ff ff
                                jmpq 49147b <free_mem+0xcb>
49153e:
491543:
            4d 8b 6c 24 08
                                 mov
                                      0x8(%r12),%r13
491548:
            4d 85 ed
                                 test %r13,%r13
            75 49
                                     491596 <free_mem+0x1e6>
49154b:
                                 ine
49154d:
            49 8b 0c 24
                                 mov (%r12),%rcx
491551:
            48 85 c9
                                 test %rcx,%rcx
                                     4915d2 <free mem+0x222>
491554:
            74 7c
491556:
            49 83 7c 24 18 00
                                 cmpg $0x0.0x18(\%r12)
            0f 85 19 ff ff ff
                                     49147b <free_mem+0xcb>
49155c:
                                 ine
491562:
            31 c0
                                     %eax,%eax
                                 xor
491564:
            48 83 c0 01
                                 add
                                      $0x1,%rax
491568:
            48 39 c8
                                      %rcx,%rax
                                 cmp
                                     4915d2 <free_mem+0x222>
49156b:
            74 65
                                 je
49156d:
            48 89 c2
                                mov
                                      %rax,%rdx
491570:
            48 c1 e2 04
                                 shl
                                    $0x4,%rdx
                                 cmpq $0x0,0x18(\%r12,\%rdx,1)
491574:
            49 83 7c 14 18 00
            74 e8
                                     491564 <free mem+0x1b4>
49157a:
            e9 fa fe ff ff
                                impq 49147b <free_mem+0xcb>
49157c:
            48 89 df
                                       %rbx,%rdi
491581:
                                 mov
                                 callq 420450 < free>
491584:
            e8 c7 ee f8 ff
            48 c7 45 08 00 00 00 movq $0x0,0x8(%rbp)
491589:
```

```
491590:
            00
491591:
            e9 e5 fe ff ff
                                impg 49147b <free mem+0xcb>
491596:
            4d 8b 75 08
                                mov
                                      0x8(%r13),%r14
49159a:
            4d 85 f6
                                test %r14.%r14
49159d:
            75 66
                                    491605 <free mem+0x255>
                                ine
49159f:
            49 8b 55 00
                                mov 0x0(\%r13),\%rdx
4915a3:
            48 85 d2
                                test %rdx,%rdx
            74 43
                                    4915eb <free mem+0x23b>
4915a6:
                                je
                                cmpq $0x0,0x18(\%r13)
4915a8:
            49 83 7d 18 00
                                     49147b <free mem+0xcb>
4915ad:
            0f 85 c8 fe ff ff
                                     %eax,%eax
4915b3:
            31 c0
                                xor
            48 83 c0 01
                                     $0x1,%rax
4915b5:
                                add
            48 39 d0
4915b9:
                                      %rdx.%rax
                                cmp
4915bc:
            74 2d
                                    4915eb <free mem+0x23b>
                                ie
                                     %rax,%rcx
4915be:
            48 89 c1
                                mov
                                shl $0x4,%rcx
4915c1:
            48 c1 e1 04
4915c5:
            49 83 7c 0d 18 00
                                cmpq $0x0,0x18(\%r13,\%rcx,1)
4915cb:
            74 e8
                                    4915b5 <free mem+0x205>
4915cd:
            e9 a9 fe ff ff
                                impg 49147b <free mem+0xcb>
4915d2:
            4c 89 e7
                                mov
                                      %r12,%rdi
4915d5:
            e8 76 ee f8 ff
                                callq 420450 < free>
4915da:
            48 c7 43 08 00 00 00 movq $0x0,0x8(%rbx)
4915e1:
            00
                                      0x8(\%rbp),\%rbx
4915e2:
            48 8b 5d 08
                                mov
                                      491511 <free mem+0x161>
4915e6:
            e9 26 ff ff ff
                                jmpq
4915eb:
            4c 89 ef
                                mov
                                      %r13,%rdi
                                callg 420450 < free>
4915ee:
            e8 5d ee f8 ff
            49 c7 44 24 08 00 00 movg $0x0,0x8(%r12)
4915f3:
            00 00
4915fa:
4915fc:
            4c 8b 63 08
                                      0x8(%rbx),%r12
                                mov
491600:
            e9 48 ff ff ff
                                jmpg 49154d <free mem+0x19d>
            4d 8b 7e 08
                                      0x8(%r14),%r15
491605:
                                mov
491609:
            4d 85 ff
                                test %r15,%r15
49160c:
            75 36
                                     491644 <free_mem+0x294>
                                jne
            49 8b 0e
49160e:
                                      (%r14),%rcx
                                mov
491611:
            48 85 c9
                                test %rcx,%rcx
                                    4916a0 <free_mem+0x2f0>
            0f 84 86 00 00 00
491614:
                                je
                                cmpq $0x0,0x18(\%r14)
49161a:
            49 83 7e 18 00
49161f:
            0f 85 56 fe ff ff
                                ine
                                     49147b <free mem+0xcb>
                                    0x28(%r14),%rdx
491625:
            49 8d 56 28
                                lea
491629:
            31 c0
                                     %eax,%eax
                                xor
49162b:
            48 83 c0 01
                                add
                                     $0x1,%rax
49162f:
            48 39 c8
                                      %rcx,%rax
                                cmp
                                    4916a0 <free_mem+0x2f0>
491632:
            74 6c
                                je
491634:
            48 83 c2 10
                                add $0x10,%rdx
491638:
            48 83 7a f0 00
                                cmpq $0x0,-0x10(\%rdx)
49163d:
            74 ec
                                    49162b <free mem+0x27b>
            e9 37 fe ff ff
                                jmpq 49147b <free_mem+0xcb>
49163f:
                                      0x8(%r15),%rdx
491644:
            49 8b 57 08
                                mov
            48 85 d2
                                test %rdx,%rdx
491648:
            75 6d
                                     4916ba <free mem+0x30a>
49164b:
                                ine
            49 8b 0f
49164d:
                                      (%r15),%rcx
                                mov
```

```
491650:
            48 85 c9
                                test %rcx,%rcx
491653:
            74 2b
                                    491680 <free mem+0x2d0>
491655:
            49 83 7f 18 00
                                cmpg $0x0,0x18(\%r15)
49165a:
            0f 85 1b fe ff ff
                                ine
                                     49147b <free mem+0xcb>
            49 8d 57 28
                                lea
                                    0x28(%r15),%rdx
491660:
491664:
            31 c0
                                     %eax,%eax
                                xor
491666:
            eb 0f
                                jmp
                                     491677 <free_mem+0x2c7>
            48 83 c2 10
                                     $0x10,%rdx
491668:
                                add
            48 83 7a f0 00
                                cmpq $0x0,-0x10(\%rdx)
49166c:
                                     49147b < free mem+0xcb>
491671:
            0f 85 04 fe ff ff
                                ine
            48 83 c0 01
                                add $0x1,%rax
491677:
            48 39 c1
                                      %rax,%rcx
49167b:
                                cmp
            75 e8
                                     491668 <free mem+0x2b8>
49167e:
                                ine
491680:
            4c 89 ff
                                      %r15,%rdi
                                mov
491683:
            e8 c8 ed f8 ff
                                callq 420450 <__free>
            49 c7 46 08 00 00 00 movg $0x0,0x8(%r14)
491688:
49168f:
            00
            4d 8b 75 08
                                      0x8(%r13),%r14
491690:
                                mov
                                impg 49160e <free mem+0x25e>
491694:
            e9 75 ff ff ff
491699:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
4916a0:
            4c 89 f7
                                      %r14,%rdi
                                mov
                                callq 420450 <__free>
4916a3:
            e8 a8 ed f8 ff
4916a8:
            49 c7 45 08 00 00 00 movq $0x0,0x8(%r13)
4916af:
            00
            4d 8b 6c 24 08
                                      0x8(%r12),%r13
4916b0:
                                mov
4916b5:
            e9 e5 fe ff ff
                                      49159f <free mem+0x1ef>
                                jmpq
            48 8b 42 08
                                      0x8(%rdx),%rax
4916ba:
                                mov
                                test %rax,%rax
4916be:
            48 85 c0
                                     491711 <free_mem+0x361>
4916c1:
            75 4e
                                ine
4916c3:
            48 8b 32
                                      (%rdx),%rsi
                                mov
            48 85 f6
                                test %rsi,%rsi
4916c6:
            74 2d
                                    4916f8 <free_mem+0x348>
4916c9:
4916cb:
            48 83 7a 18 00
                                cmpq $0x0,0x18(\%rdx)
4916d0:
            0f 85 a5 fd ff ff
                                     49147b <free_mem+0xcb>
                                ine
4916d6:
            48 8d 4a 28
                                lea
                                     0x28(%rdx),%rcx
                                    %eax,%eax
4916da:
            31 c0
                                xor
                                     4916ef <free_mem+0x33f>
            eb 11
4916dc:
                                jmp
4916de:
            66 90
                                xchg %ax.%ax
4916e0:
            48 83 c1 10
                                add
                                     $0x10,%rcx
            48 83 79 f0 00
                                cmpq $0x0,-0x10(\%rcx)
4916e4:
4916e9:
            Of 85 8c fd ff ff
                                     49147b <free mem+0xcb>
                                ine
4916ef:
            48 83 c0 01
                                add
                                     $0x1,%rax
            48 39 f0
                                      %rsi,%rax
4916f3:
                                cmp
                                     4916e0 <free_mem+0x330>
4916f6:
            75 e8
                                ine
4916f8:
            48 89 d7
                                mov
                                      %rdx,%rdi
4916fb:
            e8 50 ed f8 ff
                                callq 420450 < free>
            49 c7 47 08 00 00 00 movq $0x0,0x8(%r15)
491700:
            00
491707:
491708:
            4d 8b 7e 08
                                      0x8(%r14),%r15
                                mov
            e9 3c ff ff ff
                                      49164d <free mem+0x29d>
49170c:
                                jmpq
                                     0x8(%rax),%rdi
491711:
            48 8d 78 08
                                lea
491715:
            48 89 54 24 08
                                mov
                                      %rdx,0x8(%rsp)
```

```
49171a:
             e8 b1 fb ff ff
                                 callq 4912d0 <free slotinfo>
                                 test %al,%al
 49171f:
             84 c0
 491721:
             0f 84 54 fd ff ff
                                 je
                                      49147b < free mem+0xcb>
 491727:
             48 8b 54 24 08
                                        0x8(\%rsp),\%rdx
                                 mov
 49172c:
             31 c0
                                 xor
                                       %eax,%eax
 49172e:
             48 8b 7a 08
                                        0x8(%rdx),%rdi
                                 mov
 491732:
             48 8b 0f
                                        (%rdi),%rcx
                                 mov
             48 39 c8
                                        %rcx,%rax
 491735:
                                 cmp
 491738:
             74 19
                                      491753 <free mem+0x3a3>
                                 je
 49173a:
             48 89 c6
                                 mov
                                        %rax,%rsi
                                      $0x4,%rsi
 49173d:
             48 c1 e6 04
                                 shl
             48 83 7c 37 18 00
                                 cmpg $0x0.0x18(\%rdi,\%rsi,1)
 491741:
 491747:
             0f 85 2e fd ff ff
                                      49147b <free mem+0xcb>
                                 ine
 49174d:
             48 83 c0 01
                                 add
                                       $0x1,%rax
                                       491735 <free_mem+0x385>
 491751:
             eb e2
                                 jmp
             48 89 54 24 08
 491753:
                                 mov
                                       %rdx,0x8(%rsp)
 491758:
             e8 f3 ec f8 ff
                                 callq 420450 <__free>
 49175d:
             48 8b 54 24 08
                                        0x8(\%rsp),\%rdx
                                 mov
 491762:
             48 c7 42 08 00 00 00 movg $0x0,0x8(%rdx)
 491769:
             00
 49176a:
             49 8b 57 08
                                        0x8(%r15),%rdx
                                 mov
 49176e:
             e9 50 ff ff ff
                                 jmpq 4916c3 <free_mem+0x313>
Disassembly of section __libc_thread_freeres_fn:
000000000491780 <arena thread freeres>:
             41 57
                                 push %r15
 491780:
 491782:
             41 56
                                       %r14
                                 push
 491784:
             41 55
                                 push
                                       %r13
 491786:
             41 54
                                 push %r12
 491788:
             55
                           push %rbp
 491789:
             53
                           push %rbx
             48 83 ec 68
 49178a:
                                 sub
                                       $0x68,%rsp
 49178e:
             64 4c 8b 2c 25 c8 ff mov
                                        %fs:0xfffffffffffc8,%r13
 491795:
             ff ff
 491797:
             64 48 8b 04 25 28 00 mov
                                        %fs:0x28,%rax
 49179e:
             00 00
             48 89 44 24 58
 4917a0:
                                        %rax,0x58(%rsp)
                                 mov
 4917a5:
             31 c0
                                       %eax,%eax
                                 xor
 4917a7:
             4d 85 ed
                                 test %r13,%r13
             0f 84 58 01 00 00
                                      491908 <arena_thread_freeres+0x188>
 4917aa:
                                 je
 4917b0:
             49 8d bd 40 02 00 00 lea
                                      0x240(%r13),%rdi
 4917b7:
             48 8d 4c 24 57
                                      0x57(%rsp), %rcx
                                 lea
             48 8b 05 15 b6 22 00 mov
                                        0x22b615(%rip),%rax
                                                                 # 6bcdd8 <__free_hook>
 4917bc:
 4917c3:
             49 8d 5d 40
                                 lea
                                      0x40(%r13),%rbx
                                                                # 6ba900 <main_arena>
 4917c7:
             4c 8d 25 32 91 22 00 lea
                                      0x229132(%rip),%r12
             64 48 c7 04 25 c8 ff movq $0x0,%fs:0xffffffffffc8
 4917ce:
             ff ff 00 00 00 00
 4917d5:
             64 c6 04 25 d0 ff ff
                                 movb $0x1,%fs:0xffffffffffd0
 4917db:
 4917e2:
             ff 01
             48 89 7c 24 08
                                        %rdi,0x8(%rsp)
 4917e4:
                                 mov
```

%rcx,0x18(%rsp)

mov

4917e9:

48 89 4c 24 18

```
4917ee:
            4c 89 6c 24 10
                                       %r13,0x10(%rsp)
                                mov
4917f3:
            4c 8b 3b
                                       (%rbx),%r15
                                mov
4917f6:
            41 bd 01 00 00 00
                                mov
                                       $0x1,%r13d
4917fc:
            4d 85 ff
                                test %r15.%r15
            0f 84 99 00 00 00
                                     49189e <arena thread freeres+0x11e>
4917ff:
                                ie
491805:
            49 8b 17
                                mov (%r15),%rdx
491808:
            48 85 c0
                                test %rax,%rax
            48 89 13
                                       %rdx,(%rbx)
49180b:
                                mov
                                     491b38 <arena_thread_freeres+0x3b8>
49180e:
            0f 85 24 03 00 00
                                ine
491814:
            49 8b 47 f8
                                mov -0x8(\%r15),\%rax
            4d 8d 47 f0
                                     -0x10(\%r15),\%r8
491818:
                                lea
            a8 02
                                test $0x2,%al
49181c:
49181e:
            0f 84 d4 01 00 00
                                     4919f8 <arena thread freeres+0x278>
                                ie
491824:
            8b 3d 6a 90 22 00
                                       0x22906a(%rip),%edi
                                                                # 6ba894 <mp_+0x34>
                                mov
            48 89 c2
                                       %rax,%rdx
49182a:
                                mov
            48 83 e2 f8
                                      $0xffffffffffff8,%rdx
49182d:
                                and
491831:
            85 ff
                          test %edi,%edi
491833:
            75 15
                                     49184a <arena thread freeres+0xca>
                                jne
            48 3b 05 34 90 22 00 cmp
491835:
                                      0x229034(%rip),%rax
                                                                # 6ba870 < mp +0x10 >
49183c:
            76.0c
                                ibe
                                     49184a <arena thread freeres+0xca>
49183e:
            48 3d 00 00 00 02
                                       $0x2000000,%rax
                                cmp
                                     491d08 <arena_thread_freeres+0x588>
491844:
            0f 86 be 04 00 00
                                jbe
49184a:
            49 8b 77 f0
                                mov
                                       -0x10(%r15),%rsi
                                       %r8,%rdi
49184e:
            4c 89 c7
                                mov
            48 8b 05 20 9a 22 00 mov
                                       0x229a20(%rip),%rax
491851:
                                                                # 6bb278 <_dl_pagesize>
491858:
            48 29 f7
                                sub
                                      %rsi,%rdi
            48 01 d6
                                      %rdx,%rsi
49185b:
                                add
                                      $0x1,%rax
49185e:
            48 83 e8 01
                                sub
                                       %rdi,%rdx
491862:
            48 89 fa
                                mov
491865:
            48 09 f2
                                     %rsi,%rdx
                                or
491868:
            48 85 d0
                                test %rdx,%rax
            0f 85 af 06 00 00
                                     491f20 <arena_thread_freeres+0x7a0>
49186b:
                                ine
491871:
            f0 ff 0d 10 90 22 00
                                lock decl 0x229010(%rip)
                                                             # 6ba888 <mp +0x28>
491878:
            48 89 f0
                                mov
                                       %rsi,%rax
            48 f7 d8
                                      %rax
49187b:
                                neg
49187e:
            f0 48 01 05 12 90 22 lock add %rax,0x229012(%rip)
                                                                  # 6ba898 <mp +0x38>
491885:
            00
            e8 d5 90 fb ff
491886:
                                calla 44a960 < munmap>
49188b:
            4c 8b 3b
                                mov
                                       (%rbx),%r15
            48 8b 05 43 b5 22 00 mov
                                       0x22b543(%rip),%rax
                                                                # 6bcdd8 <__free_hook>
49188e:
491895:
            4d 85 ff
                                test %r15,%r15
491898:
            0f 85 67 ff ff ff
                                ine
                                     491805 < arena thread freeres + 0x85>
49189e:
            48 83 c3 08
                                add
                                      $0x8,%rbx
                                      %rbx,0x8(%rsp)
4918a2:
            48 39 5c 24 08
                                cmp
4918a7:
            0f 85 46 ff ff ff
                                jne
                                     4917f3 <arena_thread_freeres+0x73>
4918ad:
            48 85 c0
                                test %rax,%rax
                                       0x10(\%rsp),\%r13
4918b0:
            4c 8b 6c 24 10
                                mov
            0f 85 1d 0b 00 00
                                     4923d8 <arena thread freeres+0xc58>
4918b5:
                                ine
            49 8b 45 f8
                                mov -0x8(%r13),%rax
4918bb:
            49 8d 5d f0
4918bf:
                                     -0x10(\%r13),\%rbx
                                lea
                                test $0x2,%al
4918c3:
            a8 02
4918c5:
            0f 84 88 0a 00 00
                                je
                                     492353 <arena_thread_freeres+0xbd3>
```

```
4918cb:
             8b 15 c3 8f 22 00
                                 mov 0x228fc3(%rip),%edx
                                                                 # 6ba894 <mp +0x34>
4918d1:
             85 d2
                                 test %edx,%edx
4918d3:
             75 28
                                 ine
                                      4918fd <arena thread freeres+0x17d>
4918d5:
             48 3b 05 94 8f 22 00 cmp
                                       0x228f94(%rip),%rax
                                                                # 6ba870 < mp +0x10 >
                                      4918fd <arena thread freeres+0x17d>
4918dc:
             76 1f
                                 ibe
4918de:
             48 3d 00 00 00 02
                                       $0x2000000,%rax
                                 cmp
4918e4:
             77 17
                                 ja
                                      4918fd <arena_thread_freeres+0x17d>
             48 83 e0 f8
                                 and $0xffffffffffff8.%rax
4918e6:
4918ea:
             48 8d 14 00
                                      (%rax,%rax,1),%rdx
                                 lea
                                                                # 6ba870 < mp +0x10 >
4918ee:
             48 89 05 7b 8f 22 00 mov
                                        %rax,0x228f7b(%rip)
             48 89 15 64 8f 22 00 mov
                                        %rdx,0x228f64(%rip)
                                                                 # 6ba860 <mp >
4918f5:
4918fc:
             90
                          nop
4918fd:
             48 89 df
                                        %rbx,%rdi
                                 mov
                                 callq 41acd0 <munmap_chunk>
491900:
             e8 cb 93 f8 ff
491905:
             0f 1f 00
                                 nopl (%rax)
             48 c7 c0 d8 ff ff ff
                                       $0xffffffffffd8,%rax
491908:
                                 mov
49190f:
             64 48 8b 10
                                 mov
                                        %fs:(%rax),%rdx
491913:
             64 48 c7 00 00 00 00 movq $0x0,%fs:(%rax)
49191a:
             00
49191b:
             48 85 d2
                                 test %rdx,%rdx
49191e:
             0f 84 aa 00 00 00
                                      4919ce <arena thread freeres+0x24e>
                                 je
491924:
             be 01 00 00 00
                                 mov
                                       $0x1,%esi
491929:
             31 c0
                                 xor
                                      %eax,%eax
                                 cmpl $0x0,0x22ff7a(%rip)
             83 3d 7a ff 22 00 00
49192b:
                                                                # 6c18ac
< libc multiple threads>
491932:
             74 0c
                                      491940 <arena thread freeres+0x1c0>
             f0 0f b1 35 d4 b4 22 lock cmpxchg %esi,0x22b4d4(%rip)
491934:
                                                                        # 6bce10
<free list lock>
49193b:
             00
49193c:
             75 0b
                                      491949 <arena_thread_freeres+0x1c9>
                                 jne
                                       491963 <arena thread freeres+0x1e3>
49193e:
             eb 23
                                 jmp
491940:
             0f b1 35 c9 b4 22 00 cmpxchg %esi,0x22b4c9(%rip)
                                                                   #6bce10 <free list lock>
491947:
                                 ie
                                      491963 <arena thread freeres+0x1e3>
491949:
             48 8d 3d c0 b4 22 00 lea
                                      0x22b4c0(%rip),%rdi
                                                               # 6bce10 <free_list_lock>
             48 81 ec 80 00 00 00 sub
                                       $0x80,%rsp
491950:
491957:
             e8 a4 a7 fb ff
                                 callq 44c100 < lll lock wait private>
49195c:
             48 81 c4 80 00 00 00 add
                                       $0x80,%rsp
491963:
             48 8b 82 80 08 00 00 mov
                                       0x880(%rdx),%rax
49196a:
             48 85 c0
                                 test %rax,%rax
                                      491d90 <arena_thread_freeres+0x610>
49196d:
             0f 84 1d 04 00 00
                                 je
491973:
             48 83 e8 01
                                       $0x1,%rax
                                 sub
491977:
             48 85 c0
                                 test %rax,%rax
49197a:
             48 89 82 80 08 00 00 mov
                                        %rax,0x880(%rdx)
                                      491998 <arena_thread_freeres+0x218>
491981:
             75 15
                                 jne
491983:
             48 8b 05 7e b4 22 00 mov
                                        0x22b47e(%rip),%rax
                                                                 # 6bce08 <free_list>
                                        %rdx,0x22b477(%rip)
49198a:
             48 89 15 77 b4 22 00 mov
                                                                 # 6bce08 <free list>
                                        %rax,0x878(%rdx)
491991:
             48 89 82 78 08 00 00 mov
             83 3d 0d ff 22 00 00 cmpl $0x0,0x22ff0d(%rip)
491998:
                                                                # 6c18ac
<__libc_multiple_threads>
49199f:
             74 0b
                                      4919ac <arena thread freeres+0x22c>
                                 ie
4919a1:
             f0 ff 0d 68 b4 22 00
                                 lock decl 0x22b468(%rip)
                                                              #6bce10 <free list lock>
                                      4919b4 <arena_thread_freeres+0x234>
4919a8:
             75 0a
                                 ine
```

```
4919aa:
            eb 22
                                      4919ce <arena thread freeres+0x24e>
4919ac:
            ff 0d 5e b4 22 00
                                 decl 0x22b45e(\%rip)
                                                          #6bce10 <free list lock>
4919b2:
            74 1a
                                 je
                                      4919ce <arena thread freeres+0x24e>
4919b4:
            48 8d 3d 55 b4 22 00 lea
                                      0x22b455(%rip),%rdi
                                                               #6bce10 <free list lock>
4919bb:
            48 81 ec 80 00 00 00 sub
                                      $0x80,%rsp
4919c2:
            e8 69 a7 fb ff
                                 callq 44c130 < lll unlock wake private>
4919c7:
            48 81 c4 80 00 00 00 add
                                      $0x80,%rsp
            48 8b 44 24 58
                                       0x58(\%rsp),\%rax
4919ce:
                                 mov
4919d3:
            64 48 33 04 25 28 00 xor
                                      %fs:0x28,%rax
            00 00
4919da:
            0f 85 9b 0c 00 00
                                      49267d <arena thread freeres+0xefd>
4919dc:
                                 ine
            48 83 c4 68
4919e2:
                                 add
                                       $0x68,%rsp
4919e6:
            5b
                                %rbx
                          pop
4919e7:
            5d
                                %rbp
                          pop
            41 5c
4919e8:
                                       %r12
                                 pop
            41 5d
                                       %r13
4919ea:
                                 pop
4919ec:
            41 5e
                                       %r14
                                 pop
4919ee:
            41 5f
                                       %r15
                                 pop
4919f0:
            с3
                          reta
4919f1:
            0f 1f 80 00 00 00 00 nopl 0x0(%rax)
4919f8:
            64 48 83 3c 25 c8 ff cmpq $0x0,%fs:0xffffffffff68
4919ff:
            ff ff 00
            0f 84 f8 03 00 00
491a02:
                                      491e00 <arena thread freeres+0x680>
                                 ie
            a8 04
                                 test $0x4,%al
491a08:
                                       %r12,%rbp
491a0a:
            4c 89 e5
                                 mov
491a0d:
            0f 85 8d 00 00 00
                                      491aa0 <arena thread freeres+0x320>
                                 ine
            49 89 c1
                                       %rax,%r9
491a13:
                                 mov
            49 83 e1 f8
                                      $0xffffffffffff8,%r9
491a16:
                                 and
                                       %r9,%rdx
491a1a:
            4c 89 ca
                                 mov
491a1d:
            48 f7 da
                                       %rdx
                                 neg
                                       %r8,%rdx
491a20:
            4c 39 c2
                                 cmp
            0f 82 b7 03 00 00
                                      491de0 < arena thread freeres + 0x660 >
491a23:
                                 jb
491a29:
            41 f6 c0 0f
                                 test $0xf,%r8b
491a2d:
            0f 85 ad 03 00 00
                                      491de0 <arena_thread_freeres+0x660>
                                 jne
                                       $0x1f,%r9
491a33:
            49 83 f9 1f
                                 cmp
491a37:
            0f 86 b3 03 00 00
                                 ibe
                                      491df0 <arena thread freeres+0x670>
491a3d:
            a8 08
                                 test $0x8,%al
491a3f:
            0f 85 ab 03 00 00
                                      491df0 < arena thread freeres + 0x670>
                                 ine
491a45:
            64 48 8b 0c 25 c8 ff
                                mov
                                       %fs:0xfffffffffffc8,%rcx
491a4c:
            ff ff
            48 85 c9
                                 test %rcx,%rcx
491a4e:
491a51:
            74 65
                                 ie
                                      491ab8 <arena_thread_freeres+0x338>
                                      -0x11(%r9), %rdx
491a53:
            49 8d 51 ef
                                 lea
                                      $0x4,%rdx
491a57:
            48 c1 ea 04
                                 shr
491a5b:
            48 3b 15 4e 8e 22 00 cmp
                                       0x228e4e(%rip),%rdx
                                                                 # 6ba8b0 <mp_+0x50>
491a62:
            73 54
                                      491ab8 < arena thread freeres + 0x338>
                                 jae
                                 movsbq (%rcx,%rdx,1),%rdi
491a64:
            48 0f be 3c 11
            48 3b 3d 50 8e 22 00 cmp
                                       0x228e50(%rip),%rdi
491a69:
                                                                # 6ba8c0 <mp_+0x60>
            48 89 fe
491a70:
                                 mov
                                       %rdi,%rsi
            73 43
                                     491ab8 <arena_thread_freeres+0x338>
491a73:
                                 iae
            48 83 fa 3f
                                       $0x3f,%rdx
491a75:
                                 cmp
                                      491f30 <arena_thread_freeres+0x7b0>
491a79:
            0f 87 b1 04 00 00
                                 ja
```

```
491a7f:
             48 8d 04 d1
                                      (%rcx,%rdx,8),%rax
                                 lea
             83 c6 01
                                       $0x1,%esi
491a83:
                                  add
491a86:
             48 8b 78 40
                                 mov
                                        0x40(%rax),%rdi
491a8a:
             49 89 3f
                                        %rdi,(%r15)
                                 mov
                                        %r15,0x40(%rax)
             4c 89 78 40
491a8d:
                                 mov
491a91:
             40 88 34 11
                                        %sil,(%rcx,%rdx,1)
                                 mov
491a95:
             e9 f1 fd ff ff
                                 jmpq 49188b <arena_thread_freeres+0x10b>
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
491a9a:
             4c 89 c2
                                        %r8,%rdx
491aa0:
                                 mov
                                       $0xffffffffc000000,%rdx
491aa3:
             48 81 e2 00 00 00 fc and
491aaa:
             48 8b 2a
                                 mov
                                        (%rdx),%rbp
             e9 61 ff ff ff
                                 impg 491a13 <arena thread freeres+0x293>
491aad:
                                 nopw 0x0(\%rax,\%rax,1)
491ab2:
             66 0f 1f 44 00 00
491ab8:
             4c 3b 0d 59 b3 22 00 cmp
                                       0x22b359(%rip),%r9
                                                                #6bce18 <global max fast>
491abf:
             0f 87 8b 00 00 00
                                      491b50 <arena_thread_freeres+0x3d0>
                                 ja
491ac5:
             4b 8d 14 08
                                 lea
                                      (%r8,%r9,1),%rdx
491ac9:
             48 8b 42 08
                                 mov
                                        0x8(%rdx),%rax
             48 83 f8 10
                                        $0x10,%rax
491acd:
                                 cmp
                                      491e88 <arena thread freeres+0x708>
491ad1:
             0f 86 b1 03 00 00
                                 ibe
491ad7:
             48 83 e0 f8
                                 and
                                       $0xffffffffffff8,%rax
             48 3b 85 88 08 00 00 cmp
491adb:
                                       0x888(%rbp),%rax
491ae2:
             0f 83 a0 03 00 00
                                 jae
                                      491e88 <arena_thread_freeres+0x708>
491ae8:
             8b 05 26 b3 22 00
                                 mov 0x22b326(%rip),%eax
                                                                 # 6bce14 <perturb byte>
                                 test %eax.%eax
491aee:
             85 c0
                                      49205d <arena thread freeres+0x8dd>
491af0:
             0f 85 67 05 00 00
                                 jne
491af6:
             41 c1 e9 04
                                 shr
                                      $0x4,%r9d
             c7 45 08 01 00 00 00 movl $0x1,0x8(%rbp)
491afa:
491b01:
             41 8d 49 fe
                                      -0x2(\%r9),\%ecx
                                 lea
                                                                # 6c18ac
491b05:
             8b 35 a1 fd 22 00
                                       0x22fda1(%rip),%esi
                                 mov
<__libc_multiple_threads>
                                      0x0(%rbp,%rcx,8),%rax
491b0b:
             48 8d 44 cd 00
                                 lea
             85 f6
                                 test %esi,%esi
491b10:
491b12:
             48 8b 50 10
                                 mov
                                        0x10(%rax),%rdx
491b16:
             0f 85 50 04 00 00
                                       491f6c <arena_thread_freeres+0x7ec>
                                 jne
491b1c:
             49 39 d0
                                        %rdx,%r8
                                 cmp
491b1f:
             0f 84 a2 04 00 00
                                 ie
                                      491fc7 < arena thread freeres + 0x847>
             49 89 17
                                        %rdx,(%r15)
491b25:
                                 mov
491b28:
             4c 89 40 10
                                 mov
                                        %r8.0x10(%rax)
491b2c:
             e9 5a fd ff ff
                                        49188b <arena_thread_freeres+0x10b>
                                 jmpq
             0f 1f 80 00 00 00 00 nopl
491b31:
                                       0x0(\%rax)
             48 8b b4 24 98 00 00 mov
                                        0x98(%rsp),%rsi
491b38:
491b3f:
             00
             4c 89 ff
491b40:
                                        %r15,%rdi
                                 mov
                           callq *%rax
491b43:
             ff d0
491b45:
             e9 41 fd ff ff
                                 jmpq 49188b <arena_thread_freeres+0x10b>
491b4a:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
491b50:
             a8 02
                                 test $0x2,%al
             0f 85 78 02 00 00
                                       491dd0 <arena thread freeres+0x650>
491b52:
                                 ine
             8b 0d 4e fd 22 00
                                        0x22fd4e(%rip),%ecx
491b58:
                                 mov
                                                                 #6c18ac
<__libc_multiple_threads>
491b5e:
             41 be 01 00 00 00
                                        $0x1,%r14d
                                 mov
491b64:
             85 c9
                                  test %ecx,%ecx
```

```
491b66:
            0f 85 2d 05 00 00
                                     492099 <arena thread freeres+0x919>
491b6c:
            48 8b 45 60
                                       0x60(%rbp),%rax
                                 mov
491b70:
            4b 8d 0c 08
                                 lea
                                     (%r8,%r9,1),%rcx
491b74:
            49 39 c0
                                 cmp
                                       %rax.%r8
            0f 84 58 05 00 00
                                     4920d5 <arena_thread_freeres+0x955>
491b77:
                                 ie
                                 testb $0x2,0x4(\%rbp)
491b7d:
            f6 45 04 02
491b81:
            0f 84 5a 05 00 00
                                     4920e1 <arena_thread_freeres+0x961>
            48 8b 41 08
                                 mov 0x8(%rcx),%rax
491b87:
            a8 01
                                 test $0x1,%al
491b8b:
                                     49210d <arena_thread_freeres+0x98d>
491b8d:
            0f 84 7a 05 00 00
                                 je
            49 89 c2
                                      %rax,%r10
491b93:
                                 mov
            49 83 e2 f8
                                      $0xfffffffffffff8,%r10
491b96:
                                 and
491b9a:
            48 83 f8 10
                                       $0x10.%rax
                                 cmp
491b9e:
            0f 86 ad 04 00 00
                                      492051 <arena thread freeres+0x8d1>
                                 ibe
            4c 3b 95 88 08 00 00 cmp
                                      0x888(%rbp),%r10
491ba4:
                                     492051 <arena thread freeres+0x8d1>
491bab:
            0f 83 a0 04 00 00
                                 jae
491bb1:
            8b 35 5d b2 22 00
                                 mov 0x22b25d(%rip),%esi
                                                                # 6bce14 <perturb_byte>
491bb7:
            85 f6
                                 test %esi,%esi
                                     492119 <arena thread freeres+0x999>
491bb9:
            0f 85 5a 05 00 00
                                 ine
491bbf:
            41 f6 47 f8 01
                                 testb $0x1,-0x8(\%r15)
491bc4:
            0f 85 86 00 00 00
                                      491c50 <arena thread freeres+0x4d0>
                                 ine
                                       -0x10(\%r15),\%rax
491bca:
            49 8b 47 f0
                                 mov
491bce:
            4929c0
                                 sub
                                      %rax,%r8
            49 01 c1
                                      %rax,%r9
491bd1:
                                 add
                                       0x8(%r8),%rsi
491bd4:
            49 8b 70 08
                                 mov
491bd8:
            48 89 f0
                                       %rsi,%rax
                                 mov
            48 83 e0 f8
                                      $0xffffffffffff8,%rax
491bdb:
                                 and
491bdf:
            49 3b 04 00
                                       (%r8,%rax,1),%rax
                                 cmp
            0f 85 34 07 00 00
                                      49231d <arena_thread_freeres+0xb9d>
491be3:
                                 ine
491be9:
            49 8b 40 10
                                       0x10(\%r8),\%rax
                                 mov
491bed:
            49 8b 50 18
                                       0x18(%r8),%rdx
                                 mov
            4c 3b 40 18
                                       0x18(%rax),%r8
491bf1:
                                 cmp
491bf5:
            0f 85 06 05 00 00
                                ine
                                      492101 <arena_thread_freeres+0x981>
491bfb:
            4c 3b 42 10
                                       0x10(%rdx),%r8
                                 cmp
                                     492101 <arena thread freeres+0x981>
491bff:
            0f 85 fc 04 00 00
                                 ine
491c05:
            48 81 fe ff 03 00 00
                                cmp
                                       $0x3ff,%rsi
            48 89 50 18
                                       %rdx,0x18(%rax)
491c0c:
                                 mov
                                       %rax.0x10(%rdx)
491c10:
            48 89 42 10
                                 mov
                                      491c50 <arena thread freeres+0x4d0>
491c14:
            76 3a
                                 ibe
            49 8b 50 20
491c16:
                                       0x20(\%r8),\%rdx
                                 mov
            48 85 d2
                                 test %rdx,%rdx
491c1a:
491c1d:
            74 31
                                     491c50 <arena_thread_freeres+0x4d0>
                                 ie
                                       0x28(%rdx),%r8
491c1f:
            4c 3b 42 28
                                 cmp
                                     4924cb <arena_thread_freeres+0xd4b>
491c23:
            0f 85 a2 08 00 00
                                 jne
491c29:
            49 8b 70 28
                                 mov
                                       0x28(%r8),%rsi
491c2d:
            4c 3b 46 20
                                       0x20(%rsi),%r8
                                 cmp
                                      4924cb <arena_thread_freeres+0xd4b>
491c31:
            0f 85 94 08 00 00
                                 ine
            48 83 78 20 00
                                 cmpq $0x0,0x20(%rax)
491c37:
            0f 84 f3 09 00 00
                                     492635 <arena_thread_freeres+0xeb5>
491c3c:
            48 89 72 28
491c42:
                                       %rsi,0x28(%rdx)
                                 mov
491c46:
            49 8b 40 28
                                       0x28(%r8),%rax
                                 mov
491c4a:
            48 89 50 20
                                       %rdx,0x20(%rax)
                                 mov
```

```
xchg %ax,%ax
491c4e:
             66 90
491c50:
             48 3b 4d 60
                                        0x60(%rbp),%rcx
                                 cmp
                                      491fd3 <arena thread freeres+0x853>
491c54:
             0f 84 79 03 00 00
                                 je
491c5a:
             42 f6 44 11 08 01
                                 testb $0x1,0x8(%rcx,%r10,1)
491c60:
             48 8b 41 08
                                        0x8(\%rcx),\%rax
                                 mov
491c64:
             0f 84 c6 01 00 00
                                      491e30 <arena thread freeres+0x6b0>
                                 je
491c6a:
             48 83 e0 fe
                                 and
                                       $0xfffffffffffe,%rax
             48 89 41 08
                                        %rax,0x8(%rcx)
491c6e:
                                 mov
             48 8b 45 70
                                        0x70(%rbp),%rax
491c72:
                                 mov
491c76:
             48 8d 55 60
                                      0x60(%rbp), %rdx
                                 lea
                                        0x18(%rax),%rdx
491c7a:
             48 3b 50 18
                                 cmp
                                       492389 <arena thread freeres+0xc09>
             0f 85 05 07 00 00
491c7e:
                                 ine
                                        $0x3ff.%r9
491c84:
             49 81 f9 ff 03 00 00
                                 cmp
491c8b:
             49 89 40 10
                                 mov
                                        %rax,0x10(%r8)
             49 89 50 18
491c8f:
                                        %rdx,0x18(%r8)
                                 mov
                                 jbe 491ca5 <arena thread freeres+0x525>
491c93:
             76 10
491c95:
             49 c7 40 20 00 00 00 movq $0x0,0x20(%r8)
491c9c:
             00
             49 c7 40 28 00 00 00 movg $0x0,0x28(%r8)
491c9d:
491ca4:
             00
491ca5:
             4c 89 45 70
                                        %r8,0x70(%rbp)
                                 mov
491ca9:
             4c 89 40 18
                                 mov
                                        %r8,0x18(%rax)
491cad:
             4c 89 c8
                                        %r9,%rax
                                 mov
             48 83 c8 01
                                      $0x1,%rax
491cb0:
                                 or
                                        %rax,0x8(%r8)
491cb4:
             49 89 40 08
                                 mov
491cb8:
             4f 89 0c 08
                                        %r9,(%r8,%r9,1)
                                 mov
             49 81 f9 ff ff 00 00
                                        $0xffff,%r9
491cbc:
                                 cmp
                                      491fea <arena thread freeres+0x86a>
491cc3:
             0f 87 21 03 00 00
                                 ja
                                 test %r14d,%r14d
491cc9:
             45 85 f6
491ccc:
             0f 85 b9 fb ff ff
                                      49188b <arena_thread_freeres+0x10b>
                                 jne
             83 3d d3 fb 22 00 00 cmpl $0x0,0x22fbd3(%rip)
491cd2:
                                                                # 6c18ac
<__libc_multiple_threads>
491cd9:
             74 08
                                 je
                                      491ce3 <arena thread freeres+0x563>
491cdb:
             f0 ff 4d 00
                                 lock decl 0x0(%rbp)
                                      491ce8 <arena_thread_freeres+0x568>
             75 07
491cdf:
                                 ine
491ce1:
             eb 1c
                                 jmp
                                       491cff <arena thread freeres+0x57f>
             ff 4d 00
                                 decl 0x0(%rbp)
491ce3:
             74 17
                                      491cff <arena thread freeres+0x57f>
491ce6:
                                 ie
491ce8:
             48 8d 7d 00
                                 lea
                                      0x0(%rbp), %rdi
             48 81 ec 80 00 00 00 sub
491cec:
                                       $0x80,%rsp
             e8 38 a4 fb ff
                                 callq 44c130 <__lll_unlock_wake_private>
491cf3:
491cf8:
             48 81 c4 80 00 00 00 add
                                       $0x80,%rsp
                                 jmpg 49188b <arena thread freeres+0x10b>
491cff:
             e9 87 fb ff ff
             0f 1f 40 00
                                 nopl 0x0(\%rax)
491d04:
491d08:
             48 8d 04 12
                                 lea
                                      (%rdx,%rdx,1),%rax
491d0c:
             48 89 15 5d 8b 22 00 mov
                                        %rdx,0x228b5d(%rip)
                                                                 # 6ba870 <mp +0x10>
491d13:
             48 89 05 46 8b 22 00 mov
                                        %rax,0x228b46(%rip)
                                                                 # 6ba860 <mp >
491d1a:
             90
                           nop
             49 8b 57 f8
                                        -0x8(\%r15),\%rdx
491d1b:
                                 mov
             f6 c2 02
                                 test $0x2,%dl
491d1f:
             0f 85 7d 09 00 00
                                       4926a5 < arena thread freeres + 0xf25>
491d22:
                                 ine
491d28:
             48 8b 15 b9 94 22 00 mov
                                        0x2294b9(%rip),%rdx
                                                                 # 6bb1e8 <__progname>
```

```
491d2f:
            48 8d 05 f7 0d 00 00 lea 0xdf7(%rip),%rax
                                                         # 492b2d
< PRETTY FUNCTION .10913+0x5d>
491d36:
            48 8d 0d 38 3e 01 00 lea 0x13e38(%rip),%rcx
                                                           # 4a5b75
<conversion rate+0x11d>
491d3d:
            48 8d 35 0f 16 00 00 lea 0x160f(%rip),%rsi
                                                         # 493353
< PRETTY FUNCTION .10520+0xb3>
491d44:
            41 b9 0f 0b 00 00
                               mov $0xb0f,%r9d
491d4a:
            80 3a 00
                                cmpb $0x0,(%rdx)
                                cmovne %rax,%rcx
491d4d:
            48 0f 45 c8
491d51:
            48 83 ec 08
                                sub
                                     $0x8,%rsp
                         push %rsi
491d55:
            56
491d56:
            50
                         push %rax
            48 8d 05 12 25 00 00 lea 0x2512(%rip),%rax
491d57:
                                                          # 494270
< PRETTY FUNCTION .12012>
491d5e:
            50
                         push %rax
            4c 8d 05 a5 15 00 00 lea 0x15a5(%rip),%r8
491d5f:
                                                         # 49330b
< PRETTY FUNCTION .10520+0x6b>
491d66:
            48 8d 35 f3 1b 00 00 lea 0x1bf3(%rip),%rsi
                                                         # 493960
< PRETTY FUNCTION .12394+0x375>
491d6d:
            31 ff
                         xor %edi,%edi
                                     %eax,%eax
491d6f:
            31 c0
                                xor
                                callq 40fe20 <__fxprintf>
491d71:
            e8 aa e0 f7 ff
491d76:
            48 8b 3d 9b 8a 22 00 mov
                                     0x228a9b(%rip),%rdi
                                                             # 6ba818 < IO stderr>
            48 83 c4 20
                                add $0x20,%rsp
491d7d:
            e8 3a e6 f7 ff
                                callq 4103c0 < IO fflush>
491d81:
491d86:
            e8 05 c3 f7 ff
                                callq 40e090 <abort>
491d8b:
            0f 1f 44 00 00
                                nopl 0x0(\%rax,\%rax,1)
            48 8b 15 51 94 22 00 mov
                                     0x229451(%rip),%rdx
                                                              #6bb1e8 < progname>
491d90:
            48 8d 05 8f 0d 00 00 lea 0xd8f(%rip),%rax
                                                         # 492b2d
491d97:
<__PRETTY_FUNCTION___.10913+0x5d>
            48 8d 0d d0 3d 01 00 lea 0x13dd0(%rip),%rcx
491d9e:
                                                           # 4a5b75
<conversion_rate+0x11d>
491da5:
            48 8d 35 7f 17 00 00 lea 0x177f(%rip),%rsi
                                                         # 49352b
<__PRETTY_FUNCTION___.10520+0x28b>
            41 b9 c0 03 00 00
                                mov
                                     $0x3c0,%r9d
491dac:
491db2:
            4c 8d 05 5b 15 00 00 lea
                                    0x155b(%rip),%r8
                                                         # 493314
<__PRETTY_FUNCTION__.10520+0x74>
            80 3a 00
                                cmpb $0x0,(%rdx)
491db9:
            48 0f 45 c8
                                cmovne %rax,%rcx
491dbc:
                                     $0x8,%rsp
            48 83 ec 08
491dc0:
                                sub
                         push %rsi
491dc4:
            56
491dc5:
            50
                         push %rax
            48 8d 05 73 25 00 00 lea 0x2573(%rip),%rax
491dc6:
                                                          # 494340
<__PRETTY_FUNCTION__.11819>
491dcd:
            50
                         push %rax
            eb 96
491dce:
                               jmp
                                     491d66 <arena thread freeres+0x5e6>
            4c 89 c7
                                mov %r8,%rdi
491dd0:
            e8 f8 8e f8 ff
                                callq 41acd0 < munmap chunk>
491dd3:
491dd8:
            e9 ae fa ff ff
                               jmpq 49188b <arena_thread_freeres+0x10b>
            0f 1f 00
                               nopl (%rax)
491ddd:
            48 8d 3d b4 15 00 00 lea 0x15b4(%rip),%rdi
                                                          # 49339b
491de0:
<__PRETTY_FUNCTION___.10520+0xfb>
```

```
491de7:
             e8 e4 77 f8 ff
                                 callq 4195d0 <malloc printerr>
491dec:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
491df0:
             48 8d 3d bc 15 00 00 lea 0x15bc(%rip),%rdi
                                                             # 4933b3
< PRETTY FUNCTION _.10520+0x113>
491df7:
             e8 d4 77 f8 ff
                                 callg 4195d0 <malloc printerr>
                                 nopl 0x0(\%rax)
491dfc:
             0f 1f 40 00
491e00:
             64 80 3c 25 d0 ff ff
                                 cmpb $0x0,%fs:0xffffffffffd0
             ff 00
491e07:
491e09:
             0f 85 f9 fb ff ff
                                      491a08 <arena thread freeres+0x288>
                                 ine
491e0f:
             4c 89 44 24 20
                                 mov
                                        %r8,0x20(%rsp)
                                 callq 41efc0 <tcache init.part.4>
491e14:
             e8 a7 d1 f8 ff
             49 8b 47 f8
                                        -0x8(\%r15),\%rax
491e19:
                                 mov
                                        0x20(\%rsp),\%r8
491e1d:
             4c 8b 44 24 20
                                 mov
491e22:
             e9 e1 fb ff ff
                                 jmpq 491a08 <arena_thread_freeres+0x288>
             66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
491e27:
             00 00
491e2e:
491e30:
             48 89 c2
                                 mov
                                        %rax,%rdx
491e33:
             48 83 e2 f8
                                       $0xffffffffffff8,%rdx
                                 and
                                       (%rcx,%rdx,1),%rdx
491e37:
             48 3b 14 11
                                 cmp
491e3b:
             0f 85 dc 04 00 00
                                 jne 49231d <arena_thread_freeres+0xb9d>
491e41:
             48 8b 51 10
                                        0x10(\%rcx),\%rdx
                                 mov
                                        0x18(%rcx),%rsi
491e45:
             48 8b 71 18
                                 mov
491e49:
             48 3b 4a 18
                                       0x18(%rdx),%rcx
                                 cmp
             0f 85 ae 02 00 00
                                      492101 <arena thread freeres+0x981>
491e4d:
                                 ine
                                        0x10(%rsi),%rcx
491e53:
             48 3b 4e 10
                                 cmp
491e57:
             0f 85 a4 02 00 00
                                 ine
                                      492101 <arena thread freeres+0x981>
             48 3d ff 03 00 00
                                        $0x3ff,%rax
491e5d:
                                 cmp
             48 89 72 18
                                        %rsi,0x18(%rdx)
491e63:
                                 mov
             48 89 56 10
                                        %rdx,0x10(%rsi)
491e67:
                                 mov
491e6b:
             76 0d
                                 jbe 491e7a <arena_thread_freeres+0x6fa>
                                 mov 0x20(%rcx),%rax
491e6d:
             48 8b 41 20
             48 85 c0
                                 test %rax,%rax
491e71:
491e74:
             0f 85 b3 05 00 00
                                 ine
                                      49242d <arena thread freeres+0xcad>
491e7a:
             4d 01 d1
                                 add %r10,%r9
             e9 f0 fd ff ff
                                 impq 491c72 <arena_thread_freeres+0x4f2>
491e7d:
491e82:
             66 0f 1f 44 00 00
                                 nopw 0x0(\%rax,\%rax,1)
                                        %r13d,%esi
491e88:
             44 89 ee
                                 mov
                                 xor %eax.%eax
491e8b:
             31 c0
491e8d:
             83 3d 18 fa 22 00 00 cmpl $0x0,0x22fa18(%rip)
                                                                # 6c18ac
<__libc_multiple_threads>
491e94:
             74 09
                                      491e9f <arena thread freeres+0x71f>
491e96:
             f0 0f b1 75 00
                                 lock cmpxchg %esi,0x0(%rbp)
                                      491ea5 <arena thread freeres+0x725>
491e9b:
             75 08
                                 ine
                                       491ebc <arena_thread_freeres+0x73c>
491e9d:
             eb 1d
                                 jmp
491e9f:
             0f b1 75 00
                                 cmpxchg %esi,0x0(%rbp)
                                      491ebc <arena thread freeres+0x73c>
491ea3:
             74 17
                                 je
             48 8d 7d 00
                                      0x0(%rbp), %rdi
491ea5:
                                 lea
             48 81 ec 80 00 00 00 sub
                                       $0x80,%rsp
491ea9:
             e8 4b a2 fb ff
                                 callq 44c100 < __lll_lock_wait_private>
491eb0:
             48 81 c4 80 00 00 00 add
                                       $0x80,%rsp
491eb5:
491ebc:
             48 8b 42 08
                                        0x8(%rdx),%rax
                                 mov
             ba 01 00 00 00
                                        $0x1,%edx
491ec0:
                                 mov
```

```
491ec5:
             48 83 f8 10
                                       $0x10.%rax
                                 cmp
             76 10
                                      491edb <arena thread freeres+0x75b>
491ec9:
                                 ibe
491ecb:
             31 d2
                                 xor
                                      %edx,%edx
491ecd:
             48 83 e0 f8
                                 and
                                      $0xffffffffffff8,%rax
             48 3b 85 88 08 00 00 cmp
                                      0x888(%rbp),%rax
491ed1:
491ed8:
             0f 93 c2
                                 setae %dl
491edb:
             83 3d ca f9 22 00 00 cmpl $0x0,0x22f9ca(%rip)
                                                               # 6c18ac
< libc multiple threads>
491ee2:
             74 08
                                     491eec <arena thread freeres+0x76c>
                                 ie
             f0 ff 4d 00
491ee4:
                                 lock decl 0x0(%rbp)
                                 jne 491ef1 <arena_thread_freeres+0x771>
491ee8:
             75 07
                                      491f08 <arena thread freeres+0x788>
             eb 1c
491eea:
                                 imp
491eec:
             ff 4d 00
                                 decl 0x0(%rbp)
491eef:
             74 17
                                 ie
                                     491f08 <arena thread freeres+0x788>
             48 8d 7d 00
491ef1:
                                 lea
                                     0x0(%rbp),%rdi
             48 81 ec 80 00 00 00 sub
                                      $0x80,%rsp
491ef5:
491efc:
             e8 2f a2 fb ff
                                 callq 44c130 < __lll_unlock_wake_private>
491f01:
             48 81 c4 80 00 00 00 add $0x80,%rsp
491f08:
             85 d2
                                 test %edx,%edx
491f0a:
             0f 84 d8 fb ff ff
                                 ie
                                     491ae8 <arena_thread_freeres+0x368>
             48 8d 3d f1 1a 00 00 lea
                                     0x1af1(%rip),%rdi
                                                           # 493a08
491f10:
<__PRETTY_FUNCTION__.12394+0x41d>
491f17:
             e8 b4 76 f8 ff
                                 callq 4195d0 <malloc printerr>
             0f 1f 40 00
                                 nopl 0x0(\%rax)
491f1c:
             48 8d 3d 89 1a 00 00 lea 0x1a89(%rip),%rdi
491f20:
                                                            # 4939b0
< PRETTY FUNCTION .12394+0x3c5>
491f27:
             e8 a4 76 f8 ff
                                 callq 4195d0 <malloc printerr>
491f2c:
             0f 1f 40 00
                                 nopl 0x0(\%rax)
             48 8b 15 b1 92 22 00 mov
                                       0x2292b1(%rip),%rdx
491f30:
                                                                # 6bb1e8 <__progname>
491f37:
             48 8d 05 ef 0b 00 00 lea
                                     0xbef(%rip),%rax
                                                           # 492b2d
< PRETTY FUNCTION .10913+0x5d>
             48 8d 0d 30 3c 01 00 lea 0x13c30(%rip),%rcx
491f3e:
                                                             # 4a5b75
<conversion rate+0x11d>
491f45:
             48 8d 3d 7c 14 00 00 lea
                                      0x147c(%rip),%rdi
                                                            # 4933c8
<__PRETTY_FUNCTION___.10520+0x128>
491f4c:
             41 b9 71 0b 00 00
                                 mov $0xb71,%r9d
491f52:
             80 3a 00
                                 cmpb $0x0,(%rdx)
             48 0f 45 c8
                                 cmovne %rax.%rcx
491f55:
491f59:
             48 83 ec 08
                                 sub
                                      $0x8,%rsp
                          push %rdi
491f5d:
             57
491f5e:
             50
                          push %rax
             48 8d 05 5a 23 00 00 lea
                                     0x235a(%rip),%rax
491f5f:
                                                            # 4942c0
< PRETTY FUNCTION .12044>
491f66:
             50
                          push %rax
491f67:
             e9 f3 fd ff ff
                                 impq 491d5f <arena_thread_freeres+0x5df>
491f6c:
             49 39 d0
                                 cmp
                                       %rdx,%r8
491f6f:
             74 56
                                 je
                                     491fc7 <arena_thread_freeres+0x847>
             48 8d 74 cd 10
                                     0x10(%rbp,%rcx,8),%rsi
491f71:
                                 lea
491f76:
             49 89 17
                                       %rdx,(%r15)
                                 mov
491f79:
             48 89 d0
                                       %rdx,%rax
                                 mov
             64 83 3c 25 18 00 00 cmpl $0x0,%fs:0x18
491f7c:
             00 00
491f83:
```

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491f85:
             74 01
                                     491f88 <arena thread freeres+0x808>
491f87:
             f0 4c 0f b1 06
                                 lock cmpxchg %r8,(%rsi)
491f8c:
             48 39 d0
                                 cmp
                                       %rdx,%rax
491f8f:
             48 89 c1
                                 mov
                                       %rax,%rcx
491f92:
             75 2e
                                 ine 491fc2 <arena thread freeres+0x842>
491f94:
             e9 f2 f8 ff ff
                                 impg 49188b <arena thread freeres+0x10b>
491f99:
             0f 1f 80 00 00 00 00 nopl 0x0(%rax)
             49 89 0f
                                       %rcx,(%r15)
491fa0:
                                 mov
491fa3:
             48 89 c8
                                       %rcx,%rax
                                 mov
             64 83 3c 25 18 00 00 cmpl $0x0,%fs:0x18
491fa6:
491fad:
             00 00
491faf:
             74 01
                                     491fb2 <arena thread freeres+0x832>
             f0 4c 0f b1 06
491fb1:
                                 lock cmpxchg %r8,(%rsi)
491fb6:
             48 39 c1
                                       %rax,%rcx
                                     49188b <arena_thread_freeres+0x10b>
491fb9:
             0f 84 cc f8 ff ff
                                 je
                                       %rax,%rcx
491fbf:
             48 89 c1
                                 mov
491fc2:
             49 39 c8
                                 cmp
                                       %rcx,%r8
491fc5:
             75 d9
                                      491fa0 <arena thread freeres+0x820>
                                 ine
491fc7:
             48 8d 3d 62 1a 00 00 lea
                                      0x1a62(%rip),%rdi
                                                            # 493a30
<__PRETTY_FUNCTION___.12394+0x445>
491fce:
             e8 fd 75 f8 ff
                                 callq 4195d0 <malloc printerr>
491fd3:
             4d 01 d1
                                 add
                                      %r10,%r9
491fd6:
             4c 89 c8
                                 mov
                                       %r9,%rax
             48 83 c8 01
                                      $0x1,%rax
491fd9:
                                 or
                                       %rax,0x8(%r8)
491fdd:
             49 89 40 08
                                 mov
491fe1:
             4c 89 45 60
                                       %r8,0x60(%rbp)
                                 mov
                                 impg 491cbc <arena thread freeres+0x53c>
             e9 d2 fc ff ff
491fe5:
             8b 45 08
491fea:
                                       0x8(\%rbp),\%eax
                                 mov
                                 test %eax,%eax
491fed:
             85 c0
491fef:
             0f 85 1b 03 00 00
                                      492310 <arena_thread_freeres+0xb90>
                                 jne
491ff5:
             4c 39 e5
                                       %r12,%rbp
                                 cmp
             0f 84 2b 03 00 00
                                     492329 <arena_thread_freeres+0xba9>
491ff8:
                                 ie
491ffe:
             4c 8b 55 60
                                 mov
                                       0x60(%rbp),%r10
492002:
             4d 89 d3
                                       %r10,%r11
                                 mov
             49 81 e3 00 00 00 fc and
                                      $0xffffffffc000000,%r11
492005:
49200c:
             49 3b 2b
                                 cmp
                                       (%r11),%rbp
                                     492152 <arena_thread_freeres+0x9d2>
49200f:
             0f 84 3d 01 00 00
                                 je
                                       0x2291cc(%rip),%rdx
492015:
             48 8b 15 cc 91 22 00 mov
                                                                #6bb1e8 < progname>
                                                           # 492b2d
49201c:
             48 8d 05 0a 0b 00 00 lea
                                      0xb0a(%rip),%rax
<__PRETTY_FUNCTION__.10913+0x5d>
             48 8d 0d 4b 3b 01 00 lea
                                     0x13b4b(%rip),%rcx
492023:
                                                              # 4a5b75
<conversion rate+0x11d>
49202a:
             48 8d 3d cd 13 00 00 lea
                                      0x13cd(%rip),%rdi
                                                            # 4933fe
<__PRETTY_FUNCTION__.10520+0x15e>
492031:
             41 b9 17 11 00 00
                                 mov
                                       $0x1117,%r9d
492037:
             80 3a 00
                                 cmpb $0x0,(%rdx)
49203a:
             48 0f 45 c8
                                 cmovne %rax,%rcx
             48 83 ec 08
                                      $0x8,%rsp
49203e:
                                 sub
                          push %rdi
492042:
             57
                          push %rax
492043:
             50
             48 8d 05 45 22 00 00 lea
                                     0x2245(%rip),%rax
                                                             # 494290
492044:
<__PRETTY_FUNCTION__.12320>
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49204b:
             50
                          push %rax
                                 impg 491d5f <arena_thread_freeres+0x5df>
49204c:
             e9 0e fd ff ff
492051:
             48 8d 3d 68 1a 00 00 lea
                                     0x1a68(%rip),%rdi
                                                            # 493ac0
<__PRETTY_FUNCTION__.12394+0x4d5>
                                 callq 4195d0 <malloc printerr>
492058:
             e8 73 75 f8 ff
             48 b9 01 01 01 01 01 movabs $0x101010101010101,%rcx
49205d:
492064:
             01 01 01
492067:
             0f b6 c0
                                 movzbl %al.%eax
49206a:
             49 8d 51 f0
                                 lea -0x10(\%r9),\%rdx
49206e:
             48 0f af c1
                                 imul %rcx,%rax
             49 8d 7f 08
492072:
                                 lea
                                     0x8(%r15),%rdi
             89 d1
                                       %edx.%ecx
492076:
                                 mov
492078:
             48 83 e7 f8
                                      $0xffffffffffff8,%rdi
                                 and
49207c:
             49 89 07
                                       %rax,(%r15)
                                 mov
49207f:
             49 89 44 0f f8
                                       %rax,-0x8(%r15,%rcx,1)
                                 mov
492084:
             4c 89 f9
                                       %r15.%rcx
                                 mov
492087:
             48 29 f9
                                 sub
                                      %rdi,%rcx
49208a:
                                      %ecx,%edx
             01 ca
                                 add
49208c:
             c1 ea 03
                                      $0x3,%edx
                                 shr
49208f:
             89 d1
                                 mov
                                       %edx,%ecx
492091:
             f3 48 ab
                                 rep stos %rax,%es:(%rdi)
                                 jmpq 491af6 <arena_thread_freeres+0x376>
492094:
             e9 5d fa ff ff
492099:
             44 89 ee
                                 mov
                                       %r13d.%esi
                                 xor
                                      %eax,%eax
49209c:
             31 c0
             83 3d 07 f8 22 00 00 cmpl $0x0,0x22f807(%rip)
49209e:
                                                                # 6c18ac
< libc multiple threads>
4920a5:
             74 09
                                     4920b0 <arena thread freeres+0x930>
4920a7:
             f0 0f b1 75 00
                                 lock cmpxchg %esi,0x0(%rbp)
4920ac:
                                     4920b6 <arena_thread_freeres+0x936>
             75 08
4920ae:
             eb 1d
                                 jmp 4920cd <arena_thread_freeres+0x94d>
             0f b1 75 00
4920b0:
                                 cmpxchg %esi,0x0(%rbp)
             74 17
                                     4920cd <arena thread freeres+0x94d>
4920b4:
                                 je
4920b6:
             48 8d 7d 00
                                 lea
                                     0x0(%rbp),%rdi
             48 81 ec 80 00 00 00 sub
4920ba:
                                      $0x80,%rsp
                                 callq 44c100 <__lll_lock_wait_private>
4920c1:
             e8 3a a0 fb ff
4920c6:
             48 81 c4 80 00 00 00 add
                                      $0x80,%rsp
4920cd:
             45 31 f6
                                      %r14d,%r14d
4920d0:
             e9 97 fa ff ff
                                 impg 491b6c <arena thread freeres+0x3ec>
             48 8d 3d 7c 19 00 00 lea
4920d5:
                                     0x197c(%rip),%rdi
                                                            # 493a58
<__PRETTY_FUNCTION__.12394+0x46d>
4920dc:
             e8 ef 74 f8 ff
                                 callq 4195d0 <malloc_printerr>
4920e1:
             48 8b 50 08
                                 mov
                                       0x8(\%rax),\%rdx
                                      $0xfffffffffff8,%rdx
4920e5:
             48 83 e2 f8
                                 and
             48 01 d0
4920e9:
                                 add
                                      %rdx,%rax
4920ec:
             48 39 c1
                                 cmp
                                       %rax,%rcx
4920ef:
             0f 82 92 fa ff ff
                                 jb
                                      491b87 < arena thread freeres + 0x407>
             48 8d 3d 7c 19 00 00 lea
4920f5:
                                      0x197c(%rip),%rdi
                                                            # 493a78
<__PRETTY_FUNCTION__.12394+0x48d>
                                 callq 4195d0 <malloc_printerr>
             e8 cf 74 f8 ff
4920fc:
             48 8d 3d c5 11 00 00 lea 0x11c5(%rip),%rdi
492101:
                                                            # 4932cd
< PRETTY FUNCTION .10520+0x2d>
492108:
             e8 c3 74 f8 ff
                                 callq 4195d0 <malloc_printerr>
```

```
49210d:
             48 8d 3d 84 19 00 00 lea 0x1984(%rip),%rdi
                                                             # 493a98
< PRETTY FUNCTION .12394+0x4ad>
492114:
             e8 b7 74 f8 ff
                                 callq 4195d0 <malloc printerr>
492119:
             49 8d 51 f0
                                 lea
                                      -0x10(\%r9),%rdx
49211d:
             4c 89 ff
                                        %r15,%rdi
                                 mov
492120:
             4c 89 54 24 38
                                        %r10,0x38(%rsp)
                                 mov
492125:
             48 89 4c 24 30
                                        %rcx,0x30(%rsp)
                                 mov
             4c 89 44 24 28
                                        %r8,0x28(%rsp)
49212a:
                                 mov
49212f:
             4c 89 4c 24 20
                                        %r9,0x20(%rsp)
                                 mov
492134:
             e8 4f e3 f6 ff
                                 callq 400488 < .plt + 0x70 >
492139:
             4c 8b 54 24 38
                                 mov
                                        0x38(\%rsp),\%r10
                                        0x30(\%rsp),\%rcx
49213e:
             48 8b 4c 24 30
                                 mov
492143:
             4c 8b 44 24 28
                                        0x28(\%rsp),\%r8
                                 mov
492148:
             4c 8b 4c 24 20
                                        0x20(\%rsp),\%r9
                                 mov
                                 jmpq 491bbf <arena_thread_freeres+0x43f>
49214d:
             e9 6d fa ff ff
492152:
             4d 8d 4b 20
                                 lea
                                      0x20(%r11),%r9
492156:
             48 8b 0d 0b 87 22 00 mov
                                        0x22870b(%rip),%rcx
                                                                 # 6ba868 <mp +0x8>
49215d:
             48 8b 15 14 91 22 00 mov
                                        0x229114(%rip),%rdx
                                                                 # 6bb278 <_dl_pagesize>
492164:
             4d 39 d1
                                        %r10.%r9
                                  cmp
492167:
             0f 85 fe 03 00 00
                                 ine
                                      49256b <arena thread freeres+0xdeb>
49216d:
             4d 8b 43 08
                                        0x8(%r11),%r8
                                 mov
492171:
             49 8b 78 10
                                 mov
                                        0x10(%r8),%rdi
492175:
             48 8d 47 f0
                                 lea
                                      -0x10(%rdi),%rax
             49 8d 34 00
                                      (%r8,%rax,1),%rsi
492179:
                                 lea
49217d:
             83 e6 0f
                                  and
                                       $0xf,%esi
492180:
             48 29 f0
                                       %rsi,%rax
                                 sub
             4c 01 c0
                                       %r8,%rax
492183:
                                  add
492186:
             48 83 78 08 01
                                 cmpg $0x1,0x8(\%rax)
                                       492395 <arena_thread_freeres+0xc15>
49218b:
             0f 85 04 02 00 00
                                 ine
492191:
             4c 8d 54 11 20
                                 lea
                                      0x20(%rcx,%rdx,1),%r10
492196:
             48 89 5c 24 20
                                 mov
                                        %rbx,0x20(%rsp)
             4c 89 54 24 28
                                        %r10,0x28(%rsp)
49219b:
                                 mov
4921a0:
             4c 8d 52 ff
                                 lea
                                      -0x1(%rdx), %r10
4921a4:
             4c 89 54 24 30
                                        %r10,0x30(%rsp)
                                 mov
4921a9:
             48 2b 00
                                 sub
                                       (%rax),%rax
4921ac:
             49 89 c7
                                 mov
                                        %rax,%r15
4921af:
             48 8b 40 08
                                        0x8(%rax),%rax
                                 mov
4921b3:
             48 89 c3
                                        %rax,%rbx
                                 mov
4921b6:
             48 83 e3 f8
                                       $0xffffffffffff8,%rbx
                                  and
4921ba:
             48 01 de
                                 add
                                       %rbx,%rsi
4921bd:
             48 8d 5e 0f
                                      0xf(%rsi),%rbx
                                 lea
4921c1:
             48 83 fb 3e
                                 cmp
                                        $0x3e,%rbx
4921c5:
             0f 87 1f 02 00 00
                                 ja
                                      4923ea <arena thread freeres+0xc6a>
4921cb:
             a8 01
                                 test $0x1,%al
4921cd:
             48 8d 5e 10
                                 lea
                                      0x10(%rsi),%rbx
4921d1:
             75 03
                                      4921d6 <arena thread freeres+0xa56>
                                 ine
4921d3:
             49 03 1f
                                 add
                                       (%r15),%rbx
4921d6:
             48 8d 43 ff
                                 lea
                                      -0x1(\%rbx),\%rax
                                        $0x3fffffe,%rax
4921da:
             48 3d fe ff ff 03
                                 cmp
             0f 87 7b 02 00 00
                                      492461 <arena thread freeres+0xce1>
4921e0:
                                 ia
             b8 00 00 00 04
                                        $0x4000000,%eax
4921e6:
                                 mov
             48 29 f8
                                       %rdi,%rax
4921eb:
                                  sub
```

```
4921ee:
             48 01 d8
                                 add
                                      %rbx.%rax
4921f1:
             48 3b 44 24 28
                                       0x28(%rsp),%rax
                                 cmp
                                      492563 <arena thread freeres+0xde3>
4921f6:
             0f 82 67 03 00 00
                                 jb
4921fc:
             49 8b 43 10
                                       0x10(%r11),%rax
                                 mov
492200:
             48 29 85 88 08 00 00 sub
                                      %rax,0x888(%rbp)
492207:
             90
                          nop
492208:
             49 8d 83 00 00 00 04 lea
                                      0x4000000(%r11),%rax
             48 39 05 e2 ab 22 00 cmp
                                       %rax,0x22abe2(%rip)
                                                                #6bcdf8
49220f:
<aligned heap area>
492216:
             75 0b
                                      492223 <arena thread freeres+0xaa3>
492218:
             48 c7 05 d5 ab 22 00 movg $0x0,0x22abd5(%rip)
                                                                #6bcdf8
<aligned heap area>
             00 00 00 00
49221f:
492223:
             be 00 00 00 04
                                       $0x4000000,%esi
                                 mov
492228:
             4c 89 df
                                       %r11,%rdi
                                 mov
                                       %rdx,0x48(%rsp)
49222b:
             48 89 54 24 48
                                 mov
492230:
             48 89 4c 24 40
                                 mov
                                       %rcx,0x40(%rsp)
492235:
             4c 89 44 24 38
                                       %r8,0x38(%rsp)
                                 mov
                                 callq 44a960 < munmap>
49223a:
             e8 21 87 fb ff
49223f:
             41 f6 47 08 01
                                 testb $0x1,0x8(\%r15)
492244:
             4c 8b 44 24 38
                                       0x38(\%rsp),\%r8
                                 mov
492249:
             48 8b 4c 24 40
                                 mov
                                       0x40(\%rsp),\%rcx
49224e:
             48 8b 54 24 48
                                       0x48(\%rsp),\%rdx
                                 mov
                                     4922a7 <arena thread freeres+0xb27>
492253:
             75 52
                                 ine
                                      (%r15),%r15
492255:
             4d 2b 3f
                                 sub
492258:
             49 8b 7f 08
                                 mov
                                       0x8(%r15),%rdi
49225c:
             48 89 f8
                                       %rdi,%rax
                                 mov
49225f:
                                 and $0xffffffffffff8,%rax
             48 83 e0 f8
                                       (%r15,%rax,1),%rax
492263:
             49 3b 04 07
                                 cmp
492267:
             0f 85 b0 00 00 00
                                 jne 49231d <arena_thread_freeres+0xb9d>
49226d:
             49 8b 47 10
                                 mov 0x10(%r15),%rax
                                       0x18(%rax),%r15
492271:
             4c 3b 78 18
                                 cmp
                                 ine 492101 <arena thread freeres+0x981>
492275:
             0f 85 86 fe ff ff
49227b:
             49 8b 77 18
                                       0x18(%r15),%rsi
                                 mov
49227f:
             4c 3b 7e 10
                                       0x10(%rsi),%r15
                                 cmp
                                      492101 <arena thread freeres+0x981>
492283:
             0f 85 78 fe ff ff
                                 ine
                                       $0x3ff,%rdi
492289:
             48 81 ff ff 03 00 00
                                 cmp
492290:
             48 89 70 18
                                 mov
                                       %rsi.0x18(%rax)
                                       %rax,0x10(%rsi)
492294:
             48 89 46 10
                                 mov
             76 0d
                                 jbe 4922a7 <arena_thread_freeres+0xb27>
492298:
49229a:
             49 8b 77 20
                                 mov 0x20(%r15),%rsi
49229e:
             48 85 f6
                                 test %rsi,%rsi
                                      4927a3 <arena thread freeres+0x1023>
4922a1:
             0f 85 fc 04 00 00
                                 ine
                                     (%r15,%rbx,1),%rax
4922a7:
             49 8d 04 1f
                                 lea
4922ab:
             48 85 44 24 30
                                 test %rax,0x30(%rsp)
                                      492522 <arena thread freeres+0xda2>
4922b0:
             0f 85 6c 02 00 00
                                 ine
4922b6:
             49 8b 70 10
                                 mov
                                       0x10(%r8),%rsi
                                      %r8,%rsi
4922ba:
             4c 01 c6
                                 add
             48 39 f0
                                       %rsi,%rax
4922bd:
                                 cmp
4922c0:
             0f 84 11 02 00 00
                                     4924d7 <arena thread freeres+0xd57>
                                 ie
4922c6:
             48 8b 15 1b 8f 22 00 mov 0x228f1b(%rip),%rdx
                                                                # 6bb1e8 < progname>
             80 3a 00
                                 cmpb $0x0,(%rdx)
4922cd:
```

```
4922d0:
            0f 84 4c 03 00 00
                                ie
                                     492622 <arena thread freeres+0xea2>
                                                          # 492b2d
4922d6:
            48 8d 05 50 08 00 00 lea
                                     0x850(%rip),%rax
< PRETTY FUNCTION .10913+0x5d>
4922dd:
            48 89 c1
                                mov
                                      %rax,%rcx
4922e0:
            48 8d 3d f9 18 00 00 lea
                                    0x18f9(%rip),%rdi
                                                           # 493be0
< PRETTY FUNCTION .12394+0x5f5>
4922e7:
            48 83 ec 08
                                sub
                                      $0x8,%rsp
4922eb:
            41 b9 77 02 00 00
                                      $0x277,%r9d
                                mov
4922f1:
            4c 8d 05 1c 10 00 00 lea
                                    0x101c(%rip),%r8
                                                          # 493314
<__PRETTY_FUNCTION___.10520+0x74>
4922f8:
            57
                          push %rdi
4922f9:
            50
                          push %rax
            48 8d 05 7f 1f 00 00 lea 0x1f7f(%rip),%rax
4922fa:
                                                           # 494280
< PRETTY FUNCTION .11706>
492301:
            50
                          push %rax
492302:
            e9 5f fa ff ff
                                jmpg 491d66 <arena thread freeres+0x5e6>
492307:
            66 0f 1f 84 00 00 00 nopw 0x0(%rax,%rax,1)
49230e:
            00 00
            48 89 ef
                                      %rbp,%rdi
492310:
                                mov
                                callq 4195f0 <malloc_consolidate>
492313:
            e8 d8 72 f8 ff
                                jmpg 491ff5 <arena thread freeres+0x875>
492318:
            e9 d8 fc ff ff
            48 8d 3d 8c 0f 00 00 lea 0xf8c(%rip),%rdi
49231d:
                                                         # 4932b0
<__PRETTY_FUNCTION__.10520+0x10>
            e8 a7 72 f8 ff
                                callq 4195d0 <malloc_printerr>
492324:
492329:
                                      0x60(%rbp),%rax
            48 8b 45 60
                                mov
49232d:
            48 8b 40 08
                                mov
                                      0x8(%rax),%rax
492331:
            48 83 e0 f8
                                      $0xffffffffffff8,%rax
                                and
                                                               # 6ba860 <mp_>
492335:
            48 3b 05 24 85 22 00 cmp 0x228524(%rip),%rax
49233c:
            0f 82 87 f9 ff ff
                                     491cc9 <arena_thread_freeres+0x549>
                                jb
492342:
            48 8b 3d 1f 85 22 00 mov 0x22851f(%rip),%rdi
                                                              # 6ba868 <mp +0x8>
492349:
            e8 a2 7c f8 ff
                                callq 419ff0 <systrim.isra.1.constprop.11>
49234e:
            e9 76 f9 ff ff
                                impg 491cc9 < arena thread freeres + 0x549>
492353:
            64 48 83 3c 25 c8 ff cmpg $0x0,%fs:0xfffffffffff68
49235a:
            ff ff 00
            0f 84 3b 01 00 00
                                     49249e <arena thread freeres+0xd1e>
49235d:
                                ie
492363:
            a8 04
                                test $0x4,%al
492365:
            48 8d 3d 94 85 22 00 lea
                                     0x228594(%rip),%rdi
                                                             #6ba900 <main arena>
                                     49237a <arena thread freeres+0xbfa>
49236c:
            74 0c
                                je
49236e:
            48 89 d8
                                      %rbx,%rax
                                mov
            48 25 00 00 00 fc
                                      $0xffffffffc000000,%rax
492371:
                                and
492377:
            48 8b 38
                                      (%rax),%rdi
                                mov
49237a:
            31 d2
                                xor
                                     %edx,%edx
49237c:
            48 89 de
                                mov %rbx,%rsi
            e8 9c 94 f8 ff
                                callq 41b820 <_int_free>
49237f:
                                jmpq 491908 <arena_thread_freeres+0x188>
492384:
            e9 7f f5 ff ff
            48 8d 3d 58 17 00 00 lea 0x1758(%rip),%rdi
492389:
                                                           # 493ae8
<__PRETTY_FUNCTION__.12394+0x4fd>
            e8 3b 72 f8 ff
                                callq 4195d0 <malloc_printerr>
492390:
492395:
            48 8b 15 4c 8e 22 00 mov 0x228e4c(%rip),%rdx
                                                               # 6bb1e8 <__progname>
            48 8d 05 8a 07 00 00 lea 0x78a(%rip),%rax
49239c:
                                                          # 492b2d
< PRETTY FUNCTION .10913+0x5d>
```

```
4923a3:
            48 8d 0d cb 37 01 00 lea 0x137cb(%rip),%rcx
                                                            # 4a5b75
<conversion rate+0x11d>
4923aa:
            48 8d 3d 5f 17 00 00 lea
                                    0x175f(%rip),%rdi
                                                          #493b10
<__PRETTY_FUNCTION .12394+0x525>
4923b1:
            41 b9 64 02 00 00
                                mov $0x264,%r9d
4923b7:
            4c 8d 05 56 0f 00 00 lea 0xf56(%rip),%r8
                                                        # 493314
<__PRETTY_FUNCTION___.10520+0x74>
4923be:
            80 3a 00
                                cmpb $0x0,(%rdx)
4923c1:
            48 0f 45 c8
                                cmovne %rax,%rcx
4923c5:
            48 83 ec 08
                                sub
                                     $0x8,%rsp
                          push %rdi
4923c9:
            57
            50
                          push %rax
4923ca:
            48 8d 05 ae 1e 00 00 lea 0x1eae(%rip),%rax
4923cb:
                                                          # 494280
< PRETTY FUNCTION .11706>
4923d2:
            50
                          push %rax
4923d3:
            e9 8e f9 ff ff
                                jmpg 491d66 <arena thread freeres+0x5e6>
4923d8:
            48 8b b4 24 98 00 00 mov
                                      0x98(%rsp),%rsi
4923df:
            00
4923e0:
            4c 89 ef
                                      %r13,%rdi
                                mov
4923e3:
            ff d0
                          callq *%rax
4923e5:
            e9 1e f5 ff ff
                                      491908 <arena thread freeres+0x188>
                                jmpg
4923ea:
            48 8b 15 f7 8d 22 00 mov
                                      0x228df7(%rip),%rdx
                                                              # 6bb1e8 <__progname>
4923f1:
            48 8d 05 35 07 00 00 lea
                                    0x735(%rip),%rax
                                                          # 492b2d
<__PRETTY_FUNCTION__.10913+0x5d>
            48 8d 0d 76 37 01 00 lea
                                    0x13776(%rip),%rcx
4923f8:
                                                            # 4a5b75
<conversion rate+0x11d>
            48 8d 3d 3a 17 00 00 lea
                                    0x173a(%rip),%rdi
                                                          # 493b40
4923ff:
< PRETTY FUNCTION .12394+0x555>
492406:
            41 b9 67 02 00 00
                                      $0x267,%r9d
                                mov
49240c:
            4c 8d 05 01 0f 00 00 lea
                                    0xf01(%rip),%r8
                                                        # 493314
< PRETTY FUNCTION .10520+0x74>
            80 3a 00
                                cmpb $0x0,(%rdx)
492413:
492416:
            48 0f 45 c8
                                cmovne %rax,%rcx
49241a:
            48 83 ec 08
                                sub
                                     $0x8,%rsp
                          push %rdi
49241e:
            57
                         push %rax
49241f:
            50
            48 8d 05 59 1e 00 00 lea 0x1e59(%rip),%rax
492420:
                                                           # 494280
< PRETTY FUNCTION .11706>
492427:
            50
                          push %rax
492428:
            e9 39 f9 ff ff
                                impg 491d66 <arena_thread_freeres+0x5e6>
49242d:
            48 3b 48 28
                                      0x28(%rax),%rcx
                                cmp
492431:
            0f 85 94 00 00 00
                                ine
                                    4924cb <arena thread freeres+0xd4b>
                                      0x28(%rcx),%rsi
492437:
            48 8b 71 28
                                mov
                                      0x20(%rsi),%rcx
49243b:
            48 3b 4e 20
                                cmp
49243f:
            0f 85 86 00 00 00
                                jne 4924cb <arena_thread_freeres+0xd4b>
492445:
            48 83 7a 20 00
                                cmpg $0x0,0x20(\%rdx)
                                     492657 <arena_thread_freeres+0xed7>
49244a:
            0f 84 07 02 00 00
                                ie
                                      %rsi,0x28(%rax)
492450:
            48 89 70 28
                                mov
                                      0x28(%rcx),%rdx
492454:
            48 8b 51 28
                                mov
                                      %rax,0x20(%rdx)
492458:
            48 89 42 20
                                mov
49245c:
                                jmpg 491e7a <arena thread freeres+0x6fa>
            e9 19 fa ff ff
                                      0x228d80(%rip),%rdx
492461:
            48 8b 15 80 8d 22 00 mov
                                                               # 6bb1e8 <__progname>
```

```
492468:
            80 3a 00
                                cmpb $0x0.(%rdx)
49246b:
            74 4e
                                     4924bb <arena thread freeres+0xd3b>
49246d:
            48 8d 05 b9 06 00 00 lea
                                     0x6b9(%rip),%rax
                                                          # 492b2d
< PRETTY FUNCTION .10913+0x5d>
492474:
            48 89 c1
                                      %rax,%rcx
                                mov
492477:
            48 8d 3d f2 16 00 00 lea 0x16f2(%rip),%rdi
                                                           # 493b70
<__PRETTY_FUNCTION___.12394+0x585>
49247e:
            48 83 ec 08
                                      $0x8,%rsp
                                sub
492482:
            41 b9 6a 02 00 00
                                      $0x26a,%r9d
                                mov
492488:
            4c 8d 05 85 0e 00 00 lea
                                     0xe85(%rip),%r8
                                                         # 493314
< PRETTY FUNCTION .10520+0x74>
                         push %rdi
49248f:
            57
492490:
            50
                          push %rax
492491:
            48 8d 05 e8 1d 00 00 lea 0x1de8(%rip),%rax
                                                           # 494280
<__PRETTY_FUNCTION__.11706>
492498:
                          push %rax
            50
                                jmpq 491d66 <arena_thread_freeres+0x5e6>
492499:
            e9 c8 f8 ff ff
49249e:
            64 80 3c 25 d0 ff ff
                                cmpb $0x0,%fs:0xffffffffffd0
4924a5:
            ff 00
4924a7:
            0f 85 b6 fe ff ff
                                ine 492363 <arena thread freeres+0xbe3>
4924ad:
            e8 0e cb f8 ff
                                callq 41efc0 <tcache init.part.4>
4924b2:
            49 8b 45 f8
                                mov -0x8(\%r13),\%rax
4924b6:
            e9 a8 fe ff ff
                                jmpg 492363 <arena thread freeres+0xbe3>
            48 8d 0d b3 36 01 00 lea 0x136b3(%rip),%rcx
4924bb:
                                                             # 4a5b75
<conversion rate+0x11d>
4924c2:
            48 8d 05 64 06 00 00 lea
                                     0x664(%rip),%rax
                                                          # 492b2d
< PRETTY FUNCTION .10913+0x5d>
4924c9:
            eb ac
                                     492477 <arena thread freeres+0xcf7>
                                jmp
            48 8d 3d 56 11 00 00 lea
                                     0x1156(%rip),%rdi
4924cb:
                                                           # 493628
<__PRETTY_FUNCTION___.12394+0x3d>
                                callq 4195d0 <malloc printerr>
4924d2:
            e8 f9 70 f8 ff
4924d7:
            49 8d 40 20
                                     0x20(%r8),%rax
                                lea
4924db:
            48 83 cb 01
                                or
                                     $0x1,%rbx
4924df:
            4c 89 7d 60
                                      %r15,0x60(%rbp)
                                mov
4924e3:
            49 89 5f 08
                                mov
                                      %rbx,0x8(%r15)
4924e7:
            49 39 c7
                                      %rax,%r15
                                cmp
4924ea:
            0f 85 a5 01 00 00
                                    492695 <arena_thread_freeres+0xf15>
                                ine
4924f0:
            49 8b 58 08
                                      0x8(\%r8).\%rbx
                                mov
                                      %r8,%r11
4924f4:
            4d 89 c3
                                mov
            4d 89 f9
4924f7:
                                      %r15,%r9
                                mov
4924fa:
            48 8b 7b 10
                                      0x10(%rbx),%rdi
                                mov
4924fe:
            48 8d 47 f0
                                lea
                                     -0x10(%rdi),%rax
492502:
            48 8d 34 03
                                     (%rbx,%rax,1),%rsi
                                lea
                                     $0xf,%esi
492506:
            83 e6 0f
                                and
492509:
            48 29 f0
                                sub
                                      %rsi,%rax
49250c:
            48 01 d8
                                      %rbx,%rax
                                add
                                cmpq $0x1,0x8(\%rax)
49250f:
            48 83 78 08 01
            0f 85 7b fe ff ff
                                     492395 <arena thread freeres+0xc15>
492514:
                                ine
            49 89 d8
                                      %rbx,%r8
49251a:
                                mov
            e9 87 fc ff ff
                                impg 4921a9 <arena thread freeres+0xa29>
49251d:
492522:
            48 8b 15 bf 8c 22 00 mov
                                      0x228cbf(%rip),%rdx
                                                               # 6bb1e8 < progname>
                                cmpb $0x0,(%rdx)
492529:
            80 3a 00
```

```
49252c:
             0f 84 50 01 00 00
                                 ie
                                     492682 <arena thread freeres+0xf02>
                                                           # 492b2d
492532:
             48 8d 05 f4 05 00 00 lea
                                     0x5f4(\%rip),\%rax
< PRETTY FUNCTION .10913+0x5d>
492539:
             48 89 c1
                                 mov
                                       %rax.%rcx
49253c:
             48 8d 3d 5d 16 00 00 lea
                                     0x165d(%rip),%rdi
                                                            # 493ba0
< PRETTY FUNCTION .12394+0x5b5>
492543:
             48 83 ec 08
                                 sub
                                      $0x8,%rsp
             41 b9 76 02 00 00
492547:
                                       $0x276,%r9d
                                 mov
49254d:
             4c 8d 05 c0 0d 00 00 lea
                                     0xdc0(%rip),%r8
                                                          # 493314
< PRETTY FUNCTION .10520+0x74>
                          push %rdi
492554:
             57
                          push %rax
492555:
             50
             48 8d 05 23 1d 00 00 lea 0x1d23(%rip),%rax
492556:
                                                             # 494280
< PRETTY FUNCTION .11706>
49255d:
             50
                                %rax
                          push
49255e:
             e9 03 f8 ff ff
                                       491d66 <arena thread freeres+0x5e6>
                                 jmpg
492563:
             48 8b 5c 24 20
                                 mov
                                       0x20(%rsp),%rbx
492568:
             4d 89 ca
                                       %r9,%r10
                                 mov
                                       0x8(%r10),%rax
49256b:
             49 8b 42 08
                                 mov
49256f:
             48 83 e0 f8
                                 and
                                      $0xffffffffffff8,%rax
             48 39 05 e6 82 22 00 cmp
492573:
                                       %rax,0x2282e6(%rip)
                                                                # 6ba860 <mp >
49257a:
             48 89 44 24 28
                                 mov
                                       %rax,0x28(%rsp)
49257f:
             0f 87 44 f7 ff ff
                                     491cc9 <arena thread freeres+0x549>
                                 ia
             48 83 e8 21
                                      $0x21,%rax
492585:
                                 sub
                                     491cc9 < arena thread freeres + 0x549>
492589:
             0f 88 3a f7 ff ff
                                 is
49258f:
             48 39 c1
                                 cmp
                                      %rax,%rcx
                                     491cc9 <arena thread freeres+0x549>
492592:
             0f 83 31 f7 ff ff
                                 iae
492598:
                                      %rcx,%rax
             48 29 c8
                                 sub
49259b:
             48 f7 da
                                      %rdx
                                 neg
49259e:
             48 21 d0
                                       %rdx,%rax
                                 and
             48 89 44 24 20
                                       %rax,0x20(%rsp)
4925a1:
                                 mov
             0f 84 1d f7 ff ff
                                     491cc9 < arena thread freeres + 0x549>
4925a6:
                                 ie
4925ac:
             4d 8b 7b 10
                                 mov
                                       0x10(%r11),%r15
4925b0:
             49 29 c7
                                 sub
                                      %rax,%r15
             49 83 ff 1f
                                       $0x1f,%r15
4925b3:
                                 cmp
                                     491cc9 <arena thread freeres+0x549>
4925b7:
             0f 8e 0c f7 ff ff
4925bd:
             83 3d 7c 82 22 00 00 cmpl $0x0,0x22827c(%rip)
                                                                # 6ba840
<may shrink heap.10708>
4925c4:
             0f 88 26 01 00 00
                                     4926f0 < arena thread freeres + 0xf70>
             0f 95 c0
                                 setne %al
4925ca:
4925cd:
             84 c0
                                 test %al,%al
4925cf:
             4b 8d 3c 3b
                                 lea
                                      (%r11,%r15,1),%rdi
4925d3:
             4c 89 54 24 38
                                       %r10,0x38(%rsp)
                                 mov
                                       %r11,0x30(%rsp)
4925d8:
             4c 89 5c 24 30
                                 mov
4925dd:
             0f 85 d8 00 00 00
                                 jne
                                      4926bb <arena_thread_freeres+0xf3b>
4925e3:
             48 8b 74 24 20
                                       0x20(%rsp),%rsi
                                 mov
                                       $0x4,%edx
4925e8:
             ba 04 00 00 00
                                 mov
             e8 ce 83 fb ff
                                 callq 44a9c0 < madvise>
4925ed:
             4c 8b 54 24 38
                                       0x38(\%rsp),\%r10
4925f2:
                                 mov
4925f7:
             4c 8b 5c 24 30
                                       0x30(\%rsp),\%r11
                                 mov
4925fc:
             4d 89 7b 10
                                       %r15,0x10(%r11)
                                 mov
492600:
             90
                          nop
```

```
492601:
             48 8b 4c 24 20
                                       0x20(\%rsp).\%rcx
                                 mov
492606:
             48 8b 44 24 28
                                       0x28(%rsp),%rax
                                 mov
49260b:
             48 29 8d 88 08 00 00 sub
                                      %rcx,0x888(%rbp)
492612:
             48 29 c8
                                 sub
                                      %rcx,%rax
             48 83 c8 01
                                     $0x1,%rax
492615:
                                 or
                                       %rax,0x8(%r10)
492619:
             49 89 42 08
                                 mov
49261d:
             e9 a7 f6 ff ff
                                 impg 491cc9 <arena_thread_freeres+0x549>
                                     0x1354c(%rip),%rcx
             48 8d 0d 4c 35 01 00 lea
                                                             # 4a5b75
492622:
<conversion rate+0x11d>
             48 8d 05 fd 04 00 00 lea
                                     0x4fd(%rip),%rax
492629:
                                                           # 492b2d
< PRETTY FUNCTION .10913+0x5d>
492630:
             e9 ab fc ff ff
                                 impg 4922e0 <arena thread freeres+0xb60>
             49 39 d0
                                       %rdx,%r8
492635:
                                 cmp
492638:
             74 74
                                 ie
                                     4926ae <arena thread freeres+0xf2e>
                                       %rdx,0x20(%rax)
49263a:
             48 89 50 20
                                 mov
                                       0x20(%r8),%rdx
49263e:
             49 8b 50 20
                                 mov
492642:
             48 89 70 28
                                       %rsi,0x28(%rax)
                                 mov
492646:
             48 89 42 28
                                       %rax,0x28(%rdx)
                                 mov
                                       0x28(%r8),%rdx
49264a:
             49 8b 50 28
                                 mov
49264e:
             48 89 42 20
                                 mov
                                       %rax,0x20(%rdx)
492652:
             e9 f9 f5 ff ff
                                 jmpg 491c50 <arena thread freeres+0x4d0>
492657:
             48 39 c1
                                 cmp
                                       %rax,%rcx
49265a:
             0f 84 73 01 00 00
                                 ie
                                     4927d3 <arena thread freeres+0x1053>
                                       %rax,0x20(%rdx)
492660:
             48 89 42 20
                                 mov
                                       0x20(%rcx),%rax
492664:
             48 8b 41 20
                                 mov
492668:
             48 89 72 28
                                       %rsi,0x28(%rdx)
                                 mov
                                       %rdx,0x28(%rax)
49266c:
             48 89 50 28
                                 mov
                                       0x28(%rcx),%rax
492670:
             48 8b 41 28
                                 mov
                                       %rdx,0x20(%rax)
492674:
             48 89 50 20
                                 mov
492678:
             e9 fd f7 ff ff
                                 impq 491e7a <arena_thread_freeres+0x6fa>
                                 callq 44c220 < stack chk fail>
49267d:
             e8 9e 9b fb ff
             48 8d 0d ec 34 01 00 lea
                                     0x134ec(%rip),%rcx
492682:
                                                             # 4a5b75
<conversion_rate+0x11d>
             48 8d 05 9d 04 00 00 lea
                                     0x49d(%rip),%rax
                                                           # 492b2d
492689:
<__PRETTY_FUNCTION__.10913+0x5d>
492690:
             e9 a7 fe ff ff
                                 impg 49253c <arena thread freeres+0xdbc>
492695:
             4d 89 fa
                                       %r15,%r10
                                 mov
             48 8b 5c 24 20
                                       0x20(%rsp), %rbx
492698:
                                 mov
49269d:
             4d 89 c3
                                       %r8,%r11
                                 mov
                                 jmpq 49256b <arena_thread_freeres+0xdeb>
4926a0:
             e9 c6 fe ff ff
4926a5:
             48 83 e2 f8
                                      $0xfffffffffffff8,%rdx
                                 and
4926a9:
             e9 9c f1 ff ff
                                 impg 49184a <arena thread freeres+0xca>
4926ae:
             48 89 40 28
                                 mov
                                       %rax,0x28(%rax)
                                       %rax,0x20(%rax)
4926b2:
             48 89 40 20
                                 mov
4926b6:
             e9 95 f5 ff ff
                                 impg 491c50 <arena_thread_freeres+0x4d0>
4926bb:
             48 8b 74 24 20
                                       0x20(%rsp),%rsi
                                 mov
                                      %r9d,%r9d
4926c0:
             45 31 c9
                                 xor
             41 83 c8 ff
                                     $0xffffffff,%r8d
4926c3:
                                 or
             31 d2
                                      %edx,%edx
4926c7:
                                 xor
             ь9 32 00 00 00
                                      $0x32,%ecx
4926c9:
                                 mov
             e8 ad 81 fb ff
                                 callq 44a880 < mmap64>
4926ce:
4926d3:
             48 83 c0 01
                                 add
                                      $0x1,%rax
```

```
4926d7:
             0f 84 ec f5 ff ff
                                     491cc9 <arena thread freeres+0x549>
                                       0x30(%rsp), %r11
4926dd:
             4c 8b 5c 24 30
                                 mov
4926e2:
             4c 8b 54 24 38
                                 mov
                                       0x38(\%rsp),\%r10
4926e7:
             4d 89 7b 18
                                       %r15,0x18(%r11)
                                 mov
4926eb:
             e9 0c ff ff ff
                                 jmpq 4925fc <arena_thread_freeres+0xe7c>
4926f0:
             8b 0d c2 73 22 00
                                       0x2273c2(%rip),%ecx
                                                                #6b9ab8
                                 mov
<__libc_enable_secure>
4926f6:
             85 c9
                                 test %ecx,%ecx
4926f8:
             89 0d 42 81 22 00
                                       %ecx,0x228142(%rip)
                                                                 #6ba840
                                 mov
<may_shrink_heap.10708>
             89 4c 24 48
4926fe:
                                 mov
                                       %ecx,0x48(%rsp)
492702:
             75 2b
                                      49272f <arena thread freeres+0xfaf>
                                 ine
             48 8d 3d 0d 15 00 00 lea
                                      0x150d(%rip),%rdi
492704:
                                                            # 493c18
< PRETTY FUNCTION .12394+0x62d>
                                      %eax,%eax
49270b:
             31 c0
                                 xor
49270d:
             be 00 00 08 00
                                       $0x80000,%esi
                                 mov
492712:
             4c 89 54 24 38
                                       %r10,0x38(%rsp)
                                 mov
492717:
             4c 89 5c 24 30
                                       %r11,0x30(%rsp)
                                 mov
49271c:
             e8 ef 73 fb ff
                                 callq 449b10 < open64 nocancel>
                                 test %eax,%eax
492721:
             85 c0
492723:
             4c 8b 5c 24 30
                                       0x30(\%rsp),\%r11
                                 mov
492728:
             4c 8b 54 24 38
                                 mov
                                       0x38(\%rsp),\%r10
49272d:
             79 0f
                                     49273e <arena thread freeres+0xfbe>
                                 ins
             83 3d 0a 81 22 00 00 cmpl $0x0,0x22810a(%rip)
49272f:
                                                                #6ba840
<may_shrink_heap.10708>
492736:
             0f 95 c0
                                 setne %al
492739:
             e9 8f fe ff ff
                                 impg 4925cd <arena thread freeres+0xe4d>
49273e:
             48 8b 74 24 18
                                       0x18(%rsp),%rsi
                                 mov
                                       $0x1,%edx
492743:
             ba 01 00 00 00
                                 mov
492748:
             89 c7
                                       %eax,%edi
                                 mov
49274a:
             4c 89 54 24 40
                                       %r10,0x40(%rsp)
                                 mov
49274f:
             4c 89 5c 24 38
                                       %r11,0x38(%rsp)
                                 mov
492754:
             89 44 24 30
                                 mov
                                       %eax,0x30(%rsp)
492758:
             e8 f3 74 fb ff
                                 callq 449c50 < __read_nocancel>
                                 test %rax,%rax
49275d:
             48 85 c0
492760:
             44 8b 44 24 30
                                 mov
                                       0x30(%rsp),%r8d
492765:
             4c 8b 5c 24 38
                                       0x38(%rsp),%r11
                                 mov
49276a:
             4c 8b 54 24 40
                                       0x40(\%rsp),\%r10
                                 mov
49276f:
             8b 4c 24 48
                                       0x48(\%rsp),\%ecx
                                 mov
             7e 0a
                                     49277f <arena_thread_freeres+0xfff>
492773:
                                 ile
492775:
             31 c9
                                 xor %ecx,%ecx
492777:
             80 7c 24 57 32
                                 cmpb $0x32,0x57(%rsp)
                                 sete %cl
49277c:
             0f 94 c1
             44 89 c7
                                       %r8d,%edi
49277f:
                                 mov
492782:
             4c 89 54 24 38
                                 mov
                                       %r10,0x38(%rsp)
492787:
             4c 89 5c 24 30
                                       %r11,0x30(%rsp)
                                 mov
49278c:
             89 0d ae 80 22 00
                                       %ecx,0x2280ae(%rip)
                                                                # 6ba840
                                 mov
<may_shrink_heap.10708>
492792:
             e8 39 78 fb ff
                                 callq 449fd0 <__close_nocancel>
                                       0x38(%rsp),%r10
492797:
             4c 8b 54 24 38
                                 mov
49279c:
             4c 8b 5c 24 30
                                       0x30(\%rsp),\%r11
                                 mov
                                       49272f <arena_thread_freeres+0xfaf>
4927a1:
             eb 8c
                                 jmp
```

```
4927a3:
            4c 3b 7e 28
                                      0x28(%rsi),%r15
                                cmp
4927a7:
            0f 85 1e fd ff ff
                                ine
                                     4924cb <arena thread freeres+0xd4b>
4927ad:
            49 8b 7f 28
                                mov
                                      0x28(%r15),%rdi
4927b1:
            4c 3b 7f 20
                                cmp
                                      0x20(%rdi),%r15
                                jne 4924cb <arena_thread_freeres+0xd4b>
4927b5:
            0f 85 10 fd ff ff
4927bb:
            48 83 78 20 00
                                cmpg $0x0,0x20(\%rax)
4927c0:
            74 1e
                                     4927e0 <arena_thread_freeres+0x1060>
4927c2:
            48 89 7e 28
                                       %rdi,0x28(%rsi)
                                mov
4927c6:
            49 8b 47 28
                                mov
                                       0x28(%r15),%rax
4927ca:
            48 89 70 20
                                mov
                                       %rsi,0x20(%rax)
            e9 d4 fa ff ff
                                      4922a7 <arena thread freeres+0xb27>
4927ce:
                                jmpq
4927d3:
            48 89 52 28
                                       %rdx,0x28(%rdx)
                                mov
            48 89 52 20
                                       %rdx,0x20(%rdx)
4927d7:
                                mov
4927db:
            e9 9a f6 ff ff
                                      491e7a <arena thread freeres+0x6fa>
                                jmpq
            49 39 f7
4927e0:
                                       %rsi,%r15
                                cmp
4927e3:
            74 1d
                                     492802 <arena thread freeres+0x1082>
                                je
4927e5:
            48 89 70 20
                                mov
                                       %rsi,0x20(%rax)
4927e9:
            49 8b 77 20
                                      0x20(%r15),%rsi
                                mov
                                       %rdi,0x28(%rax)
4927ed:
            48 89 78 28
                                mov
4927f1:
            48 89 46 28
                                mov
                                       %rax,0x28(%rsi)
4927f5:
            49 8b 77 28
                                       0x28(%r15),%rsi
                                mov
4927f9:
            48 89 46 20
                                mov
                                       %rax,0x20(%rsi)
4927fd:
            e9 a5 fa ff ff
                                impg
                                      4922a7 <arena thread freeres+0xb27>
            48 89 40 28
                                       %rax,0x28(%rax)
492802:
                                mov
                                       %rax,0x20(%rax)
492806:
            48 89 40 20
                                mov
49280a:
            e9 98 fa ff ff
                                jmpq
                                      4922a7 <arena thread freeres+0xb27>
```

## Disassembly of section .fini:

## 0000000000492810 <\_fini>:

 492810:
 48 83 ec 08
 sub
 \$0x8,%rsp

 492814:
 48 83 c4 08
 add
 \$0x8,%rsp

492818: c3 retq