

---

```

1 400940 <tail_call_chain_1>:
2   400940: 85 ff test %edi,%edi
3   400942: 7e 08 jle 40094c
        <tail_call_chain_1+0xc>
4   400944: 83 c7 ff add $0xffffffff,%edi
5   400947: e9 14 01 00 00 jmpq 400a60
        <tail_call_chain_2>
6   40094c: b8 2a 00 00 00 mov $0x2a,%eax
7   400951: c3 retq
8   400952: 66 2e 0f 1f 84 00 00 nopw
        %cs:0x0(%rax,%rax,1)
9  ...

```

---

(a) Assembly code

---

```

1 FDE pc=40094c..400952
2   DW_CFA_def_cfa: r7 (rsp) ofs 8

```

---

(c) FDE obfuscation success version

---

```

1 400942 <FUNC_400940>:
2   400940: 85 ff test %edi,%edi
3   400942: 7e 08 jle 40094c
4   400944: 83 c7 ff add $0xffffffff,%edi
5 400947 <FUNC_400947>:
6   400947: e9 14 01 00 00 jmpq 400a60
7 40094c <FUNC_40094c>:
8   40094c: b8 2a 00 00 00 mov $0x2a,%eax
9   400951: c3 retq
10  400952: 66 2e 0f 1f 84 00 00 nopw
        %cs:0x0(%rax,%rax,1)
11 ...

```

---

(b) The output of disassembler with unsuitable forged FDEs.

---

```

1 FDE pc=400947..40094c
2   DW_CFA_nop
3   DW_CFA_nop
4   DW_CFA_nop
5 FDE pc=40094c..400952
6   DW_CFA_def_cfa: r7 (rsp) ofs 8

```

---

(d) FDE obfuscation failed version

Fig. 12. An example for unsuitable forged FDEs (too close to the real function entry/ too many forged FDE)