Microsurf Analysis Results

Metadata

Run at: 03/29/2022, 11:40:03

Elapsed time (analysis): None

Elapsed time (single run emulation): 0:00:00.361392

Binary: /home/nicolas/msc-thesis-work/doc/examples/rootfs/jail-openssl-x8664/openssl

ELF 64-bit LSB executable, x86-64, version 1 (SYSV), dynamically linked, interpreter /lib64/ld-linux-x86-64.so.2, for GNU/Linux 4.4.0, with debug_info, not stripped

```
Args: ['des-ecb', '-e', '-in', 'input.bin', '-out', 'output.bin', '-nosalt', '-K', '@']
```

Deterministic: False

Emulation root: /home/nicolas/msc-thesis-work/doc/examples/rootfs/jail-openssl-x8664/

Results

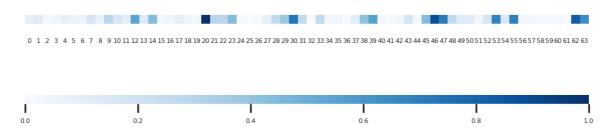
Leaks (detailed), sorted by MI

offset	MI score	Leakage model	Function
0x111155	1.48753	neural-learnt	DES_set_key_unchecked

Source code snippet:

```
* to investigate
*/
s = des_skb[0][(c) & 0x3f] |
    des_skb[1][((c >> 6L) & 0x03) | ((c >> 7L) & 0x3c)] |
    des_skb[2][((c >> 13L) & 0x0f) | ((c >> 14L) & 0x30)] |
    des_skb[3][((c >> 20L) & 0x01) | ((c >> 21L) & 0x06) |
```

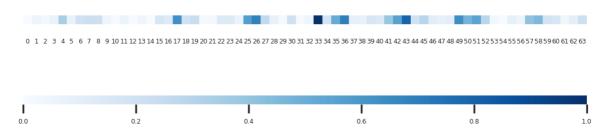
Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x111266	1.47854	neural-learnt	DES_set_key_unchecked

```
t = des_skb[4][(d) & 0x3f] |
    des_skb[5][((d >> 7L) & 0x03) | ((d >> 8L) & 0x3c)] |
    des_skb[6][(d >> 15L) & 0x3f] |
    des_skb[7][((d >> 21L) & 0x0f) | ((d >> 22L) & 0x30)];

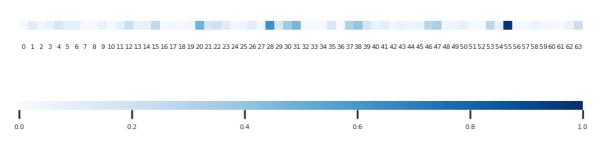
/* table contained 0213 4657 */
```



offset	MI score	Leakage model	Function
0x111181	1.44628	neural-learnt	DES_set_key_unchecked

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x1111eb	1.44279	neural-learnt	DES_set_key_unchecked





offset	MI score	Leakage model	Function
0x108387	1.41744	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x111298	1.33979	neural-learnt	DES_set_key_unchecked

Source code snippet:

```
des_skb[5][((d >> 7L) & 0x03) | ((d >> 8L) & 0x3c)] |
  des_skb[6][(d >> 15L) & 0x3f] |
  des_skb[7][((d >> 21L) & 0x0f) | ((d >> 22L) & 0x30)];

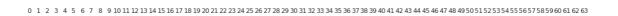
/* table contained 0213 4657 */
t2 = ((t << 16L) | (s & 0x00000ffffL)) & 0xffffffffL;</pre>
```



offset	MI score	Leakage model	Function
0x1083a6	1.3205	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108e0a	1.28946	neural-learnt	DES_encrypt1

Source code snippet:

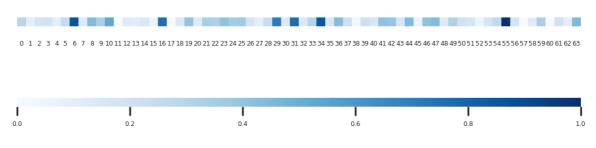




offset	MI score	Leakage model	Function
0x108fa9	1.28552	neural-learnt	DES_encrypt1

```
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
```

Key bit dependencies (estimated):



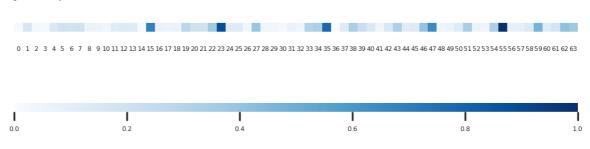
offset	MI score	Leakage model	Function
0x1a9af0	1.26796	neural-learnt	OPENSSL_hexchar2int

Source code snippet:

```
#endif

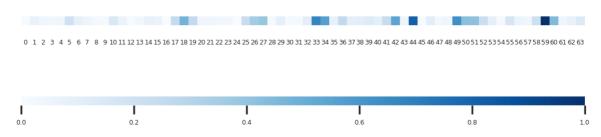
switch (c) {
  case '0':
    return 0;
  case '1':
```

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x11123f	1.23345	neural-learnt	DES_set_key_unchecked

```
((c >> 22L) & 0x38)];
t = des_skb[4][(d) & 0x3f] |
  des_skb[5][((d >> 7L) & 0x03) | ((d >> 8L) & 0x3c)] |
  des_skb[6][(d >> 15L) & 0x3f] |
  des_skb[7][((d >> 21L) & 0x0f) | ((d >> 22L) & 0x30)];
```

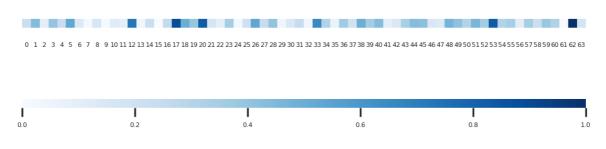


offset	MI score	Leakage model	Function
0x1092a5	1.22984	neural-learnt	DES_encrypt1

Source code snippet:

```
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
} else {
    D_ENCRYPT(1, r, 30);  /* 16 */
    D_ENCRYPT(r, 1, 28);  /* 15 */
```

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x1083fe	1.22978	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x1090ce	1.22908	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108930	1.21887	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x1084b0	1.21441	neural-learnt	DES_encrypt1

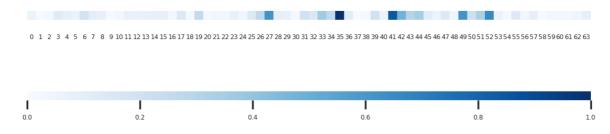
Key bit dependencies (estimated):





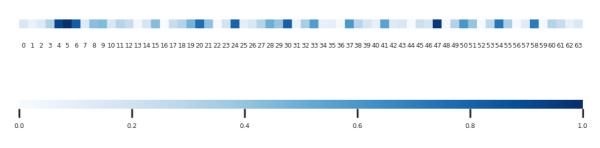
offset	MI score	Leakage model	Function
0x11120f	1.2141	neural-learnt	DES_set_key_unchecked

Source code snippet:



offset	MI score	Leakage model	Function
0x108aae	1.21079	neural-learnt	DES_encrypt1

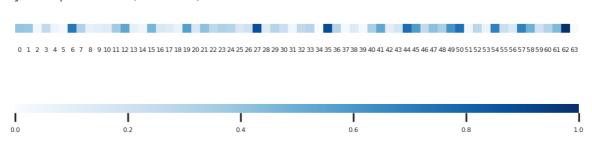
Key bit dependencies (estimated):



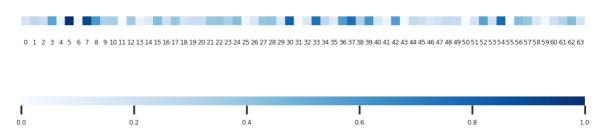
offset	MI score	Leakage model	Function
0x108d73	1.20173	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108d58	1.19477	neural-learnt	DES_encrypt1

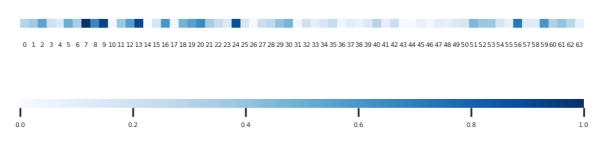


offset	MI score	Leakage model	Function
0x109076	1.18844	neural-learnt	DES_encrypt1

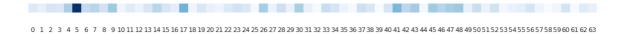
Source code snippet:

```
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
} else {
```

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108ca6	1.18824	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x108ef5	1.18057	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108b44	1.17905	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x108b9c	1.17222	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x10928a	1.17207	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



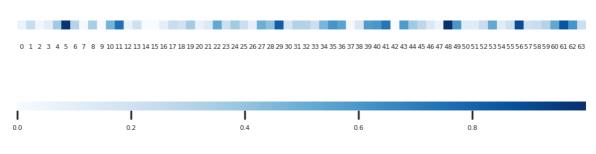
0.6

0.8

0.4

offset	MI score	Leakage model	Function
0x10919b	1.17093	neural-learnt	DES_encrypt1

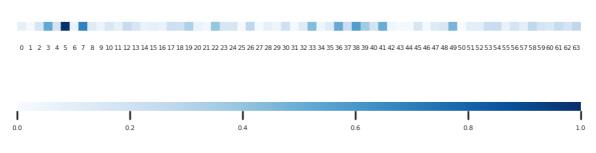
Key bit dependencies (estimated):



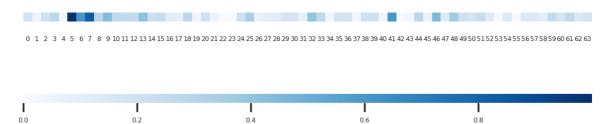
offset	MI score	Leakage model	Function
0x108841	1.16688	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x10862d	1.16432	neural-learnt	DES_encrypt1

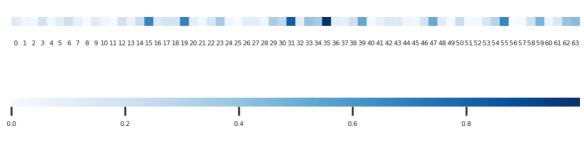


offset	MI score	Leakage model	Function
0x035720	1.16133	neural-learnt	set_hex

Source code snippet:

```
if (j == 0)
    break;
if (!isxdigit(j)) {
    BIO_printf(bio_err, "non-hex digit\n");
    return 0;
}
```

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x1111b1	1.15831	neural-learnt	DES_set_key_unchecked





offset	MI score	Leakage model	Function
0x1088f2	1.15831	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x1087ce	1.14497	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x1092fe	1.13991	neural-learnt	DES_encrypt1

Source code snippet:

```
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
} else {
    D_ENCRYPT(1, r, 30);  /* 16 */
    D_ENCRYPT(r, 1, 28);  /* 15 */
```

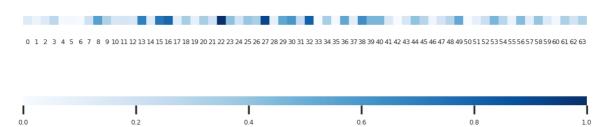
Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108f2e	1.13856	neural-learnt	DES_encrypt1

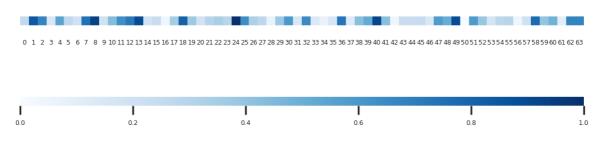
Source code snippet:



offset	MI score	Leakage model	Function
0x109109	1.13848	neural-learnt	DES_encrypt1

```
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
} else {
```

Key bit dependencies (estimated):

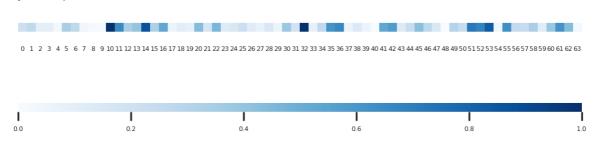


offset	MI score	Leakage model	Function
0x1086de	1.13462	neural-learnt	DES_encrypt1

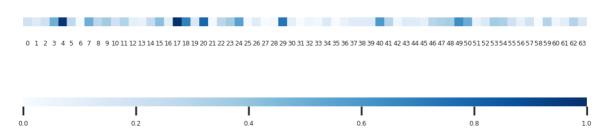
Source code snippet:

```
D_ENCRYPT(r, 1, 2); /* 2 */
D_ENCRYPT(1, r, 4); /* 3 */
D_ENCRYPT(r, 1, 6); /* 4 */
D_ENCRYPT(1, r, 8); /* 5 */
D_ENCRYPT(r, 1, 10); /* 6 */
D_ENCRYPT(1, r, 12); /* 7 */
```

Key bit dependencies (estimated):



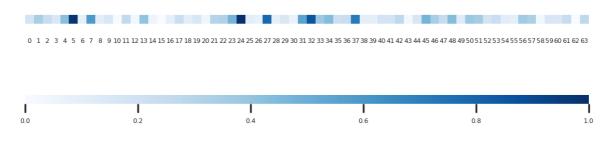
offset	MI score	Leakage model	Function
0x1088b9	1.13447	neural-learnt	DES_encrypt1



offset	MI score	Leakage model	Function
0x1089a4	1.13308	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108d95	1.13199	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x108686	1.13167	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108a92	1.13157	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x108737	1.12919	neural-learnt	DES_encrypt1

Key bit dependencies (estimated):







offset	MI score	Leakage model	Function
0x108a3a	1.12864	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):

0.2

0.0

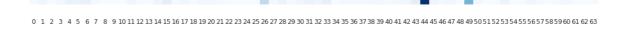


0.8

1.0

offset	MI score	Leakage model	Function
0x10834c	1.12751	neural-learnt	DES_encrypt1

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108bd7	1.12734	neural-learnt	DES_encrypt1

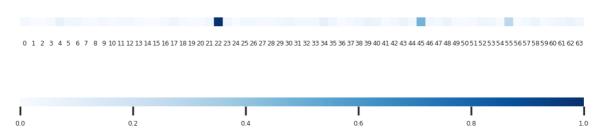
Source code snippet:

Key bit dependencies (estimated):





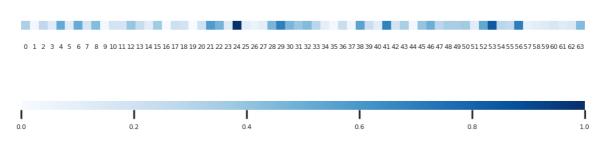
offset	MI score	Leakage model	Function
0x108368	1.12592	neural-learnt	DES_encrypt1



offset	MI score	Leakage model	Function
0x10894b	1.12317	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x1089e2	1.12292	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x1085ba	1.11768	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108545	1.1164	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x10896d	1.1135	neural-learnt	DES_encrypt1

Source code snippet:

```
D_{ENCRYPT}(1, r, 8);
                       /* 5 */
D_ENCRYPT(r, 1, 10);
                       /* 6 */
D_ENCRYPT(1, r, 12);
                       /* 7 */
D_ENCRYPT(r, 1, 14);
                      /* 8 */
D_ENCRYPT(1, r, 16);
                      /* 9 */
D_ENCRYPT(r, 1, 18);
                      /* 10 */
```

Key bit dependencies (estimated):



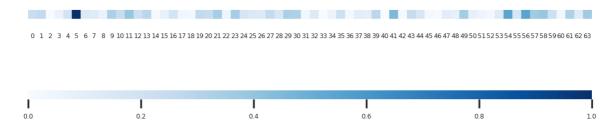


offset	MI score	Leakage model	Function
0x108b81	1.11229	neural-learnt	DES_encrypt1

Source code snippet:

```
D_ENCRYPT(1, r, 12);
                       /* 7 */
D_ENCRYPT(r, 1, 14);
                      /* 8 */
D_ENCRYPT(1, r, 16);
                      /* 9 */
D_ENCRYPT(r, 1, 18);
                      /* 10 */
D_ENCRYPT(1, r, 20);
                      /* 11 */
D_ENCRYPT(r, 1, 22);
                       /* 12 */
```

Key bit dependencies (estimated):



0.6

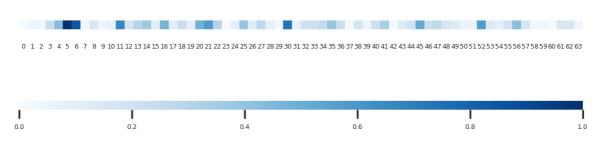
1.0

0.4

offset	MI score	Leakage model	Function
0x108e7d	1.11072	neural-learnt	DES_encrypt1

```
D_ENCRYPT(r, 1, 18); /* 10 */
D_ENCRYPT(1, r, 20); /* 11 */
D_ENCRYPT(r, 1, 22); /* 12 */
D_ENCRYPT(1, r, 24); /* 13 */
D_ENCRYPT(r, 1, 26); /* 14 */
D_ENCRYPT(1, r, 28); /* 15 */
```

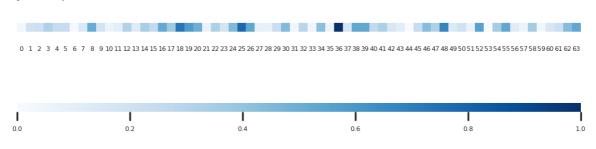
Key bit dependencies (estimated):



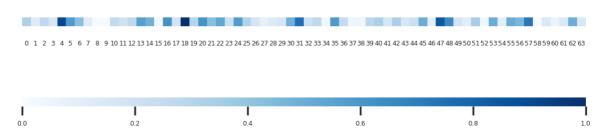
offset	MI score	Leakage model	Function
0x108c8b	1.10467	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



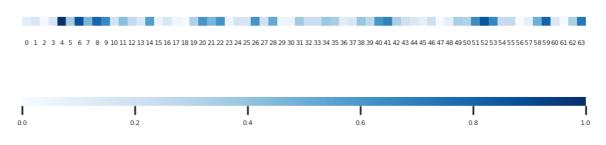
offset	MI score	Leakage model	Function
0x108deb	1.10231	neural-learnt	DES_encrypt1



offset	MI score	Leakage model	Function
0x108491	1.10055	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x1090ea	1.09956	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x1087e8	1.09706	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x10866a	1.09565	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x1092e2	1.09487	neural-learnt	DES_encrypt1

```
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
} else {
    D_ENCRYPT(1, r, 30);  /* 16 */
    D_ENCRYPT(r, 1, 28);  /* 15 */
```

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x1088d8	1.09397	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



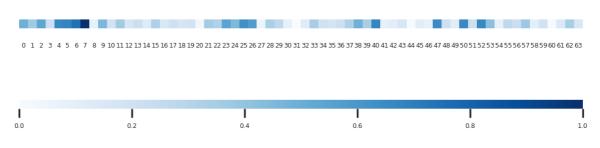
0.6

0.8

0.4

offset	MI score	Leakage model	Function
0x109213	1.09341	neural-learnt	DES_encrypt1

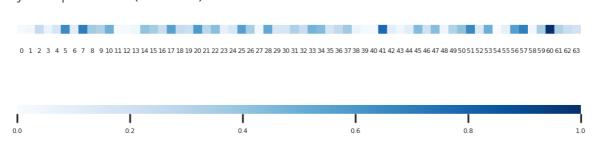
Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x10830f	1.09251	neural-learnt	DES_encrypt1

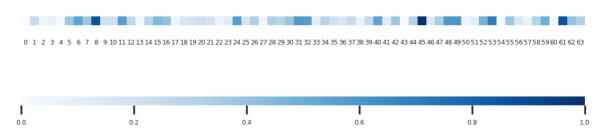
Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x1087af	1.09102	neural-learnt	DES_encrypt1

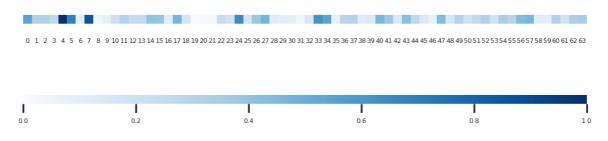
```
D_ENCRYPT(1, r, 4);  /* 3 */
D_ENCRYPT(r, 1, 6);  /* 4 */
D_ENCRYPT(1, r, 8);  /* 5 */
D_ENCRYPT(r, 1, 10);  /* 6 */
D_ENCRYPT(1, r, 12);  /* 7 */
D_ENCRYPT(r, 1, 14);  /* 8 */
```



offset	MI score	Leakage model	Function
0x10843b	1.09024	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x1091f4	1.08576	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x1086c4	1.08493	neural-learnt	DES_encrypt1

Source code snippet:

```
D_ENCRYPT(r, 1, 2); /* 2 */
D_ENCRYPT(1, r, 4); /* 3 */
D_ENCRYPT(r, 1, 6); /* 4 */
D_ENCRYPT(1, r, 8); /* 5 */
D_ENCRYPT(r, 1, 10); /* 6 */
D_ENCRYPT(1, r, 12); /* 7 */
```

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x1086a5	1.08455	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x108774	1.08076	neural-learnt	DES_encrypt1

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108419	1.0799	neural-learnt	DES_encrypt1

Source code snippet:

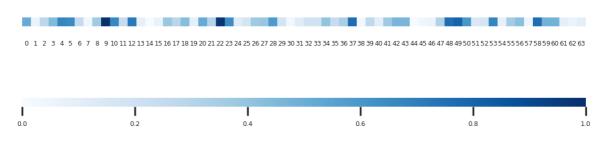
Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108d1a	1.07272	neural-learnt	DES_encrypt1

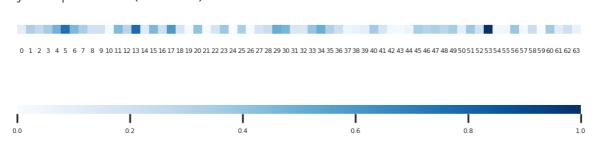
Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108472	1.06632	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108b5f	1.06573	neural-learnt	DES_encrypt1



0.6

0.8

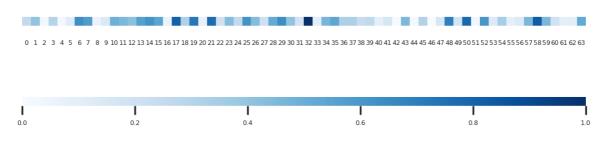
0.4

offset	MI score	Leakage model	Function
0x108826	1.06303	neural-learnt	DES_encrypt1

Source code snippet:

0.0

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108988	1.05855	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x10901e	1.05565	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):







offset	MI score	Leakage model	Function
0x108508	1.05323	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x108fff	1.05262	neural-learnt	DES_encrypt1

```
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
```

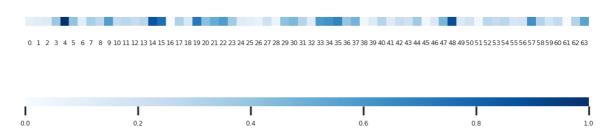
Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108e24	1.04896	neural-learnt	DES_encrypt1

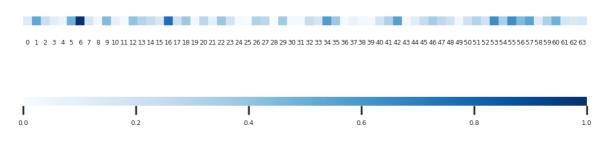
Source code snippet:



offset	MI score	Leakage model	Function
0x108bb8	1.04861	neural-learnt	DES_encrypt1

```
D_ENCRYPT(1, r, 12);  /* 7 */
D_ENCRYPT(r, 1, 14);  /* 8 */
D_ENCRYPT(1, r, 16);  /* 9 */
D_ENCRYPT(r, 1, 18);  /* 10 */
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
```

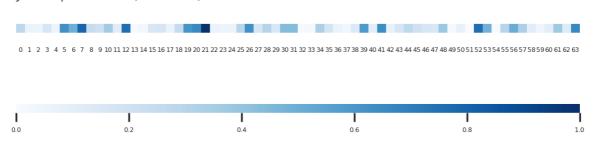
Key bit dependencies (estimated):



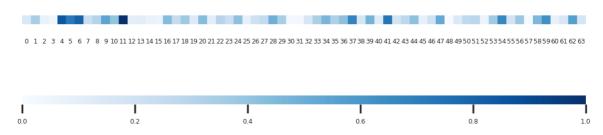
offset	MI score	Leakage model	Function
0x108acd	1.04648	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



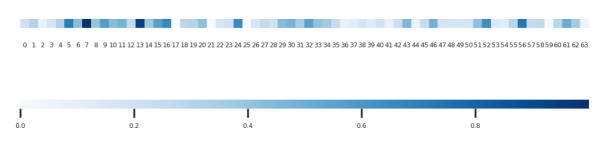
offset	MI score	Leakage model	Function
0x1090b3	1.04566	neural-learnt	DES_encrypt1



offset	MI score	Leakage model	Function
0x108c69	1.04527	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x109038	1.04331	neural-learnt	DES_encrypt1

```
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
```





offset	MI score	Leakage model	Function
0x108f87	1.04312	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108331	1.04251	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x10864f	1.04022	neural-learnt	DES_encrypt1

Source code snippet:

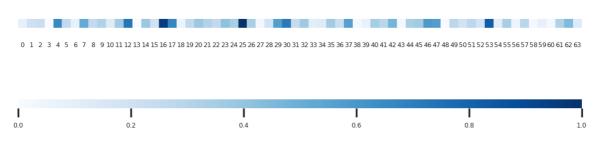
Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x109356	1.03899	neural-learnt	DES_encrypt1

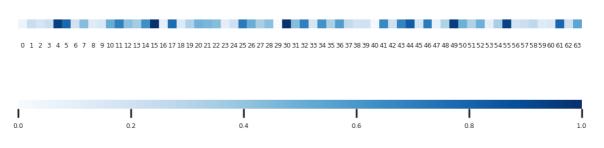
Source code snippet:



offset	MI score	Leakage model	Function
0x1092c7	1.03781	neural-learnt	DES_encrypt1

```
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
} else {
    D_ENCRYPT(1, r, 30);  /* 16 */
    D_ENCRYPT(r, 1, 28);  /* 15 */
```

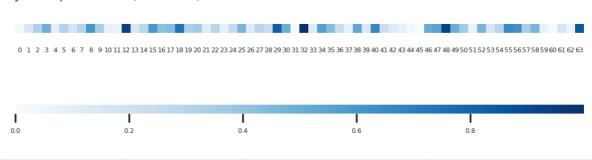
Key bit dependencies (estimated):



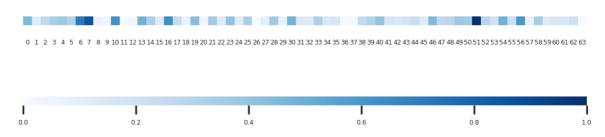
offset	MI score	Leakage model	Function
0x108bf6	1.03771	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108c10	1.03554	neural-learnt	DES_encrypt1

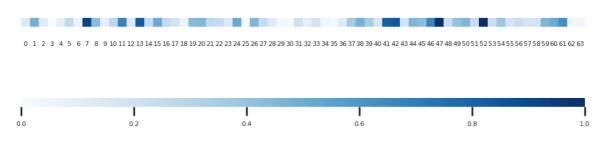


offset	MI score	Leakage model	Function
0x108b06	1.03353	neural-learnt	DES_encrypt1

Source code snippet:

```
D_ENCRYPT(r, 1, 10);  /* 6 */
D_ENCRYPT(1, r, 12);  /* 7 */
D_ENCRYPT(r, 1, 14);  /* 8 */
D_ENCRYPT(1, r, 16);  /* 9 */
D_ENCRYPT(r, 1, 18);  /* 10 */
D_ENCRYPT(1, r, 20);  /* 11 */
```

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x10924c	1.03324	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x1082f4	1.03275	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x109128	1.02989	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x10857c	1.02714	neural-learnt	DES_encrypt1

```
D_ENCRYPT(1, r, 0);
                      /* 1 */
D_ENCRYPT(r, 1, 2);
                       /* 2 */
D_{ENCRYPT}(1, r, 4);
                       /* 3 */
D_ENCRYPT(r, 1, 6);
                       /* 4 */
D_ENCRYPT(1, r, 8);
                       /* 5 */
D_ENCRYPT(r, 1, 10);
                       /* 6 */
```

Key bit dependencies (estimated):

0.2

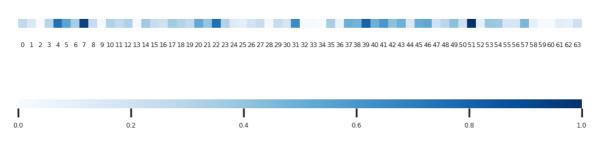




offset	MI score	Leakage model	Function
0x10933c	1.0253	neural-learnt	DES_encrypt1

Source code snippet:

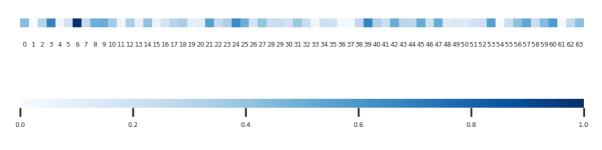
```
D_ENCRYPT(r, 1, 26);
                         /* 14 */
   D_ENCRYPT(1, r, 28);
                         /* 15 */
   D_ENCRYPT(r, 1, 30);
                         /* 16 */
} else {
   D_ENCRYPT(1, r, 30);
                         /* 16 */
   D_ENCRYPT(r, 1, 28);
                         /* 15 */
```



offset	MI score	Leakage model	Function
0x109142	1.02291	neural-learnt	DES_encrypt1

```
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
} else {
```

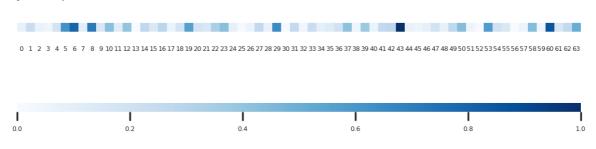
Key bit dependencies (estimated):



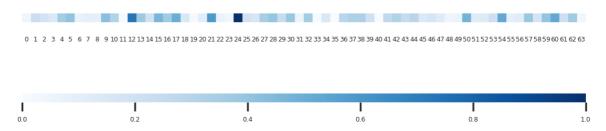
offset	MI score	Leakage model	Function
0x108db0	1.02153	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108f6c	1.02048	neural-learnt	DES_encrypt1

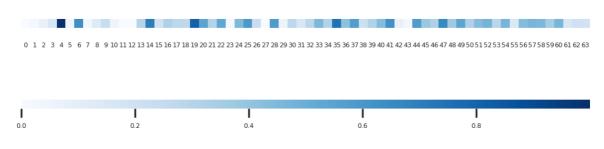


offset	MI score	Leakage model	Function
0x108f14	1.02027	neural-learnt	DES_encrypt1

Source code snippet:

```
D_ENCRYPT(r, 1, 18);  /* 10 */
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
```

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108456	1.01943	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x10931d	1.01786	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x10887e	1.01701	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x108863	1.01384	neural-learnt	DES_encrypt1

```
D_ENCRYPT(r, 1, 6);
                      /* 4 */
D_ENCRYPT(1, r, 8);
                      /* 5 */
D_ENCRYPT(r, 1, 10);
                       /* 6 */
D_ENCRYPT(1, r, 12);
                      /* 7 */
D_ENCRYPT(r, 1, 14);
                       /* 8 */
D_ENCRYPT(1, r, 16);
                       /* 9 */
```

Key bit dependencies (estimated):





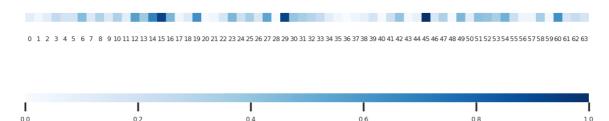
offset	MI score	Leakage model	Function
0x10871c	1.009	neural-learnt	DES_encrypt1

Source code snippet:

```
D_{ENCRYPT}(1, r, 4);
                       /* 3 */
D_{ENCRYPT}(r, 1, 6);
                        /* 4 */
D_{ENCRYPT}(1, r, 8);
                        /* 5 */
D_ENCRYPT(r, 1, 10);
                        /* 6 */
D_ENCRYPT(1, r, 12);
                        /* 7 */
D_ENCRYPT(r, 1, 14);
                         /* 8 */
```

Key bit dependencies (estimated):

0.2



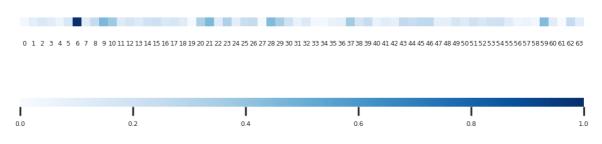
0.6

0.8

1.0

offset	MI score	Leakage model	Function
0x108612	1.00841	neural-learnt	DES_encrypt1

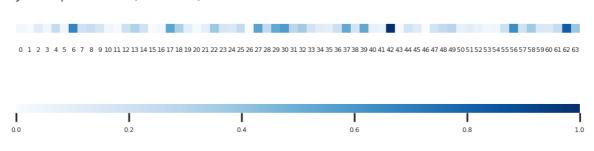
Key bit dependencies (estimated):



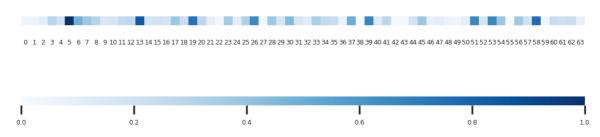
offset	MI score	Leakage model	Function
0x1091d8	1.00642	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



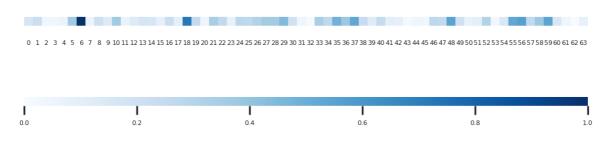
offset	MI score	Leakage model	Function
0x1085d4	1.00583	neural-learnt	DES_encrypt1



offset	MI score	Leakage model	Function
0x1084ca	1.00201	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108ed6	1.00194	neural-learnt	DES_encrypt1

```
D_ENCRYPT(r, 1, 18);  /* 10 */
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
```

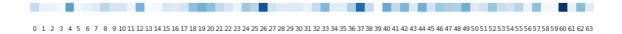




offset	MI score	Leakage model	Function
0x109091	0.999219	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





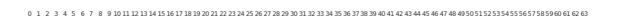
offset	MI score	Leakage model	Function
0x1089fc	0.997644	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x1083c0	0.997488	neural-learnt	DES_encrypt1

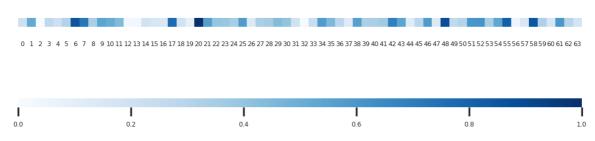
Key bit dependencies (estimated):





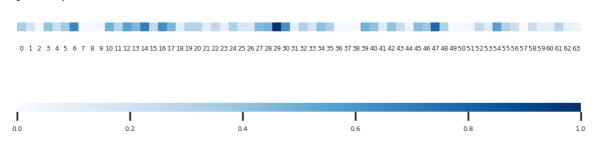
offset	MI score	Leakage model	Function
0x108a55	0.995844	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x108523	0.992062	neural-learnt	DES_encrypt1

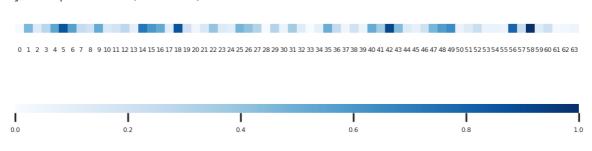
Key bit dependencies (estimated):



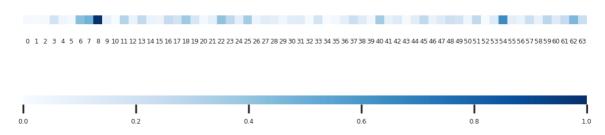
offset	MI score	Leakage model	Function
0x108560	0.987648	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108d00	0.984008	neural-learnt	DES_encrypt1

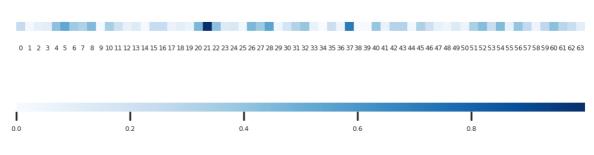


offset	MI score	Leakage model	Function
0x108fe0	0.977914	neural-learnt	DES_encrypt1

Source code snippet:

```
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
```

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108e62	0.972554	neural-learnt	DES_encrypt1

```
D_ENCRYPT(r, 1, 18);  /* 10 */
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
```





offset	MI score	Leakage model	Function
0x109232	0.972179	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108a77	0.968667	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x10889a	0.968433	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





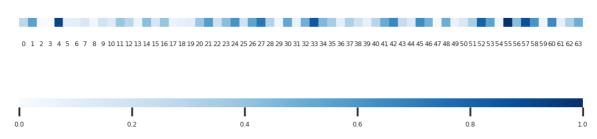
0.8

0.4

offset	MI score	Leakage model	Function
0x108eba	0.966414	neural-learnt	DES_encrypt1

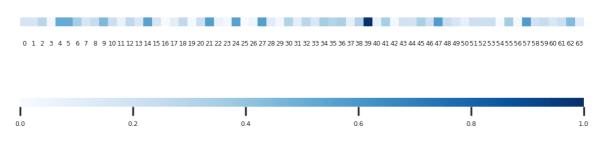
Source code snippet:

0.0



offset	MI score	Leakage model	Function
0x108cc2	0.955767	neural-learnt	DES_encrypt1

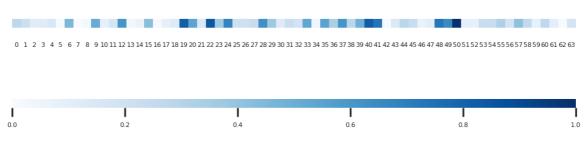
Key bit dependencies (estimated):



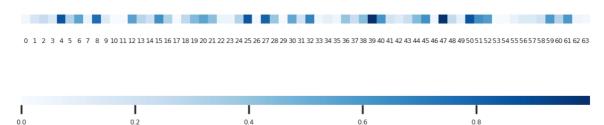
offset	MI score	Leakage model	Function
0x1091bd	0.951374	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



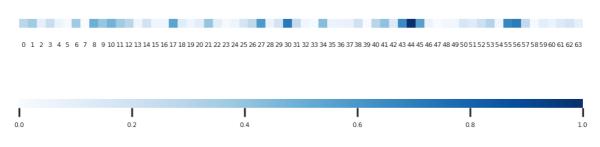
offset	MI score	Leakage model	Function
0x1089c3	0.950901	neural-learnt	DES_encrypt1



offset	MI score	Leakage model	Function
0x10859b	0.933349	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



offset	MI score	Leakage model	Function
0x108aec	0.927673	neural-learnt	DES_encrypt1





offset	MI score	Leakage model	Function
0x108790	0.890148	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x109180	0.882786	neural-learnt	DES_encrypt1

Source code snippet:



offset	MI score	Leakage model	Function
0x108c4e	0.876941	neural-learnt	DES_encrypt1

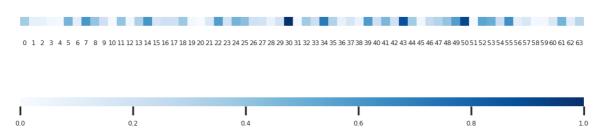
Key bit dependencies (estimated):





offset	MI score	Leakage model	Function
0x108ce1	0.86898	neural-learnt	DES_encrypt1

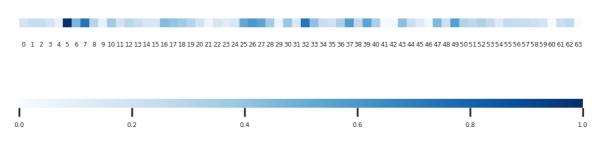
Source code snippet:



offset	MI score	Leakage model	Function
0x108fc4	0.826585	neural-learnt	DES_encrypt1

```
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
D_ENCRYPT(1, r, 28);  /* 15 */
D_ENCRYPT(r, 1, 30);  /* 16 */
```

Key bit dependencies (estimated):

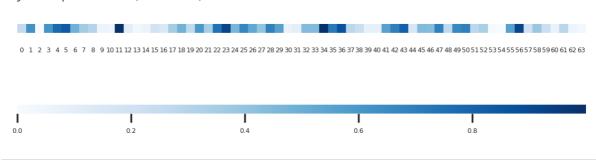


offset	MI score	Leakage model	Function
0x108dcc	0.81737	neural-learnt	DES_encrypt1

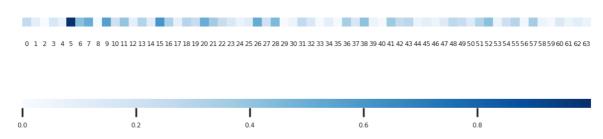
Source code snippet:

```
D_ENCRYPT(1, r, 16);  /* 9 */
D_ENCRYPT(r, 1, 18);  /* 10 */
D_ENCRYPT(1, r, 20);  /* 11 */
D_ENCRYPT(r, 1, 22);  /* 12 */
D_ENCRYPT(1, r, 24);  /* 13 */
D_ENCRYPT(r, 1, 26);  /* 14 */
```

Key bit dependencies (estimated):



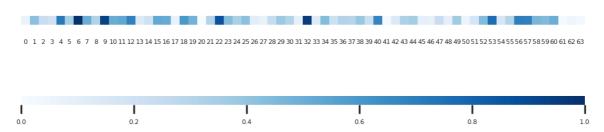
offset	MI score	Leakage model	Function
0x108e9f	0.808461	neural-learnt	DES_encrypt1



offset	MI score	Leakage model	Function
0x108759	0.74434	neural-learnt	DES_encrypt1

Source code snippet:

Key bit dependencies (estimated):



Grouped by function name

Function	Leak Count
DES_encrypt1	128
DES_set_key_unchecked	8
OPENSSL_hexchar2int	1
set_hex	1

All Leaks (summary), sorted by MI

offset	MI score	Leakage model	Function
0x111155	1.48753	neural-learnt	DES_set_key_unchecked
0x111266	1.47854	neural-learnt	DES_set_key_unchecked
0x111181	1.44628	neural-learnt	DES_set_key_unchecked
0x1111eb	1.44279	neural-learnt	DES_set_key_unchecked
0x108387	1.41744	neural-learnt	DES_encrypt1
0x111298	1.33979	neural-learnt	DES_set_key_unchecked
0x1083a6	1.3205	neural-learnt	DES_encrypt1
0x108e0a	1.28946	neural-learnt	DES_encrypt1
0x108fa9	1.28552	neural-learnt	DES_encrypt1
0x1a9af0	1.26796	neural-learnt	OPENSSL_hexchar2int
0x11123f	1.23345	neural-learnt	DES_set_key_unchecked
0x1092a5	1.22984	neural-learnt	DES_encrypt1
0x1083fe	1.22978	neural-learnt	DES_encrypt1
0x1090ce	1.22908	neural-learnt	DES_encrypt1
0x108930	1.21887	neural-learnt	DES_encrypt1
0x1084b0	1.21441	neural-learnt	DES_encrypt1
0x11120f	1.2141	neural-learnt	DES_set_key_unchecked
0x108aae	1.21079	neural-learnt	DES_encrypt1
0x108d73	1.20173	neural-learnt	DES_encrypt1
0x108d58	1.19477	neural-learnt	DES_encrypt1
0x109076	1.18844	neural-learnt	DES_encrypt1
0x108ca6	1.18824	neural-learnt	DES_encrypt1
0x108ef5	1.18057	neural-learnt	DES_encrypt1
0x108b44	1.17905	neural-learnt	DES_encrypt1
0x108b9c	1.17222	neural-learnt	DES_encrypt1
0x10928a	1.17207	neural-learnt	DES_encrypt1
0x10919b	1.17093	neural-learnt	DES_encrypt1
0x108841	1.16688	neural-learnt	DES_encrypt1
0x10862d	1.16432	neural-learnt	DES_encrypt1
0x035720	1.16133	neural-learnt	set_hex

offset	MI score	Leakage model	Function
0x1111b1	1.15831	neural-learnt	DES_set_key_unchecked
0x1088f2	1.15831	neural-learnt	DES_encrypt1
0x1087ce	1.14497	neural-learnt	DES_encrypt1
0x1092fe	1.13991	neural-learnt	DES_encrypt1
0x108f2e	1.13856	neural-learnt	DES_encrypt1
0x109109	1.13848	neural-learnt	DES_encrypt1
0x1086de	1.13462	neural-learnt	DES_encrypt1
0x1088b9	1.13447	neural-learnt	DES_encrypt1
0x1089a4	1.13308	neural-learnt	DES_encrypt1
0x108d95	1.13199	neural-learnt	DES_encrypt1
0x108686	1.13167	neural-learnt	DES_encrypt1
0x108a92	1.13157	neural-learnt	DES_encrypt1
0x108737	1.12919	neural-learnt	DES_encrypt1
0x108a3a	1.12864	neural-learnt	DES_encrypt1
0x10834c	1.12751	neural-learnt	DES_encrypt1
0x108bd7	1.12734	neural-learnt	DES_encrypt1
0x108368	1.12592	neural-learnt	DES_encrypt1
0x10894b	1.12317	neural-learnt	DES_encrypt1
0x1089e2	1.12292	neural-learnt	DES_encrypt1
0x1085ba	1.11768	neural-learnt	DES_encrypt1
0x108545	1.1164	neural-learnt	DES_encrypt1
0x10896d	1.1135	neural-learnt	DES_encrypt1
0x108b81	1.11229	neural-learnt	DES_encrypt1
0x108e7d	1.11072	neural-learnt	DES_encrypt1
0x108c8b	1.10467	neural-learnt	DES_encrypt1
0x108deb	1.10231	neural-learnt	DES_encrypt1
0x108491	1.10055	neural-learnt	DES_encrypt1
0x1090ea	1.09956	neural-learnt	DES_encrypt1
0x1087e8	1.09706	neural-learnt	DES_encrypt1
0x10866a	1.09565	neural-learnt	DES_encrypt1

offset	MI score	Leakage model	Function
0x1092e2	1.09487	neural-learnt	DES_encrypt1
0x1088d8	1.09397	neural-learnt	DES_encrypt1
0x109213	1.09341	neural-learnt	DES_encrypt1
0x10830f	1.09251	neural-learnt	DES_encrypt1
0x1087af	1.09102	neural-learnt	DES_encrypt1
0x10843b	1.09024	neural-learnt	DES_encrypt1
0x1091f4	1.08576	neural-learnt	DES_encrypt1
0x1086c4	1.08493	neural-learnt	DES_encrypt1
0x1086a5	1.08455	neural-learnt	DES_encrypt1
0x108774	1.08076	neural-learnt	DES_encrypt1
0x108419	1.0799	neural-learnt	DES_encrypt1
0x108d1a	1.07272	neural-learnt	DES_encrypt1
0x108472	1.06632	neural-learnt	DES_encrypt1
0x108b5f	1.06573	neural-learnt	DES_encrypt1
0x108826	1.06303	neural-learnt	DES_encrypt1
0x108988	1.05855	neural-learnt	DES_encrypt1
0x10901e	1.05565	neural-learnt	DES_encrypt1
0x108508	1.05323	neural-learnt	DES_encrypt1
0x108fff	1.05262	neural-learnt	DES_encrypt1
0x108e24	1.04896	neural-learnt	DES_encrypt1
0x108bb8	1.04861	neural-learnt	DES_encrypt1
0x108acd	1.04648	neural-learnt	DES_encrypt1
0x1090b3	1.04566	neural-learnt	DES_encrypt1
0x108c69	1.04527	neural-learnt	DES_encrypt1
0x109038	1.04331	neural-learnt	DES_encrypt1
0x108f87	1.04312	neural-learnt	DES_encrypt1
0x108331	1.04251	neural-learnt	DES_encrypt1
0x10864f	1.04022	neural-learnt	DES_encrypt1
0x109356	1.03899	neural-learnt	DES_encrypt1
0x1092c7	1.03781	neural-learnt	DES_encrypt1

offset	MI score	Leakage model	Function
0x108bf6	1.03771	neural-learnt	DES_encrypt1
0x108c10	1.03554	neural-learnt	DES_encrypt1
0x108b06	1.03353	neural-learnt	DES_encrypt1
0x10924c	1.03324	neural-learnt	DES_encrypt1
0x1082f4	1.03275	neural-learnt	DES_encrypt1
0x109128	1.02989	neural-learnt	DES_encrypt1
0x10857c	1.02714	neural-learnt	DES_encrypt1
0x10933c	1.0253	neural-learnt	DES_encrypt1
0x109142	1.02291	neural-learnt	DES_encrypt1
0x108db0	1.02153	neural-learnt	DES_encrypt1
0x108f6c	1.02048	neural-learnt	DES_encrypt1
0x108f14	1.02027	neural-learnt	DES_encrypt1
0x108456	1.01943	neural-learnt	DES_encrypt1
0x10931d	1.01786	neural-learnt	DES_encrypt1
0x10887e	1.01701	neural-learnt	DES_encrypt1
0x108863	1.01384	neural-learnt	DES_encrypt1
0x10871c	1.009	neural-learnt	DES_encrypt1
0x108612	1.00841	neural-learnt	DES_encrypt1
0x1091d8	1.00642	neural-learnt	DES_encrypt1
0x1085d4	1.00583	neural-learnt	DES_encrypt1
0x1084ca	1.00201	neural-learnt	DES_encrypt1
0x108ed6	1.00194	neural-learnt	DES_encrypt1
0x109091	0.999219	neural-learnt	DES_encrypt1
0x1089fc	0.997644	neural-learnt	DES_encrypt1
0x1083c0	0.997488	neural-learnt	DES_encrypt1
0x108a55	0.995844	neural-learnt	DES_encrypt1
0x108523	0.992062	neural-learnt	DES_encrypt1
0x108560	0.987648	neural-learnt	DES_encrypt1
0x108d00	0.984008	neural-learnt	DES_encrypt1
0x108fe0	0.977914	neural-learnt	DES_encrypt1

offset	MI score	Leakage model	Function
0x108e62	0.972554	neural-learnt	DES_encrypt1
0x109232	0.972179	neural-learnt	DES_encrypt1
0x108a77	0.968667	neural-learnt	DES_encrypt1
0x10889a	0.968433	neural-learnt	DES_encrypt1
0x108eba	0.966414	neural-learnt	DES_encrypt1
0x108cc2	0.955767	neural-learnt	DES_encrypt1
0x1091bd	0.951374	neural-learnt	DES_encrypt1
0x1089c3	0.950901	neural-learnt	DES_encrypt1
0x10859b	0.933349	neural-learnt	DES_encrypt1
0x108aec	0.927673	neural-learnt	DES_encrypt1
0x108790	0.890148	neural-learnt	DES_encrypt1
0x109180	0.882786	neural-learnt	DES_encrypt1
0x108c4e	0.876941	neural-learnt	DES_encrypt1
0x108ce1	0.86898	neural-learnt	DES_encrypt1
0x108fc4	0.826585	neural-learnt	DES_encrypt1
0x108dcc	0.81737	neural-learnt	DES_encrypt1
0x108e9f	0.808461	neural-learnt	DES_encrypt1
0x108759	0.74434	neural-learnt	DES_encrypt1