

main.c

Run

Output

Clear

```
1 #include <stdio.h>
2 #include <string.h>
3 #include <stdint.h>
4 #include <openssl/aes.h>
5
6 // Constants for CMAC subkey generation
7 #define BLOCK_SIZE_64 8
8 #define BLOCK_SIZE_128 16
9
10 // Rb constants for 64-bit and 128-bit blocks
11 const uint8_t Rb_64 = 0x1B;
12 const uint8_t Rb_128 = 0x87;
13
14 // Function to left-shift a block by 1 bit
15 void left_shift(uint8_t *input, uint8_t *output,
16                 int size) {
17     uint8_t carry = 0;
18     for (int i = size - 1; i >= 0; i--) {
```

```
/tmp/d05I1XLCmA/main.c: In function
'generate_cmac_subkeys':
/tmp/d05I1XLCmA/main.c:37:5: warning:
'AES_set_encrypt_key' is deprecated: Since OpenSSL
3.0 [-Wdeprecated-declarations]
37 |     AES_set_encrypt_key(key, block_size_bits,
    |     ^~~~~~
In file included from /tmp/d05I1XLCmA/main.c:4:
/usr/include/openssl/aes.h:51:5: note: declared here
51 | int AES_set_encrypt_key(const unsigned char
    |     ^~~~~~
/tmp/d05I1XLCmA/main.c:38:5: warning: 'AES_encrypt' is
deprecated: Since OpenSSL 3.0 [-Wdeprecated
-declarations]
38 |     AES_encrypt(zero_block, L, &aes_key); // L
    |     = E_K(0)
```

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63 }
64
65 int main() {
66     // Example 128-bit AES key
67     uint8_t key_128[16] = {
68         0x2b, 0x7e, 0x15, 0x16,
69         0x28, 0xae, 0xd2, 0xa6,
70         0xab, 0xf7, 0x3d, 0x00,
71         0x01, 0x02, 0x03, 0x04
72     };
73
74     printf("== CMAC Subkey Generation (128-bit\n\n");
75     generate_cmac_subkeys(key_128, 128);
76
77     return 0;
78 }
79

```

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