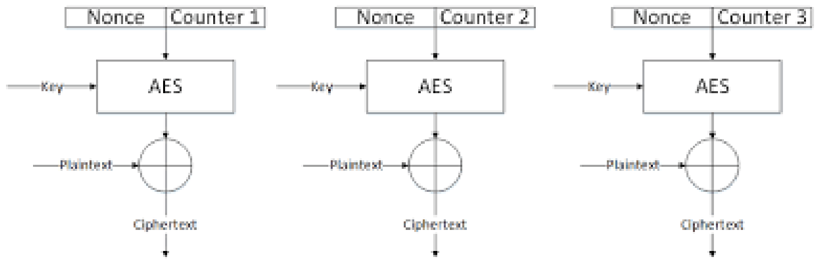
From the title of the challenge we are hinted that AES-CTR is in use:



After a bit of messing around with the service, we see that the same sequence of input provides the same outputs (the sequence starts when connecting to the service), so we naturally assume it does the last part of AES-CTR, the XOR.

The rest of the challenge is pretty random and nonsensical. Basically, each line in ctr.txt is a ciphertext of a word that happens at the **K**-th iteration in the sequence. After getting some of those **K** values (the point in the sequence when the ciphertext can be decrypted) we realize they correlate to ASCII values.

So the solution takes a line from ctr.txt, starts the connection, tries to decrypt it, and when it does so the iteration number is transformed into the ASCII character. The character is then appended to a string, we close the connection, and repeat:

```python
from pwn import *
context.log_level = 'error'
host = '34.159.156.124'
port = 30746
with open('ctr.txt', 'r') as ctr_file:
    ctr_lines = [line.strip() for line in ctr_file.readlines()]
final_message = ""
for line in ctr_lines:
    line_bytes = bytes.fromhex(line)
    conn = remote(host, port)
    for iteration in range(256):
        conn.sendline(line_bytes)
        response1 = conn.recvline().strip().decode()
        response2 = conn.recvline().strip().decode()
        hex_string = response2.split(" ")[-1]
        try:
            decrypted_message = bytes.fromhex(hex_string).decode('utf-8')
            capital_count = 0
            result_message = ""
            for char in decrypted_message:
                if char.isupper():
                    capital_count += 1
                if capital_count == 2:
                    break
                result_message += char
            char_from_iteration = chr(iteration+1)
            final_message += char_from_iteration
            print(f"Current final message: {final_message}")
            break
        except (UnicodeDecodeError, ValueError):
            pass
    conn.close()
```

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