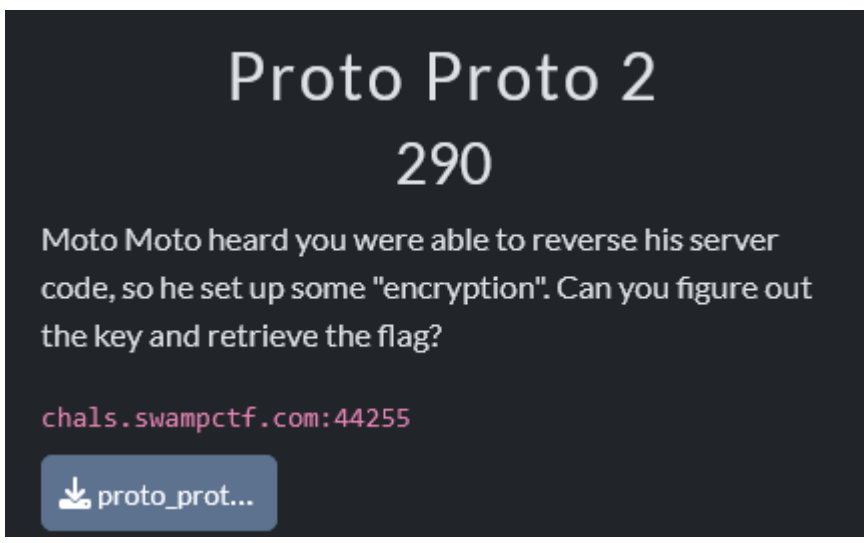
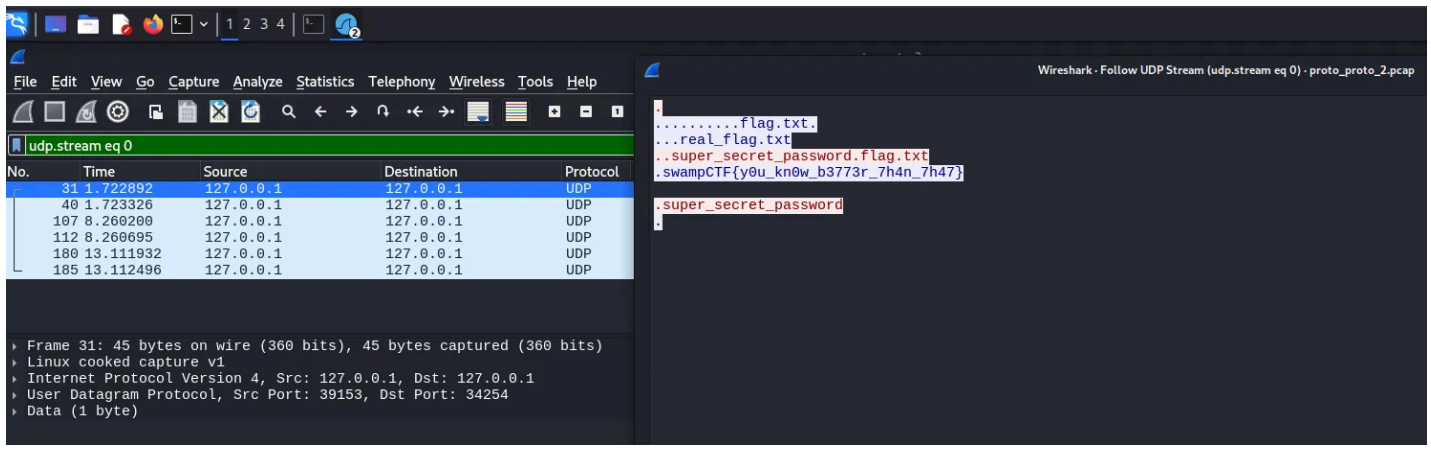
Forensics - Proto Proto 2



The task description hints at some encryption. Let's look at the UDP traffic in the new pcap file:



We can see that the client gets the flag using: **super_secret_password.flag.txt**. We need to somehow get the value of super_secret_password.

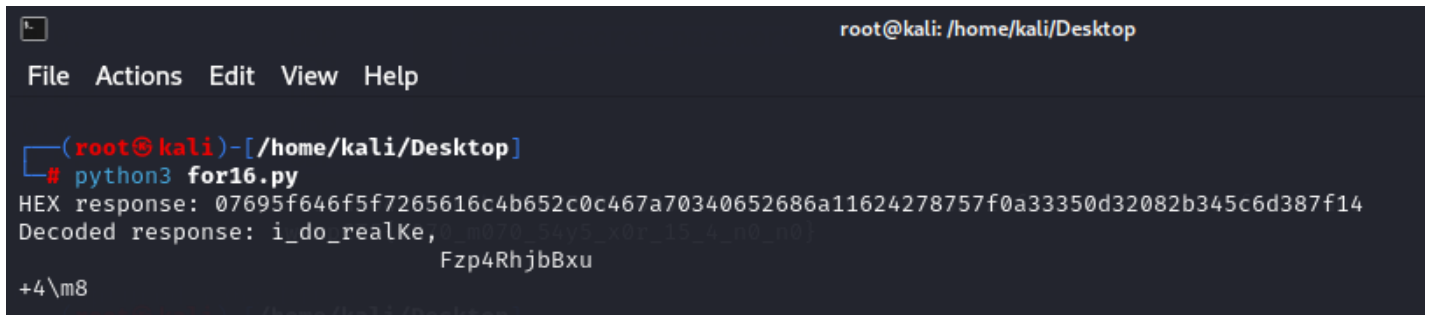
What if we try to pass the value of a fake flag (**swampCTF{y0u_kn0w_b3773r_7h4n_7h47}**) from a pcap file as super_secret_password, and then add **.flag.txt**? Let's try it.

Our script (the logic is the same as in the previous Proto Proto challenge):

```
import socket  # Importing the socket library to create a network connection

# Define the server's address and port number
server = "chals.swampctf.com"
port = 44255

# Construct the payload that will be sent to the server
payload = (
    b"\x02"  # The first byte is likely a protocol identifier or header (starting byte)
    + len(b"swampCTF{y0u_kn0w_b3773r_7h4n_7h47}").to_bytes(1, "big")  # Length of the first string ("swampCTF{y0u_k
    + b"swampCTF{y0u_kn0w_b3773r_7h4n_7h47}"  # The first string, which is the value to be sent to the server
    + len(b"flag.txt").to_bytes(1, "big")  # Length of the second string ("flag.txt") in a single byte
    + b"flag.txt"  # The second string, which is the value to be sent to the server
)

# Create a UDP socket (AF_INET for IPv4, SOCK_DGRAM for UDP)
s = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)

# Send the constructed payload to the server at the specified address and port
```

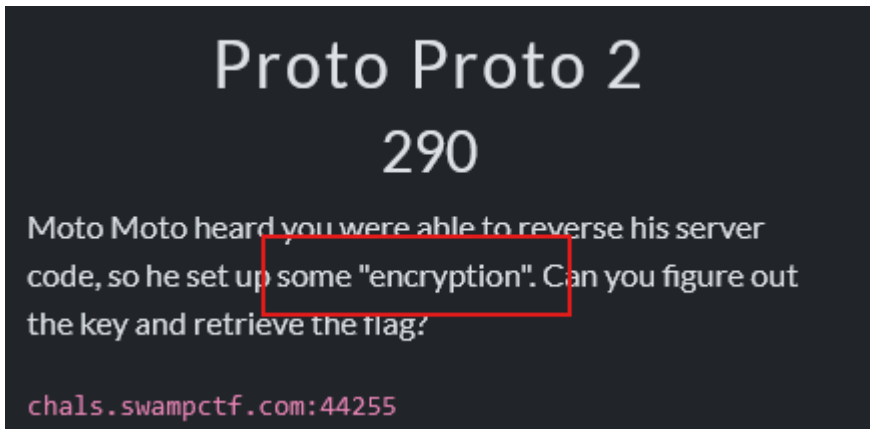
```
s.sendto(payload, (server, port))

# Receive the response from the server, up to 4096 bytes
response, addr = s.recvfrom(4096)

# Close the socket after receiving the response to free up resources
s.close()

# Print the response in hexadecimal format for inspection (useful for debugging)
print("HEX response:", response.hex())

# Print the decoded response (decoding may ignore non-UTF characters)
print("Decoded response:", response.decode(errors='ignore'))
```

Execute it:



In Decoded response we got **part of the key**! You might think that "Ke" is part of the key, but by changing the key with the fake flag to just "swampCTF", we get exactly **i_do_real**. So, part of the key: **i_do_real...**

Next, you actually need to guess the rest of the key a little bit... Let's look at the challenge description again:



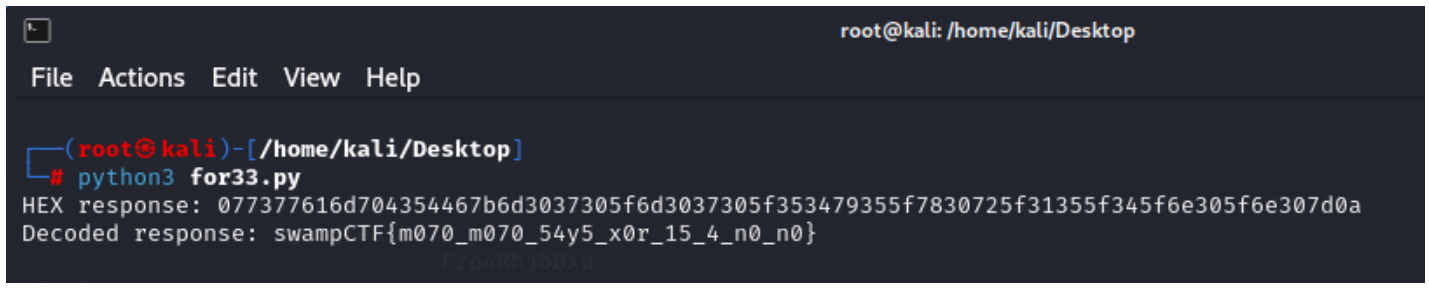
Why not use the word "encryption" as the rest of the key? Let's try this option and our key will be: **i_do_real_encryption** //A bit of a guess, I know :)

Let's change the key in the previous code to our new key:

```
import socket

server = "chals.swampctf.com"
port = 44255

payload = (
    b"\x02"
    + len(b"i_do_real_encryption").to_bytes(1, "big")
    + b"i_do_real_encryption"
    + len(b"flag.txt").to_bytes(1, "big")
    + b"flag.txt"
)

s = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
s.sendto(payload, (server, port))
response, addr = s.recvfrom(4096)
```

```
s.close()

print("HEX response:", response.hex())
print("Decoded response:", response.decode(errors='ignore'))
```

Execute it:



We got the flag!

Flag: **swampCTF{m070_m070_54y5_x0r_15_4_n0_n0}**