



Cybersecurity

Module 10 Challenge Submission File

Cryptography Challenge: Ransomware Riddles

Make a copy of this document to work in, and then for each mission, add the solution below the prompt. Save and submit this completed file as your Challenge deliverable.

Ransomware Riddles

1. Riddle 1:

Riddle 1 (answer is 8 to the left of alphabet) “gruber”

Congrats, you have solved the first riddle, Your first key is: 6skd8s

2. Riddle 2:

Did the binary to text converter-01000111 01100101 01101110 01101110
01100101 01110010 01101111
Gennero

RIDDLE 2

Congrats for solving the second riddle, the key is: cy8snd2

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cy8snd2

3. Riddle 3:

Cipher Text:

4qMOIvwEGXzvKmvRE2bNbg==

Key:

5284A3B154D99487D9D8D8508461A478C7BEB67081A64AD9A15147906E8E8564

IV (Initialization Vector):

1907C5E255F7FC9A6B47B0E789847AED

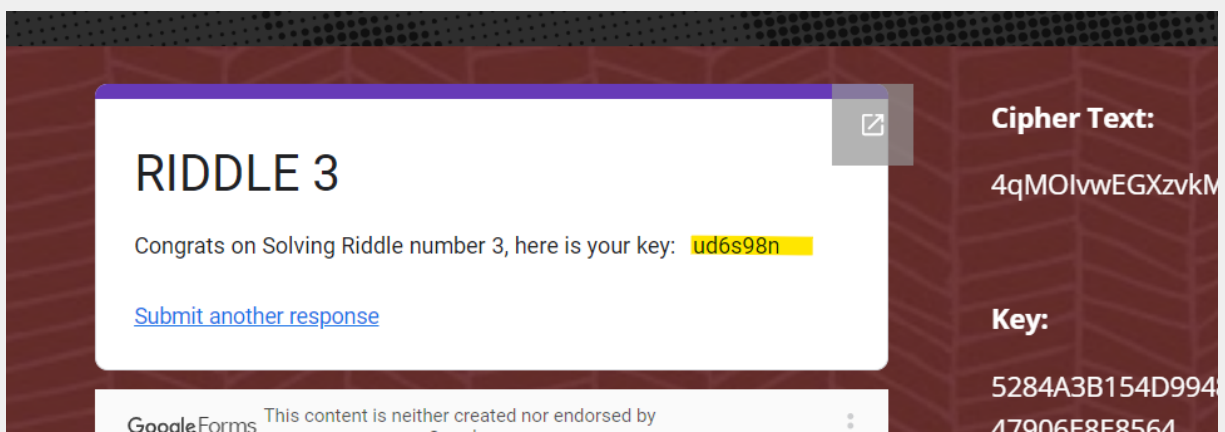
OpenSSL Options:

```
-pbkdf2  
-nosalt  
-aes-256-cbc  
base64
```

first step was to create file riddle3.txt and place the Cipher Text inside
sysadmin@UbuntuDesktop:~\$ echo "4qMOIvwEGXzvKmvRE2bNbg==" > riddle3.txt
second step was to encrypt by adding the key and IV to the file.

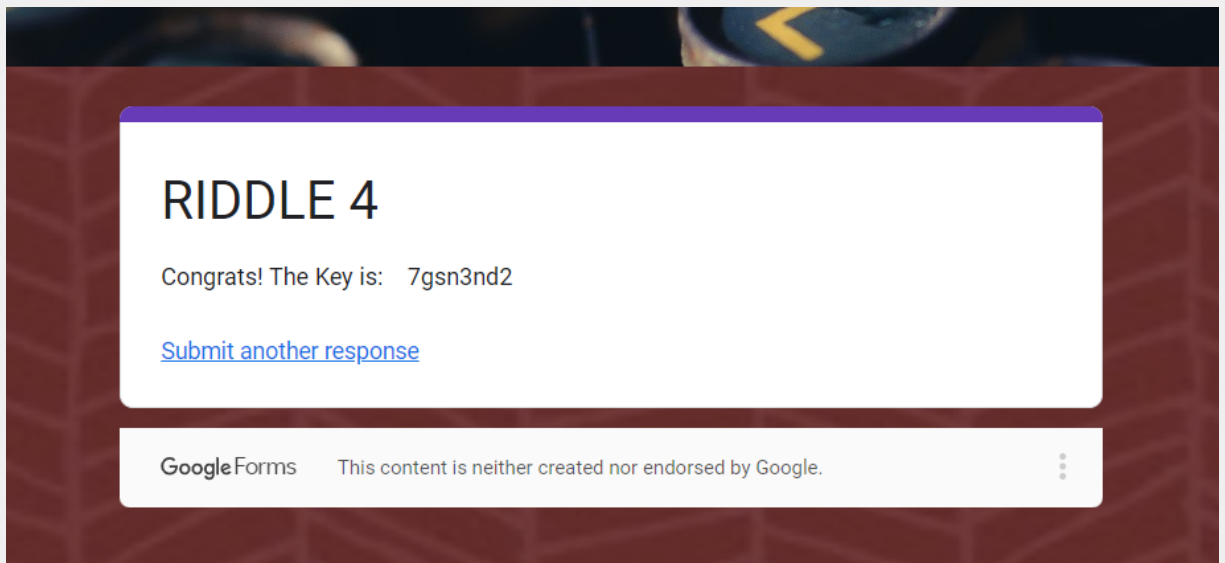
```
ysadmin@UbuntuDesktop:~$ openssl enc -pbkdf2 -nosalt -aes-256-cbc -in
riddle3.txt -out riddle3.txt.enc -base64 -K
5284A3B154D99487D9D8D8508461A478C7BEB67081A64AD9A15147906E8E8564 -iv
1907C5E255F7FC9A6B47B0E789847AED
3rd step was to decrypt to find the hidden word-
openssl enc -pbkdf2 -nosalt -aes-256-cbc -in riddle3.txt -d -base64 -K
5284A3B154D99487D9D8D8508461A478C7BEB67081A64AD9A15147906E8E8564 -iv
1907C5E255F7FC9A6B47B0E789847AED
takagi
```

“Takagi” was the secret word.



4. Riddle 4:

Answer to the 1st question is Jill's public key. 2nd answer is using Jill's private key. 3rd answer is 15 symmetric and 12 asymmetric keys. Final question is Alice's public key.

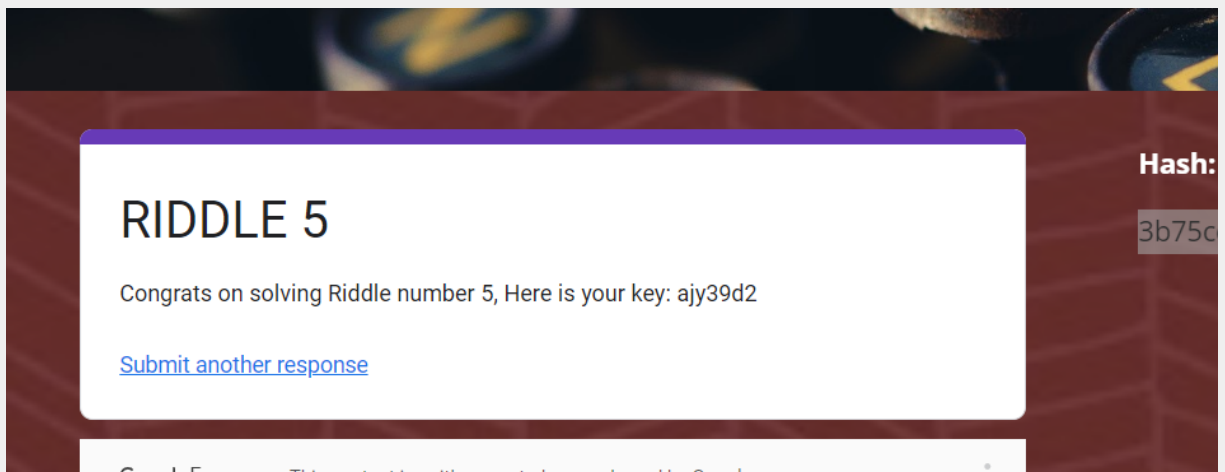


5. Riddle 5:

Here we need to reverse the MD5 key given by going to the following webpage and entering the key 3b75cdd826a16f5bba0076690f644dc7.

<https://md5.gromweb.com/?md5=3b75cdd826a16f5bba0076690f644dc7>

they answer is **argyle**.

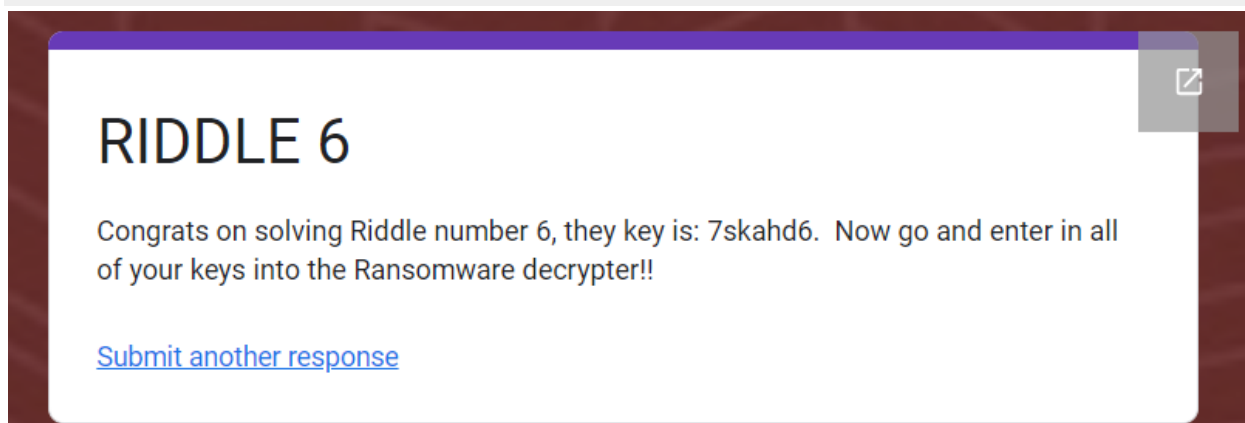


6. Riddle 6:

first step is to download the mary-lamb.jpg picture into Ubuntu. After that, I had to figure out the passphrase. After a few attempts, I entered "ABC" in caps and was able to view the hidden file.

after I cat the file, the word "mcclane" was visible.

```
sysadmin@UbuntuDesktop:~$ mv Downloads/mary-lamb.jpg .
sysadmin@UbuntuDesktop:~$ steghide extract -sf mary-lamb.jpg
Enter passphrase:
steghide: could not extract any data with that passphrase!
sysadmin@UbuntuDesktop:~$ steghide extract -sf mary-lamb.jpg
Enter passphrase:
steghide: could not extract any data with that passphrase!
sysadmin@UbuntuDesktop:~$ steghide extract -sf mary-lamb.jpg
Enter passphrase:
wrote extracted data to "code_is_inside_this_file.txt".
sysadmin@UbuntuDesktop:~$ cat code_is_inside_this_file.txt
mcclane
```



Ransomware Screenshot

1. Include a screenshot showing proof that you've decrypted the ransomware:

RANSOMWARE DECRYPTER

Congratulations! You have decrypted the Ransomware! All the Nakatomi Hospital Records are now Decrypted! Please take a screenshot of this message and submit as your homework!

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