Lab 3

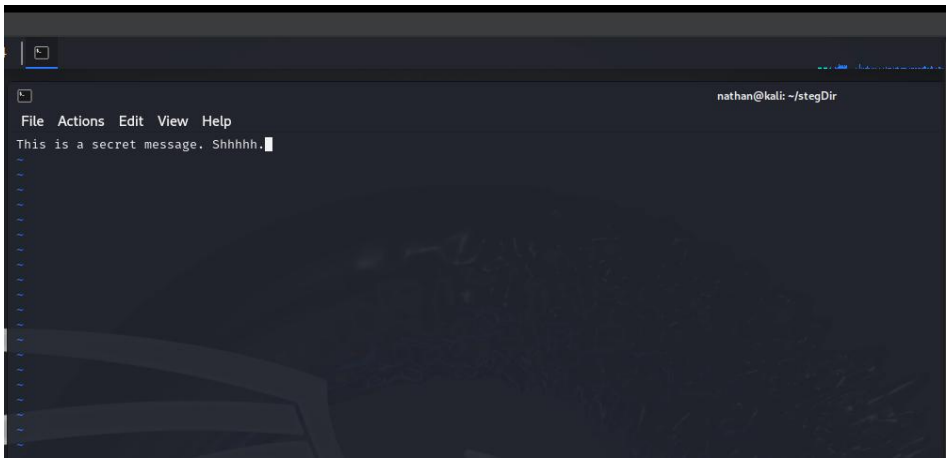
Tasks

1. Open the terminal in Kali Linux and install gedit using the command: sudo apt install gedit.

2. Create a new directory named stegDir using the mkdir command.

3. Go to the stegDir directory and create a new file named testfile.txt using the touch command.

4. Open the file testfile.txt using gedit and add some secret message there as the file content. Take a screenshot showing the secret message you added.



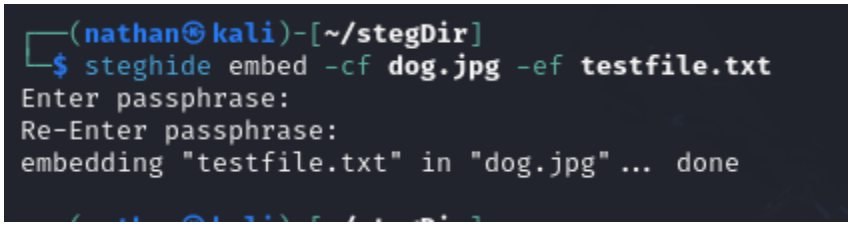
5. Open Firefox (in Kali Linux) and download a random image of a dog. Name the downloaded file as dog.jpeg. The image will be downloaded in the Downloads folder by default.

6. Copy the image from the Downloads directory to the stegDir directory using the cp command. The stegDir directory should have two files by now: testfile.txt and dog.jpeg.

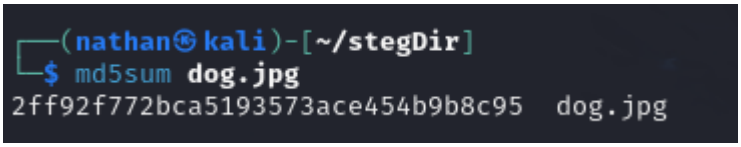
   Use ls command to show the contents of the stegDir directory and take a screenshot to attach it in your submission.

7. Execute the md5sum command to check the checksums for both testfile.txt and dog.jpeg. Learn about MD5 here: https://phoenixnap.com/kb/md5sum-linux). Take a screenshot similar to the following screenshot.

8. Use the steghide command to embed your testfile.txt (with secret message) into the image file dog.jpeg as shown in the following example screenshot (note: when prompted for the passphrase, you may type any password of your choice (pass)). Take a screenshot showing the command and the relevant output from the terminal.

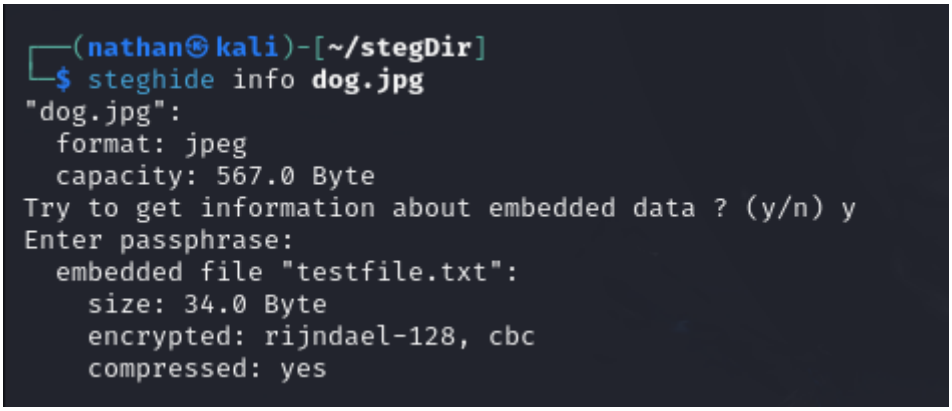


9. Execute the command md5sum for dog.jpeg to check the hash for the image file. Do you see any difference? Take a screenshot showing the command and the output hash.



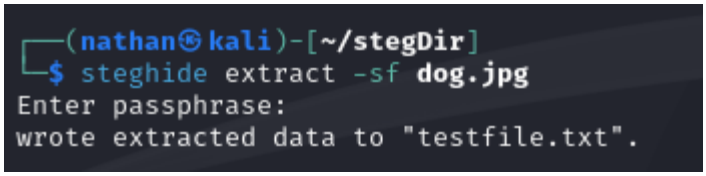
There is a difference between the original hash and the new one for dog.jpg

10. Execute the steghide command to get some information about dog.jpeg before extracting it. Take a screenshot showing the command and the output.



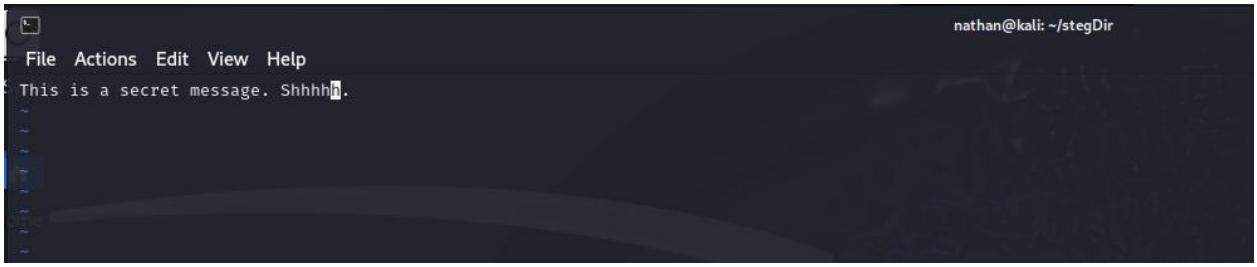
11. Now, delete the file testfile.txt using the rm command. Use the ls command to show the contents of the stegDir directory and take a screenshot

12. Extract the secret message by executing the steghide command with - - extract option. Take a screenshot showing the command and the output in the terminal.

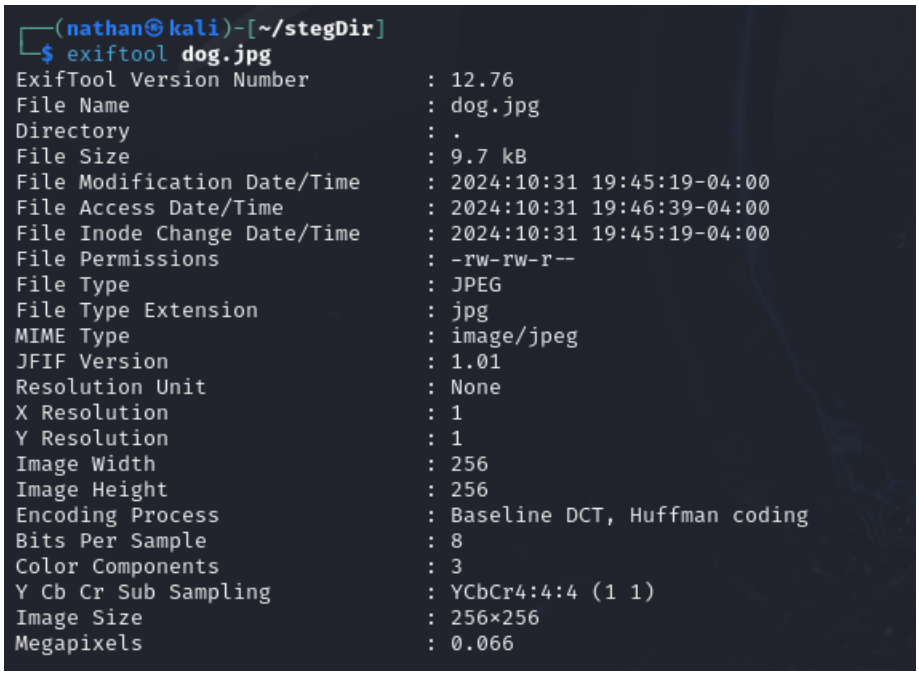


13. Execute the ls command to list the contents in the stegDir directory. You should see testfile.txt there because it was hidden in the dog.jpeg image file and appeared after extracting the image file in the previous step (step-12). Take a screenshot showing the contents of the stegDir directory.

14. See the contents of file testfile.txt

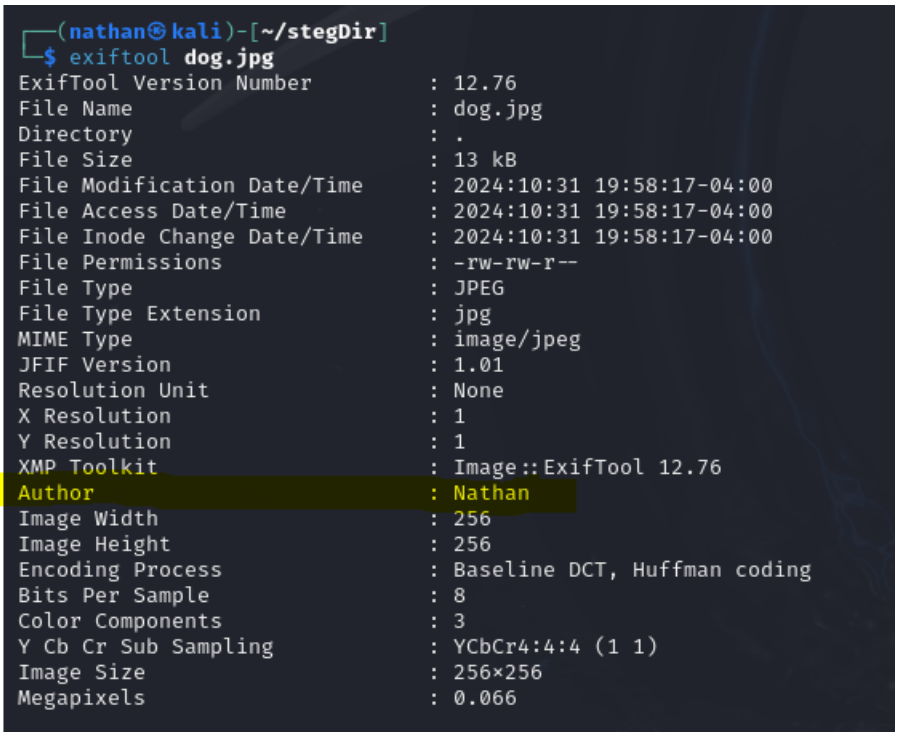


15. See the metadata of the file dog.jpeg using the exiftool command

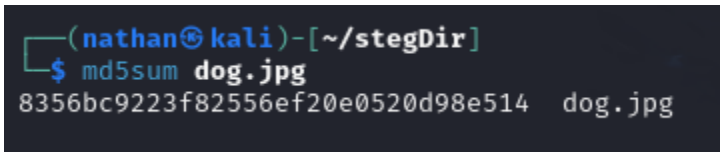


16. Change the author of the file dog.jpeg using the exiftool command

17. Repeat the step-15 and take a screenshot showing the updated metadata of the file dog.jpeg. Highlight the author's name in the screenshot.



18. Execute the md5sum command for dog.jpeg. Do you see any change in the hash value? If yes, take a screenshot of the new hash and compare it with the previous hash you received in step-9.



The hash value has changed again for dog.jpg and it is ***different*** from the screenshot in step 9, as seen below.