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Writeup for challenge ENHANCE!

ABOUT ECSC

The growing need for IT security professionals is widely acknowledged worldwide. To help mitigate this shortage of skills, many countries launched national cybersecurity competitions targeting towards students, university graduates or even non-ICT professionals with a clear aim to find new and young cyber talents and encourage young people to pursue a career in cyber security. The European Cyber Security Challenge (ECSC) leverages on these competitions by adding a pan-European layer.

The European Cyber Security Challenge is an initiative by the European Union Agency for Cybersecurity (ENISA) and aims at enhancing cybersecurity talent across Europe and connecting high potentials with industry leading organizations.

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1. Information regarding the challenge

## Challenge specification

* Challenge Category: Forensics
* Difficulty: Medium
* Expected time to solve: 3h

## Technical Specification

### Required infrastructure

No infrastructure is required to prepare the challenge. Solving can be done offline.

### Provided files

Figure 1: List of files

|  |  |  |  |
| --- | --- | --- | --- |
| File name | Format | Comment | Checksum (SHA256) |
| decode.py | Python script | Solver script by author | 51c0d68638d9385d8d9e40cd6c2bae3585b9259c26fa4733e0411c57172ba0f6 |
| ecsc\_enhance3.pcap | PCAP file | Challenge | 4cfe1ffae44c879fadbe0dc99869be53bd200c38b4e97f290f368ea850d4a637 |

1. Attack Scenario

## Description of the scenario

Challenge is about finding out all images from PCAP dump and modifying them inside some Graphics processor to combine them to get the flag from resulting image.

## Installation Instructions

You only need to distribute the file **ecsc\_enhance3.pcap** to the contestants.

## Tools needed for solving the challenge

Needed tools are:

* Wireshark
* Graphics processor (GIMP, Photoshop etc.)

## Walkthrough (Writeup)

1. Use provided decode.py script to get everything you need to get the flag.
   1. The script will iterate and get all ICMPv6 destination addresses and will reconstruct all images by using coordinates and RGB-triplets from addresses.
   2. Images are saved to the folder
   3. Each image can be edited to be read better – XOR, brightness and other techniques
   4. Images can be combined in Graphics processor
   5. Edit each image’s opacity to get the flag.
2. Flag:  
   **ECSC{e99565674c223c064beff0d68303ec7f}**



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