1337Phone

50

Stego

We capture a FILE and seems some kind of communication, but we can't make sense of it. Can you help us find their secret code?

Unlock Hint for 5 points

Unlock Hint for 10 points

Unlock Hint for 10 points
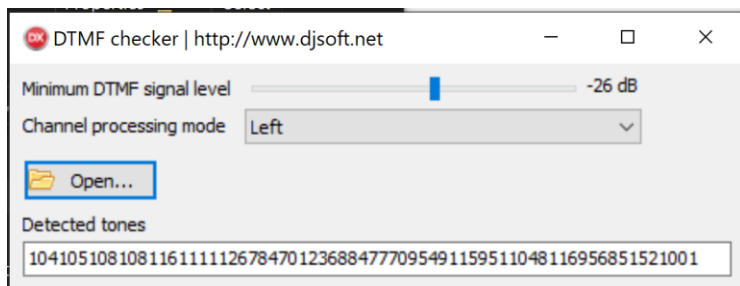
⬇ file

Flag

Submit

Answer: We have a file called file and nothing else.

Using the file command we can see that this is a wav file. Command: file file

```
kali@kali:~/Pictures$ file file
file: RIFF (little-endian) data, WAVE audio, Microsoft PCM, 8 bit, mono 8000 Hz
```

Listening to the file it sounds like DTMF (dual tone multi frequency) or dial tones when you press keys on your phone.

What we need to do is convert the audio to the numbers that were pressed. To do this I'm going to use and old software call DTMF checker http://dl.djsoft.net/DTMFChecker.zip we select the wav file as input and receive our output.

Now that we have number let's see what we're looking at. It seems to be a decimal string as it doesn't match output for a t9 message. Let's separate are values and decode using cyberchef https://gchq.github.io/CyberChef/

Looks good except that last character. Using an online tool http://dialabc.com/sound/detect/index.html we can see that we are missing the last two values

1	12,592 ± 15	12,712 ± 15	120 ± 30
o	12,803 ± 15	12,893 ± 15	90 ± 30
o	12,983 ± 15	13,104 ± 15	120 ± 30
1	13,194 ± 15	13,315 ± 15	120 ± 30
2	13,405 ± 15	13,496 ± 15	90 ± 30
5	13,586 ± 15	13,706 ± 15	120 ± 30

Adding those gives us the flag

FLAG: hilltopCTF{DTMF_1s_n0t_D34d}

This can also be done in kali using multimon-ng and sox.

First make sure you install multimon-ng and sox if not already installed

apt-get install sox

apt-get install multimon-ng

next let multimon-ng decode the file using the below command

multimon-ng -a DTMF -t wav "/home/kali/Pictures/file.wav"

```
root@kali:/home/kali/Pictures# multimon-ng -a DTMF -t wav "/home/kali/Pictures/file.wav"
multimon-ng 1.1.8
  (C) 1996/1997 by Tom Sailer HB9JNX/AE4WA
  (C) 2012-2019 by Elias Oenal
Available demodulators: POCSAG512 POCSAG1200 POCSAG2400 FLEX EAS UFSK1200 CLIPFSK FMSFSK AFSK1200 AFSK2400 AFSK2400_2 AFSK2400_3 HAPN48
00 FSK9600 DTMF ZVEI1 ZVEI2 ZVEI3 DZVEI PZVEI EEA EIA CCIR MORSE_CW DUMPCSV X10 SCOPE
Enabled demodulators: DTMF
DTMF: 1
DTMF: 0
DTMF: 4
DTMF: 1
DTMF: 0
DTMF: 5
DTMF: 1
DTMF: 0
DTMF: 8
DTMF: 1
DTMF: 0
DTMF: 8
DTMF: 1
DTMF: 1
DTMF: 6
DTMF: 1
DTMF: 1
DTMF: 1
DTMF: 1
DTMF: 1
DTMF: 2
DTMF: 6
```