

Starting the challenge, we are given a zip as usual.

```
kali@kali:~/ctf/hackthebox/challenges/stego/milkshake/test$ ls
milkshake.zip
```

We can unzip it using the password "hackthebox". Doing so gives us an mp3 file called Milkshake.mp3 which is also a song by Kelis.

```
kali@kali:~/ctf/hackthebox/challenges/stego/milkshake/test$ unzip milkshake.zip
Archive: milkshake.zip
[milkshake.zip] Milkshake.mp3 password:
  inflating: Milkshake.mp3
kali@kali:~/ctf/hackthebox/challenges/stego/milkshake/test$ ls
Milkshake.mp3  milkshake.zip
kali@kali:~/ctf/hackthebox/challenges/stego/milkshake/test$
```

We can listen to the file using *mpg123* which can be installed with

*sudo apt install mpg123*

```
kali@kali:~/ctf/hackthebox/challenges/stego/milkshake/test$ mpg123 Milkshake.mp3
High Performance MPEG 1.0/2.0/2.5 Audio Player for Layers 1, 2 and 3
version 1.26.3; written and copyright by Michael Hipp and others
free software (LGPL) without any warranty but with best wishes

Terminal control enabled, press 'h' for listing of keys and functions.

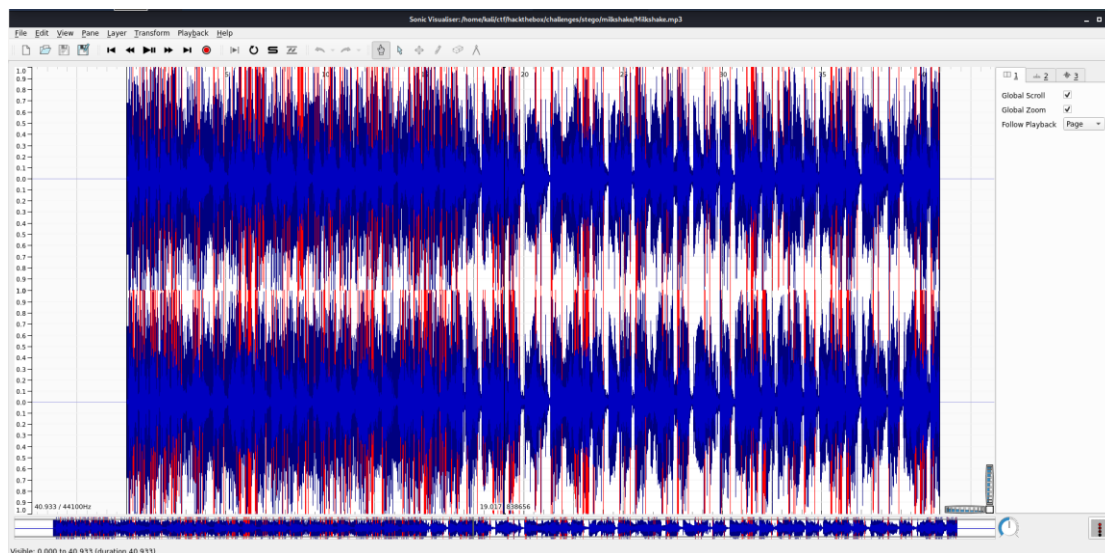
Playing MPEG stream 1 of 1: Milkshake.mp3 ...

MPEG 1.0 L III vbr 44100 j-s

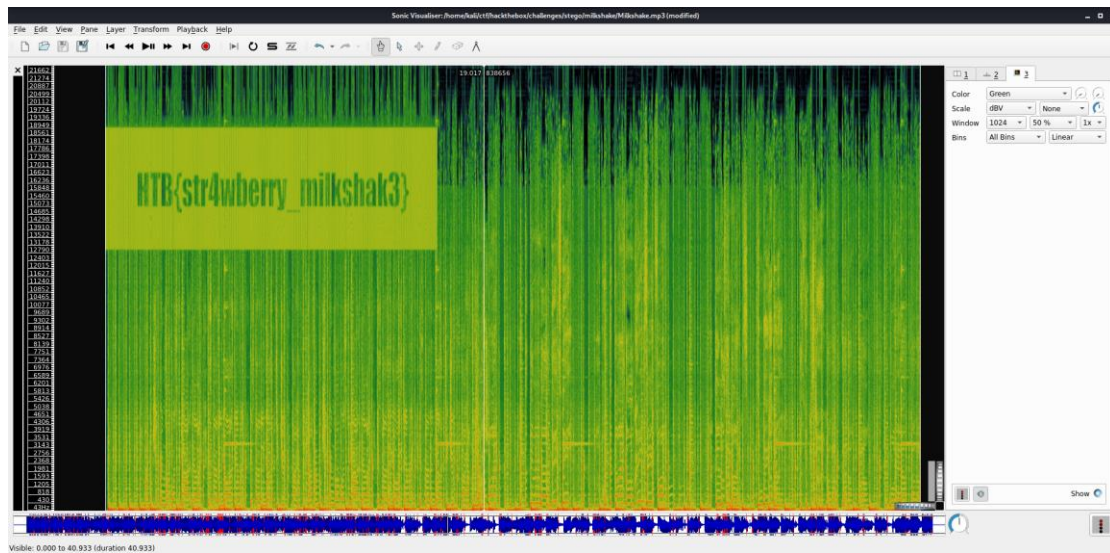
Title: Milkshake
Comment: 000007A5 000006CA 00007311 000075EA 0001A567 0001A567 00008000 00008000 0000005C 0000005C
Year: 2003
Artist: Kelis
Album: The Neptunes Present-Clones-AD
Genre: Hip-Hop

[0:40] Decoding of Milkshake.mp3 finished.
```

Listening closely to the audio we can hear some weird noises in the higher frequencies. This hints that something in the audio is changed so we look deeper into the file by opening it in *Sonic Visualiser*.



At first glance we don't see much so we analyze the file further by looking at the **spectrogram**.



Looking at the spectrogram we can clearly see a flag and that is our challenge.