**magpieCTF 2020 – The Choice Of Experience**

**Author:**

* **Category: Forensics**
* **Points:**
* **Difficulty: Beginner**
* **Skills: Forensic Analysis/Reversing**

**Description**

The wolf\_raven mp3 file has part of the flag “magpie{5yn” at the 1 minute mark when viewing the audio as a spectrogram. The timecop\_1983 file has the second part of the flag “tH\_15\_80’5k1n6}” at the 3 minute mark when viewing the audio as a spectrogram. The synth\_mix file is a mix of both of these files where I purposely obfuscate the flag by moving the audio so that “magpie{5yn” aligns with the 3 minute mark which in turn aligns on top of the other part of the flag so that it looks like an illegible garble of letters. The challenge consists of reversing this process.

**Hints**

1. Try using audacity
2. Try looking at the audio files as spectrograms
3. Try to somehow “cancel out” the first part of the flag in synth\_mix (suggest to look up inverting maybe)

**Challenge**

The challenge involves the synth\_mix and raven\_wolf mp3 files and requires “cancelling out” raven\_wolf from synth\_mix to get the full flag.

**80s Connection**

Synth music

**Solution**

First step is to view the audio files as spectrograms. Second step is to align the chunk of flag in raven\_wolf to the 3 minute mark so that it in turn aligns with the garbled flag in synth\_mix. After aligning them, raven\_wolf needs to be inverted and finally a new mix needs to be created. This new mix will have raven\_wolf subtracted from synth\_mix which will ungarble the spectrogram, revealing the second part of the flag.

**Flag:** magpie{5yntH\_15\_80’sk1n6}