Outline

• Intro
• What
• Usage
• Idea
• How it Works
• Why Under Radar
• Action 😊
Quick Intro.

• Steganography
  – Hiding the existence of the data

• Covert Channel
  – Unseen “secret” communication

• Exfiltration (aka Exfil)
  – Illegal retrieval of data from a compromised computer
Why Social Networks & Multimedia?
46% of time people share videos using Facebook

40% of the time they use email

14% they use Twitter

Cisco expects video to account for 69% of all internet traffic by 2017

The average American spent more than 20 hours watching online video in September 2013
MOBILE VIDEO CONSUMPTION INCREASED BY 41% BETWEEN JANUARY 2013 & JUNE 2013

92% OF MOBILE VIDEO Viewers Share Videos With Others

MORE THAN 40% OF YOUTUBE VIEWS ARE ON MOBILE DEVICES
YouTube receives more than 1,000,000,000 unique visitors each month, more than any other channel, apart from Facebook.
The World's Largest Video Sharing Platform

2nd Largest Search Engine

3rd Most Visited Website in the World

35 Hours of video footage is uploaded to the site every minute. That's over 18 million hours of footage in a single year!

YouTube Mobile gets over 100 Million views per day!

Over 3,000,000,000 Videos are viewed every single day!
By 2018 video will account for over 2/3 of mobile usage.
Hackers Exfiltrating Data with Video Steganography via Cloud Video Services

KEN WESTIN
@TripeWire
What: UYR?

- New application layer covert channel and exfiltration system
- Applies multimedia stego techniques
- Hard for Radars to detect what’s being sent
Usages?

- Covert Communications
- Exfiltrating Data
Idea?

• No real data is transmitted!
• Only data transmitted is a bunch of numbers (key)!
How it works?
Protocol Agreements

- Social Media Used
- Video Used
Extract Frames

Frame 1

Frame 2

Frame 3

Frame 4

Frame 5
Upload Character Map
Extract Hidden Message/Data
Why Hard to Detect?

Evade current detection techniques

- UYR has no signature
- No pattern or anomaly
- No proof to correlate between the video + image used
References


[3] https://www.youtube.com/watch?v=QfVVfB_UHeA


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