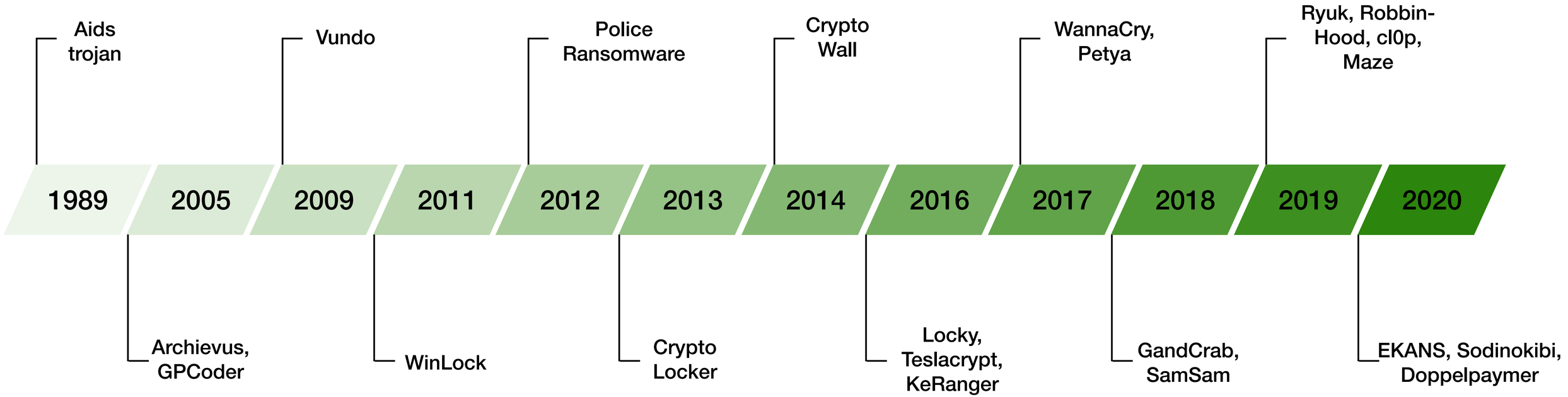
Where is my Ransom?

Hunting for Ransomware Gangs using radare2 and YARA

Kevin Gomez — 5th September 2020


Blog Post
Ransomware warning: Now attacks are
>_ CL0P^_- LEAKS
HOME
PLANATOL.DE
UPDATES
Ransomware-as-a-Service: Ransomware Operators Find Ways to Bring in Business
02 de septiembre de 2016
Public Service Announcement
FEDERAL BUREAU OF INVESTIGATION
October 02, 2019
Alert Number
I-100219-PSA
Questions regarding this PSA should be directed to your local FBI Field Office.
Local Field Office Locations: www.fbi.gov/contact-us/field
HIGH-IMPACT RANSOMWARE ATTACKS THREATEN U.S. BUSINESSES AND ORGANIZATIONS
This Public Service Announcement (PSA) is an update and companion to Ransomware PSA I-091516-PSA posted on www.ic3.gov. This PSA contains updated information about the ransomware threat.
WHAT IS RANSOMWARE?
Ransomware is a form of malware that encrypts files on a victim's computer or server, making them unusable. Cyber criminals demand a ransom in exchange for providing a key to decrypt the victim's files.
Ransomware attacks are becoming more targeted, sophisticated, and costly, even as the overall frequency of attacks remains consistent. Since early 2018, the incidence of broad, indiscriminant ransomware campaigns has sharply declined, but the losses from ransomware attacks have increased significantly, according to complaints received by IC3 and FBI case information.
Although state and local governments have been particularly visible targets for ransomware attacks, ransomware actors have also targeted health care organizations, industrial companies, and the transportation sector.

What changed?



What do I want to achieve?

- Learn about ransomware and evolvements within families
- Find newest samples of different families
- Detect code sharing between families
- And maybe, see potential incidents based on VirusTotal uploads

How to achieve those?

- Utilise Yara as a classification and identification tool
- VirusTotal and Hybrid Analysis for hunting
- Radare2 and Cutter for malware analysis

YARA

Name of the rule and optional tags

Add context to the rule

Define what to look for

Trigger condition of the rule

```
1   rule r2con2020
2   {
3       meta:
4           description = "Determine if r2con 2020 is awesome"
5           author = "@kgbuquerin"
6           date = "2020-09-05"
7           reference = "https://www.radare.org/con/2020/"
8
9       strings:
10          $s0 = "r2con" fullword
11          $s1 = "is" wide ascii
12          $s2 = "pretty"
13
14          $b1 = { 61 77 65 73 6f 6d 65 }
15
16          $x0 = "boring" xor
17
18      condition:
19          all of ($s*) and $b1 and not $x0
20  }
```

What did I do?

1. Collect initial samples
2. Create first rule
3. Test rule against different test-sets
4. Hunt for more samples
5. Create better rules
6. Goto 3

Maze

Ransomware

cl0p

Ransomware

To summarise

✓

- Learn about ransomware families
- Find newest versions

✗

- Detect code sharing across them

?

- See incidents by VirusTotal uploads

- Test your rules properly
- Use unique strings
- Think about opcodes

Thank you for your attention!

Have fun at 

 @kgbuquerin

 https://github.com/kgbuquerin