FRIDA🎅

BINARY INSTRUMENTATION VIA FUNCTION HOOKING

WHAT WE'LL COVER

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1. Hooking use cases

WHAT WE'LL COVER

1. Hooking use cases
2. Tool of choice

WHAT WE'LL COVER

1. Hooking use cases
2. Tool of choice
3. Demo

HOOKING USE CASES🎅🏻

HOOKING USE CASES?🎅🏼

- insert logging (like print debugging)

HOOKING USE CASES?🎅🏽

HOOKING USE CASES?🎅🏽

- change code logic

HOOKING USE CASES?🎅

- change code logic
    - via parameters

HOOKING USE CASES?🎅🏽

- change code logic
  - via parameters
  - function calls

HOOKING USE CASES?🎅🏽

- change code logic
  - via parameters
  - function calls
  - etc.

HOOKING USE CASES?🎅🏾

- sniff network traffic (e.g. by hooking functions which write on the wire)

HOOKING USE CASES?🎅🏿

- bypass protections (in creative ways)

TOOL OF CHOICE - FRIDA🤶🏾

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- instrumentation toolkit for native apps

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- scriptable with JavaScript !!

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  - i.e. Windows, Linux, Mac, Android, IOS

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- instrumentation toolkit for native apps
- scriptable with JavaScript !!
- supports multiple platforms
  - i.e. Windows, Linux, Mac, Android, IOS
- paired with a set of powerful tools

TOOL OF CHOICE - FRIDA🤶🏾

- instrumentation toolkit for native apps
- scriptable with JavaScript !!
- supports multiple platforms
    - i.e. Windows, Linux, Mac, Android, IOS
- paired with a set of powerful tools
- free and open source

DEMO - LINUX🤶🏾

DEMO - LINUX🤶🏽

DEMO - LINUX🤶🏽

1. Insert debugging calls

DEMO - LINUX🤶🏽

1. Insert debugging calls
2. Hot-Reload

DEMO - LINUX🤶🏽

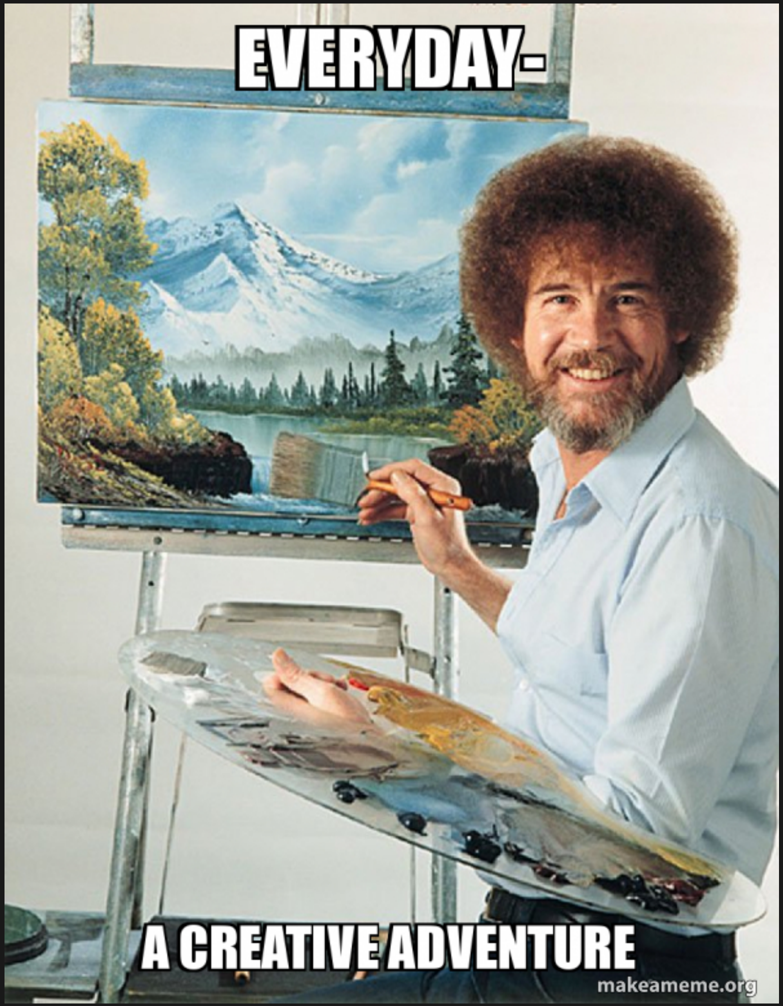
1. Insert debugging calls
2. Hot-Reload
3. Change function's parameters

DEMO - LINUX🤶🏽

1. Insert debugging calls
2. Hot-Reload
3. Change function's parameters
4. Change function behaviour

DEMO - LINUX🤶🏽

1. Insert debugging calls
2. Hot-Reload
3. Change function's parameters
4. Change function behaviour
5. Call a declared function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DEMO - ANDROID🤶🏼

DEMO - ANDROID🎅🏻

DEMO - ANDROID🎅🏻

1. Change the return value of a function

DEMO - ANDROID🎅

1. Change the return value of a function
2. Change UI component

DEMO - ANDROID🎅🏻

1. Change the return value of a function
2. Change UI component
3. Root detection bypass

DEMO - ANDROID🎅

1. Change the return value of a function
2. Change UI component
3. Root detection bypass
4. Password Check Bypass

Questions? 🤶

Thank you! 🎄

RESOURCES:

1. https://frida.re/
2. https://codeshare.frida.re/
3. https://mas.owasp.org/MASTG/apps/android/MASTG-APP-0003/