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SCIENCE
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Live Data Analysis with using VPNService

Fabian Gruber, Béla Lemle

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Agenda

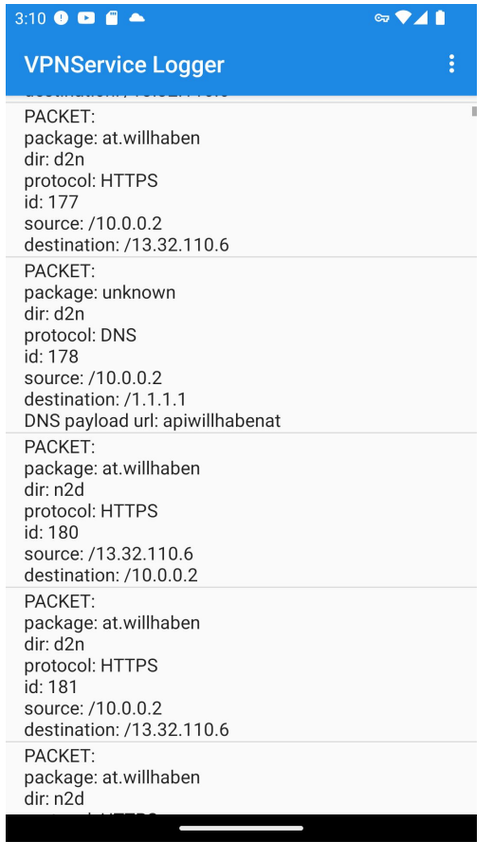
- VPNService
- Framework and implementation
- Analysis of apps

VPNService

- Class for apps to build own VPN solutions
- Virtual network interface, routing rules, addresses, file descriptor
- Read from fd -> outgoing packet that was routed to the interface
- Write to fd -> injected packets are as if they were received through the interface
- Security measures:
  - user interaction needed to start the VPN service
  - only one service at a time
  - visible on the device if the service is running (system managed)
- BUT no root access required to use it

Implementation

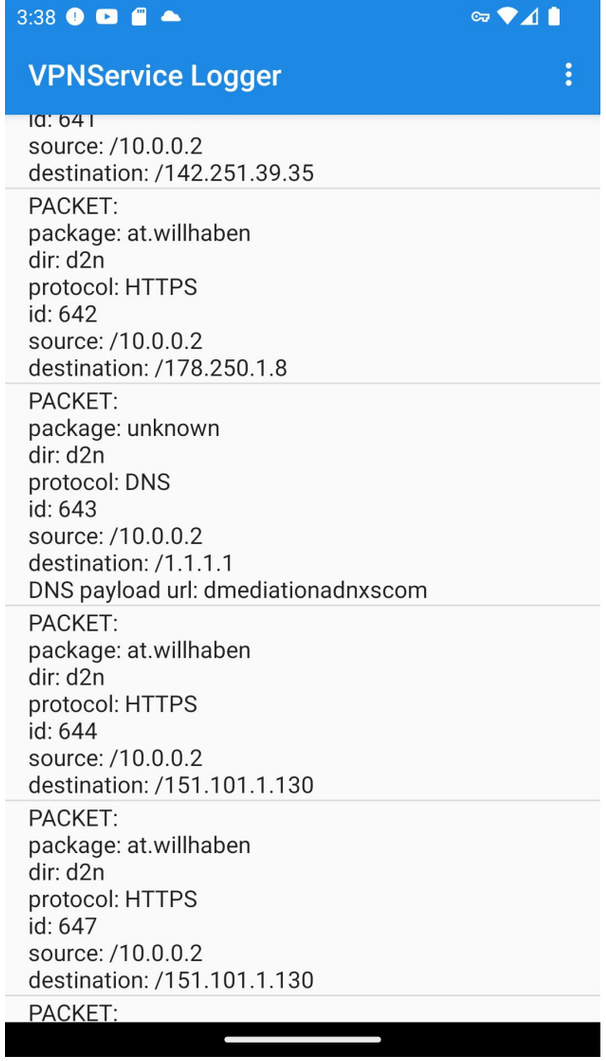
- Simple framework
  - Just build the VPN tunnel with the Builder class
  - Only one button on the UI to start the VPNService
- Our contribution
  - Create a UI for the live packet analysis
  - Differentiate between TCP, UDP, HTTP, HTTPS, DNS packets
  - Extract payload of DNS requests
  - Specify the app where the packet comes from
  - Display packet related data (e.g. source/destination addresses)

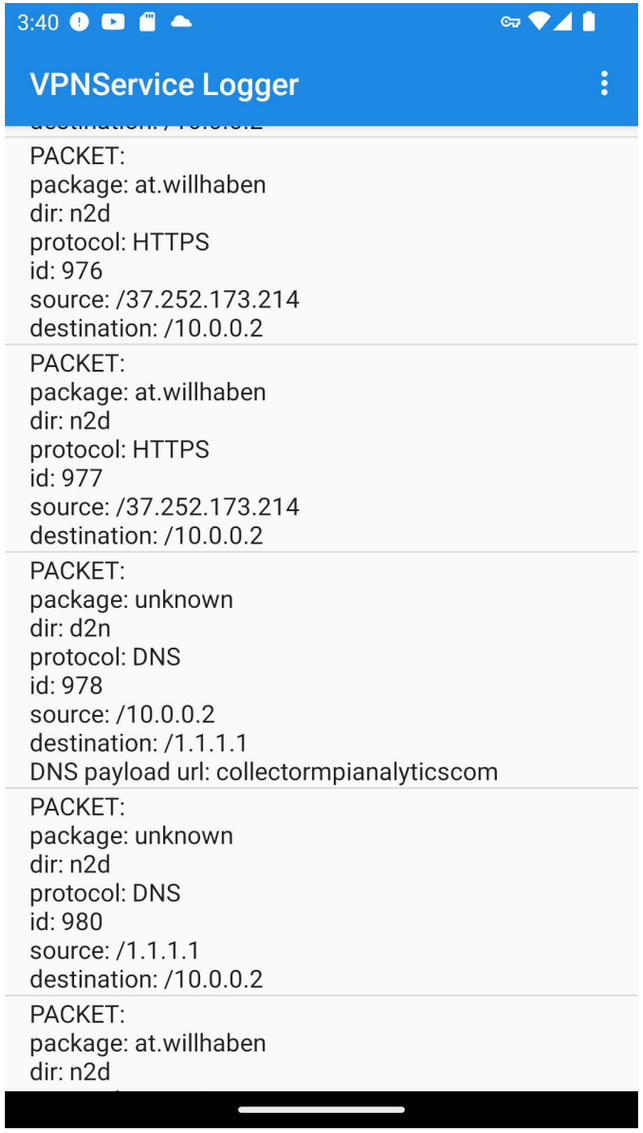


Live Analysis

Packet Analysis

willhaben.at





Packet Analysis

(http app)