COURSE OFFER

Date
2023-03-02

Page
1/2

Course name
CAN Hack!

Version
2.1

CAN Hack! Hands-On Automotive Security

Introduction
Assured offers an automotive security workshop called "CAN Hack!", aimed at anyone interested in the security of connected vehicles. The course combines theoretical lectures with hands-on challenges against a physical, simulated car. The course is designed to be delivered as a one-day workshop with theoretical and practical parts in an interactive fashion.

Participants will learn how a modern vehicle communicates internally (between components), as well as externally with the driver, passengers and remote services and how to exploit vulnerable or weak implementations of security concepts.

Participants are intended to work in teams of two and will be provided with all the necessary tools and configuration needed to connect to the challenge platform, named "CyCar". This device tries to simulate a vehicle equipped with engine, infotainment and telematics systems.

The CyCar challenge platform
Our challenge platform "CyCar" consists of readily available components that are assembled into a small but realistic vehicle, consisting of an engine, infotainment and telematics unit. The "engine" ECU controls vehicle characteristics such as speed, lights, locks and engine state. The infotainment unit provides the driver simple interface to interact with the vehicle. The telematics unit is equipped with connectivity such as Bluetooth and Wi-Fi as well as higher-level applications and services. The ECUs communicate over the CAN bus, and the traffic can be monitored via a CAN interface.

The CyCar platform has intentionally implemented vulnerabilities, and the challenge is to find and exploit them. The vulnerabilities are inspired from real hacks and security issues commonly encountered in the automotive industry. It is an exploratory lab environment developed to provide the user with useful knowledge for both attacking and securing vehicles.

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Page
2/2

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SECURITY CONSULTANTS

Course syllabus

Gear 1 (1h)

Introduction, theory
- Background
- Network standards
- Security concepts
- Cryptography
- Connectivity

Gear 3 (1h)

Theory
- Bluetooth Low Energy
- CyCar introduction
- Attack vectors
- Tools

Gear 5 (3,5h)

Practical
- Instructor-assisted challenges, CTF
- Racing the CyCars

Gear 2 (1h)

Theory
- CAN bus
- ISO-TP
- UDS
- CAN security

Gear 4 (1h)

Practical
- Lab setup
- Trying out the tools
- Team registration

Gear R (0,5h)

Recap
- Summary
- Prize ceremony
- Conclusions
- Evaluation