Cybersecurity Summer Intern

Overview

Keysight is on the forefront of technology innovation, delivering breakthroughs and trusted insights in electronic design, simulation, prototyping, test, manufacturing, and optimization. Our ~15,000 employees create world-class solutions in communications, 5G, automotive, energy, quantum, aerospace, defense, and semiconductor markets for customers in over 100 countries. Learn more about what we do.

Our powerful, award-winning culture embraces a bold vision of where technology can take us and a passion for tackling challenging problems with industry-first solutions. Diversity, equity & inclusion are integral parts of our culture and drivers of innovation at Keysight. We believe that when people feel a sense of belonging, they can be more creative, innovative, and thrive at all points in their careers.

In general, IoT devices control physical interfaces and acquire information from the external world, and those information needs to be constantly sent to a server directly or through a gateway. This scenario exposes IoT devices to be targeted by malicious actions. On the other hand, discussions in consortiums and government organizations are consolidating security requirements for IoT devices. However, aligning the product's security level, alongside the security requirements consolidation, with the market goals and providing ways to validate those requirements automatically is becoming more necessary.

Given this scenario, this work aims to implement a 5G testbed for IoT devices, especially for those categorized as consumer devices (cameras, smart locks, smart plugs, etc.), to serve as a platform for creating automated and semi-automated security test cases for the whole IoT ecosystem.

Responsibilities

We are looking for a Summer Intern whose main objective is to create a testbed for IoT devices (consumer category) to be used in security assessment, the most relevant standards and guidelines must be considered to define the security test cases that can be automated. This work will start from previous research in Keysight, which was built up on top of open-source (Nmap, OpenTap, Ettercap, Open5GS, srsRAN, etc.) and Keysight private (IoT Security Assessment, CyPerf, BreakingPoint and LoadCore) tools.

You will have access to our state-of-the-art laboratory at **Keysight Laboratories Technology** and all the equipment you need to make this project a reality!

Qualifications

- You are studying towards a degree in Computer Science or related areas (e.g. Electrical Engineering).
- You have knowledge of low-level program languages like C, and have basic knowledge of OO, for instance, using C++ language.

- You know abstracted concepts of communication protocol (handshakes, acknowledges, etc.).
- You know the main pillars of the security area (confidentiality, integrity, and availability) and can associate them with examples or have practical experience implementing something.
- It’s a plus if
    - You are familiar with software development to automate computer tasks.
    - You used some control-version software (git, svn, etc.).
    - You like to know how stuff works and go deep to figure out this if documentation is not available on the internet.
    - You are familiar with working with Linux operation systems.
    - You have already participated in some capture the flag (CTF) events.

Careers Privacy Statement

Keysight is an Equal Opportunity Employer.