



AimValley is a world class engineering and innovation center that designs and builds networking solutions. We are based in Hilversum, with a strong presence in the USA and India. We started in 2003 as a spin-off from Lucent Technologies (a successor from the American company AT&T), that is why we have a strong background in telecommunication solutions and have build-up vast expertise in real-time processor techniques. Most of our design & development is done in-house.

Product development entails preparation of requirement documents, specification of system architecture, electronic development (block diagrams, board design, system certification, mechanical design), FPGA/ASIC development, software development, system verification and product/factory introduction. AimValley makes use of FPGAs to process high speed transmission functions. Real-time requirements are also key in our software development.

Our business is about people and our teams are dynamic, skilled and passionate about technique. Recruiting and training the right talent is an essential part of the AimValley DNA. We have over 80 employees of which 75% works as design expert in the R&D organization. All R&D employees have a college or university level education.



Project Introduction - Web & REST Security Analysis

AimValley has developed many Ethernet switching systems and has developed in-house an Ethernet stack called AimOS to manage those systems. The AimOS Ethernet is primarily a configuration management solution for embedded systems with support for Ethernet L2/L3 switching.

Recently we added a webUI and a REST-API interface to the existing management agents.

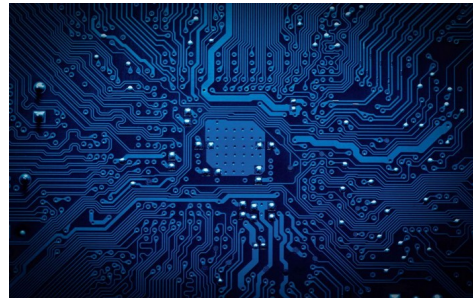
These new interfaces are not secured yet and we want to take steps to secure them before we expose them externally.

Project Description

The assignment consists of a security analysis of the webUI and REST-API implementation, an automated security test and an implementation of the suggested security improvements. The investigation is expected to go beyond a general “use HTTPS” recommendation. Expected is a thorough security analysis of the software architecture, taking into account various attack vectors using BlackDuck, PEN test tools, Wireshark, John the ripper, fuzzy testing, etc.

Complexity

- > This is an embedded system and is limited in CPU performance, memory and flash size. This will limit the number of security measures.
- > Part of the complexity lies in the fact that scope is not limited to networking but actually expects the student to dive into the architecture and come up with suggestions to isolate and secure data in the architecture.



Keywords for this project

- > OWASP, fuzz testing, DOS,
- > Arbitrary code execution,
- > Privilege escalation, PHP,

Affinity

- > Security & Test Automation
- > Web applications, REST APIs
- > Python, C/C++, PHP, HTML

Skills

- > Analytic Investigation
- > Independent & Communicative
- > Competent in English

Are you a student with a can-do attitude and a passion for technology?
AimValley is your company!

Why not join us today: working@aimvalley.com