Abstract

**P4PI** is P4 (Data plain programming language) on Raspberry PI SBC (Single Board Computer used in many implementations including IOT). **P4PI** is a small scale functional programmable switch/Router based on open source code (T4P4S P4 Compiler) and open source hardware.

P4PI reference architecture:
The data plane is P4 programmable with several switch architectures available. We will use the V1 model architecture to program a L2 switch using T4P4S switch program.

Further information can be found in the P4PI repo: [https://github.com/p4lang/p4pi](https://github.com/p4lang/p4pi)

**Objective**

The purpose of this project is to develop a private encrypted network (Tunneling) using 2 P4PI devices.

**Project Overview**

1. Install basic L2 switch on RaspberryPi 4 ([https://github.com/p4lang/p4pi/wiki](https://github.com/p4lang/p4pi/wiki), [https://github.com/p4lang/p4pi/wiki/Running-P4-examples-on-P4Pi](https://github.com/p4lang/p4pi/wiki/Running-P4-examples-on-P4Pi)).
2. Implement encrypted tunneling
3. Define KPIs (Key Performance Indicators) and analyze the performance of the system.

**Notes**

- The above list is an estimate. Goals and tasks might be modified during the first few weeks of the projects before the finalization of High Level Design Document.
- General requirements for all LCCN Projects are specified at the lab website: [https://lccn.cs.technion.ac.il/lab-courses/](https://lccn.cs.technion.ac.il/lab-courses/)
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