On-the-fly attachable Network Analysis

Industrial machines and scenarios rely on real-time requirements within their networks. For adding new devices or performing an individual software update, analyzing the traffic is necessary [1, 2]. Current options are to use the device statistics of connected devices or analyze pre-recorded traffic. This theses aims to build a hardware and software solution to analyze traffic parameters such as used bandwidth and holding cycle times on-the-flight within the network using mirrored ports and a Rasberry Pi [3] as device. The results need to be presented in real-time using a web application to allow simple and on-demand analysis of networks and their parameters. For testing purposes, the analysis of pre-recorded traffic and data generated on our Testbed is possible. Further scenarios require that the solution can be plugged-in and out on-demand and as needed. The analysis is only done using passive measurements.

- General interest in computer networks
- Experience with Linux and Lua programming
- Experience with Rasberry Pi

Your Profile

- Conducting research on on-demand real-time network analysis
- Analyze current solutions for traffic analysis
- Developing a new solution to analyze traffic in real-time on-demand
- Evaluate the prototype and its benefits

Literature


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