

Linux client with WiFi and LTE



Mobile Communications

Pascal Maissen, Jovana Micic and Noé Wysshaar

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What is this project about?

- Study DASH video delivery in a mobile scenario using WiFi and LTE
- Study performance gain in a **dynamic** multi-interface scenario
- Evaluate the quality gain in:
 - the **parallel** LTE/WiFi video transmission
 - to the **single** LTE transmission using MPTCP

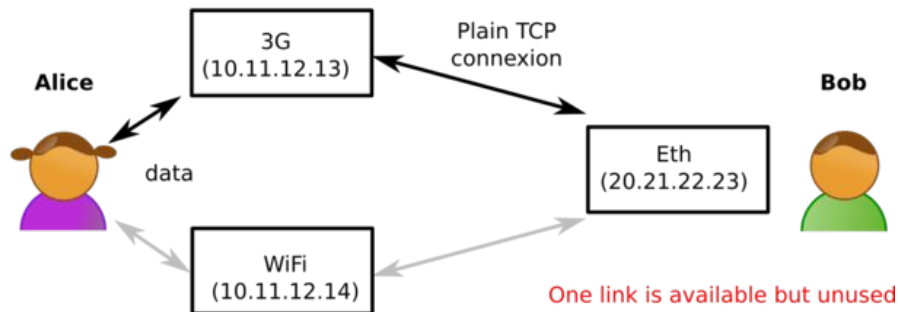
What is DASH?

- Dynamic Adaptive Streaming over HTTP
- Streaming technique that enables high quality streaming of media content over the Internet
- Adapts to changing network conditions
- Video segments of some seconds in different qualities

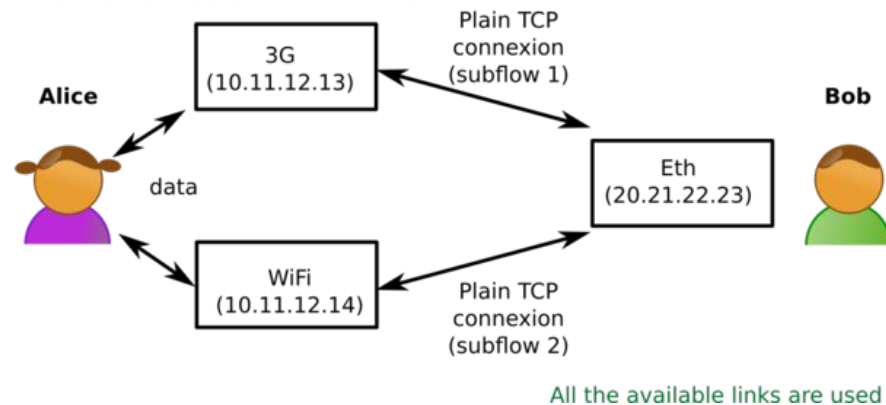
What is MPTCP?

- Multi-path TCP
- Protocol on the Transport Layer
- Defined by RFC6356 and RFC6824
- Packets are coordinated and sent over different paths
- Linux kernel MPTCP implementation

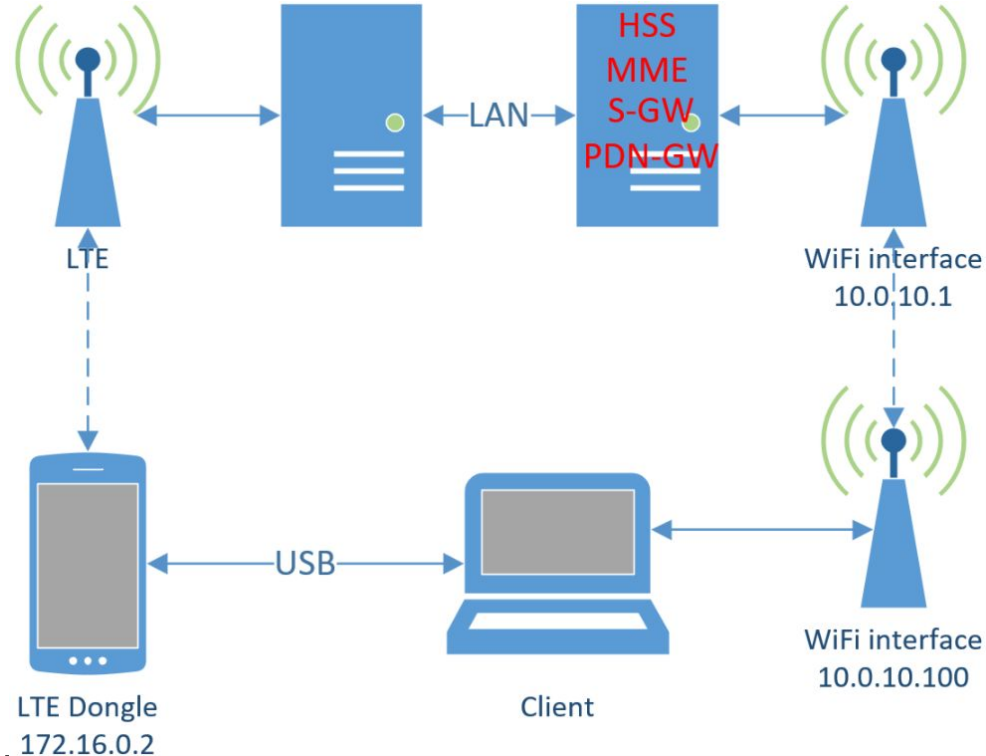
Data transmission with plain TCP



Data transmission with MPTCP



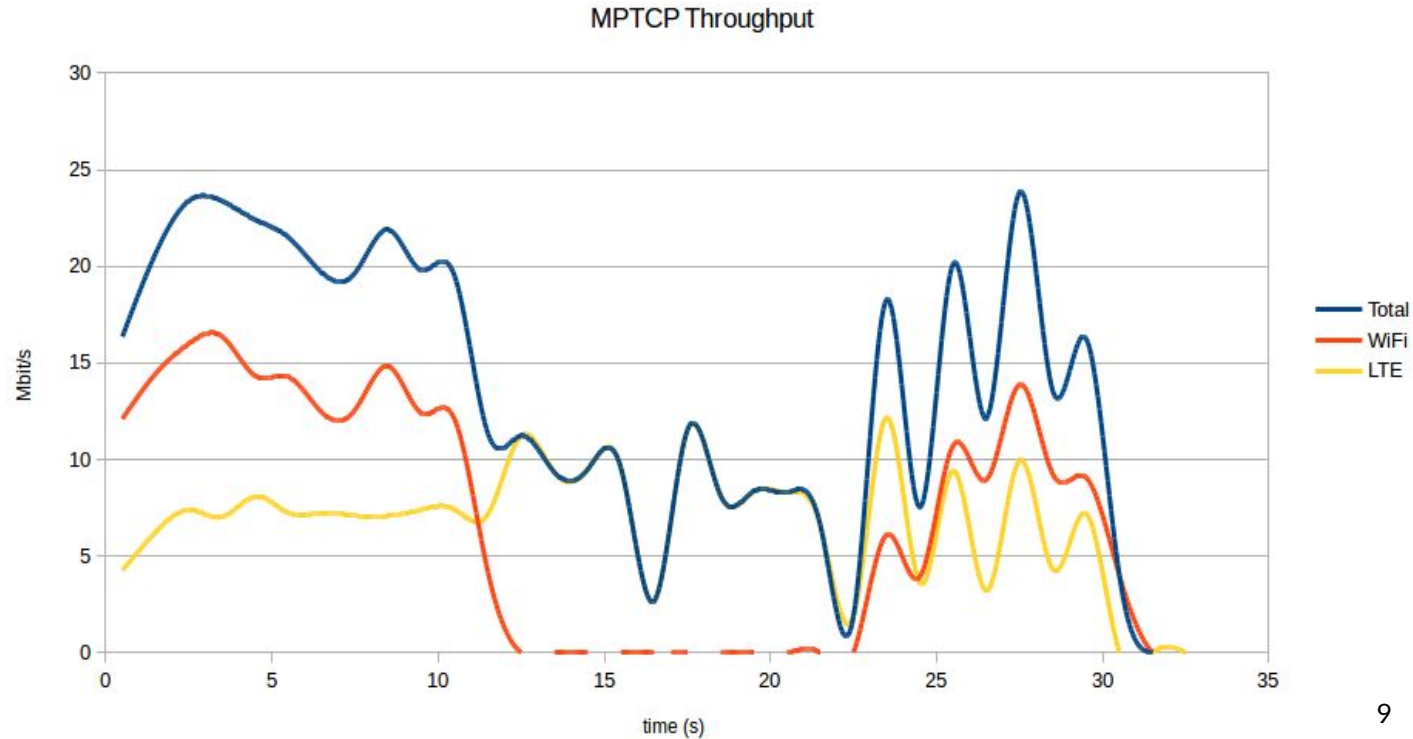
Experimental Setup



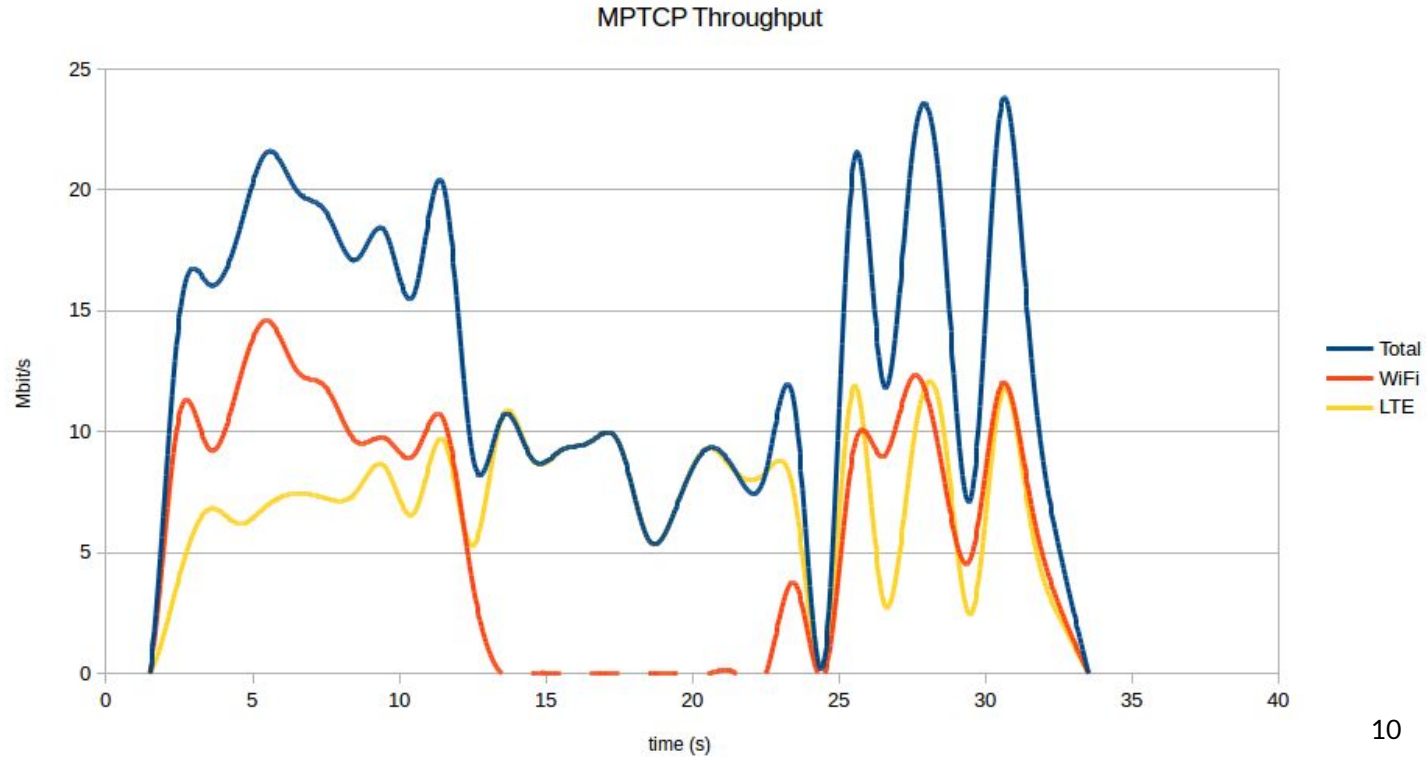
Experimental Setup

- Two different scenarios:
 - a. LTE and WiFi in parallel, WiFi is turned off after 10 sec and turned on after 10 sec.
 - b. WiFi is turned off, LTE is on. WiFi is turned on after 10 sec

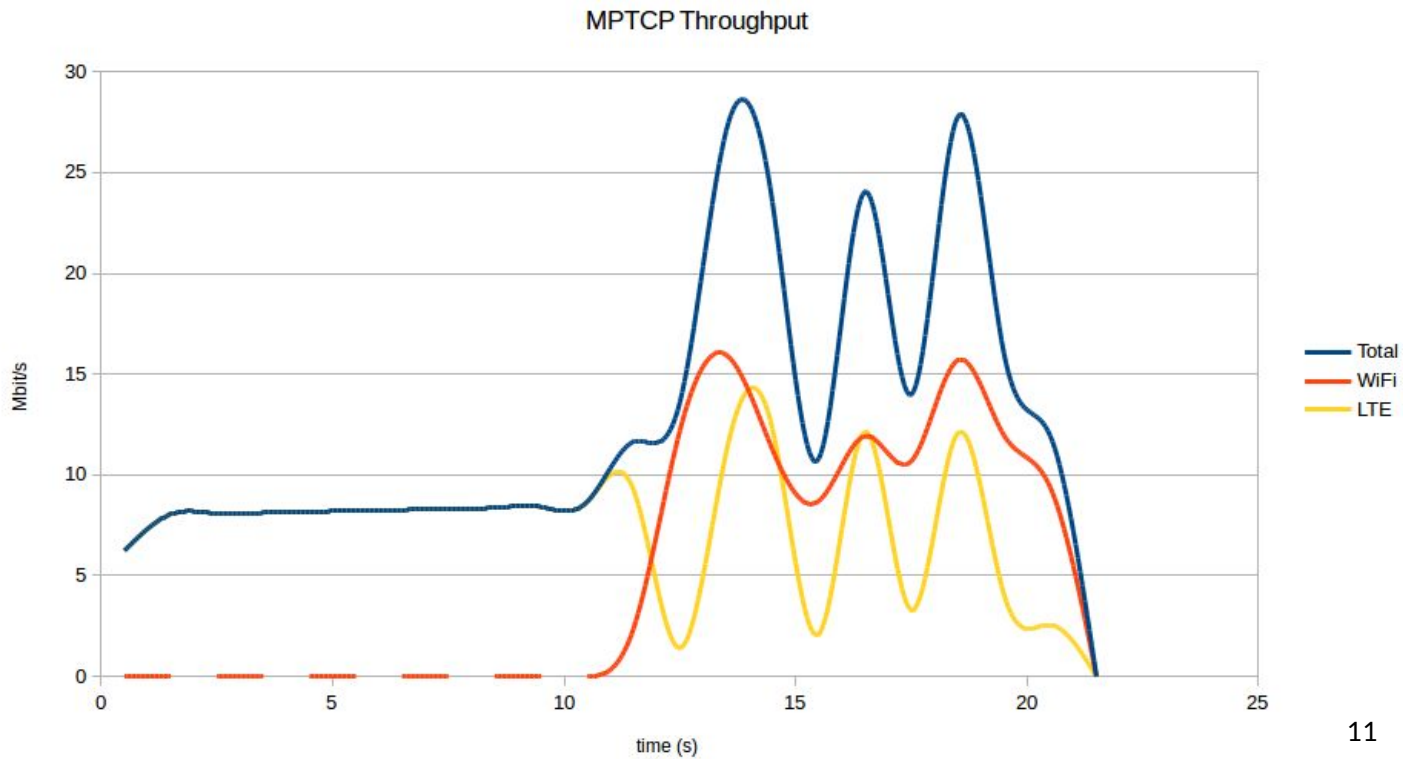
Results - Measurement 1



Results - Measurement 2



Results - Measurement 3



Next steps

- Choose/create appropriate videos for testing
- Measure performance during video streaming
- Measure video quality gain/loss
- Evaluation and analysis of measurements
- Writing a report and final presentation

**Thank you for your attention.
Questions?**