Thesis B.Sc.

Thesis M.Sc.

IDP, HiWi, Guided Research

Analysis of cellular ISP networks

Motivation

Cellular ISP networks do not simply move packets between celluar devices and the Internet. ISPs deploy middleboxes and alter their users' traffic using HTTP proxies, Network Address Translation, TCP split proxies, on-the-fly image and video recompression, some even insert overlay advertisements into Websites to "enhance their customer experience". These types of traffic modification are ususally deployed without informing the end-user or offering opt-out mechanisms.

We aim to make traffic modification by ISPs transparent using existing tools such as Netalyzr [1], measrdroid [2], tracebox [3], or TCP-HICCUPS [4] and create our own customized test traffic for detailed analysis.

[1] http://netalyzr.icsi.berkeley.edu/
[2] http://www.droid.net.in.tum.de/
[3] http://www.tracebox.org/
[4] https://www.cmand.org/hiccups/

Your Task

- Create a test setup that lets you easily send and receive test traffic via a cellular network
- Analyze one cellular network in detail
- Report your experiments, the observed network behavior and implications for the end user

Prerequisites

- Networking basics, Scripting Language (e.g. Python)
- BYOD: you will need to bring your own (Android) cellphone
- Problem-solving thinking and ability to work on your own

Contact

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