

Demo: Mobilyzer: Mobile Network Measurement Made Easy

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1. INTRODUCTION

Mobilyzer [2] is a unified platform for conducting network measurements in mobile environment. It is implemented as an open-source network measurement library for Android to provide a low barrier to adoption for large-scale deployments. It provides app developers with a flexible and easy-to-use suite of standard measurement tools, including ping, traceroute, DNS lookups, HTTP GET, TCP throughput, and UDP burst, as well as application layer and cellular-specific measurements, such as inferring RRC timers [3], measuring Video QoE, and breaking down Web Page Load Time into its constituent dominant components. To the best of our knowledge, we are the first to support crowdsourcing of video streaming QoE and page load time measurements on mobile devices. Measurements can be scheduled either directly from applications using an API provided as a library, or from a cloud-based management service called the *global manager*.

We will demonstrate how it is simple to integrate Mobilyzer into user-developed apps and also illustrate the MobiPerf app as an example of a network measurement app built using Mobilyzer. In addition, we will demonstrate the interface for the global manager, which allows users to schedule measurement tasks on selected devices satisfying specific criteria, using push and pull mechanisms. The front-end also provides users with a real-time map of performance data collected from mobile devices world-wide.

2. DEMONSTRATION

In this demo, we will show how app developers and researchers can benefit from using Mobilyzer for better understanding cellular network performance. We will demonstrate how to use the platform and interact with it through the API via an app and our Web interface for the global manager.

- **Development effort:** To demonstrate how easy it is to include library into the apps, we will show how to develop and build a simple Mobilyzer-enabled toy app, where issuing a measurement and retrieving results takes less than 10 lines of code.
- **On-demand measurement:** Audience members will be able to schedule measurements from both the app and our Web interface. We will set up audiences with their own accounts

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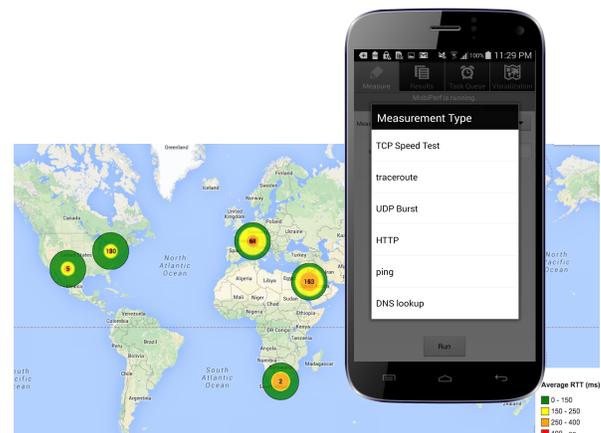


Figure 1: Screenshot of the MobiPerf application, and real-time map.

for scheduling measurements on their device using either pull-based or push based mechanisms. In the pull-based approach, devices poll the global manager periodically to report measurement results and receive a set (possibly empty) of measurement tasks. In the push-based approach, users can push measurement experiments to their device (using the Google Cloud Messaging service) and view the results in real time.

- **Real time map:** We will demonstrate how platform users can push measurements to a subset of active devices displayed on a real-time map, and observe the performance results immediately. This is a useful feature for network operators and developers to understand the current state of their network and their user-perceived network conditions.

Figure 1 shows an example screenshot from a device running MobiPerf [1], as well as our real-time map showing recent performance measurement data.

3. REFERENCES

- [1] Mobiperf. <http://www.mobiperf.com/>.
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