Installing MobileInsight

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Outline

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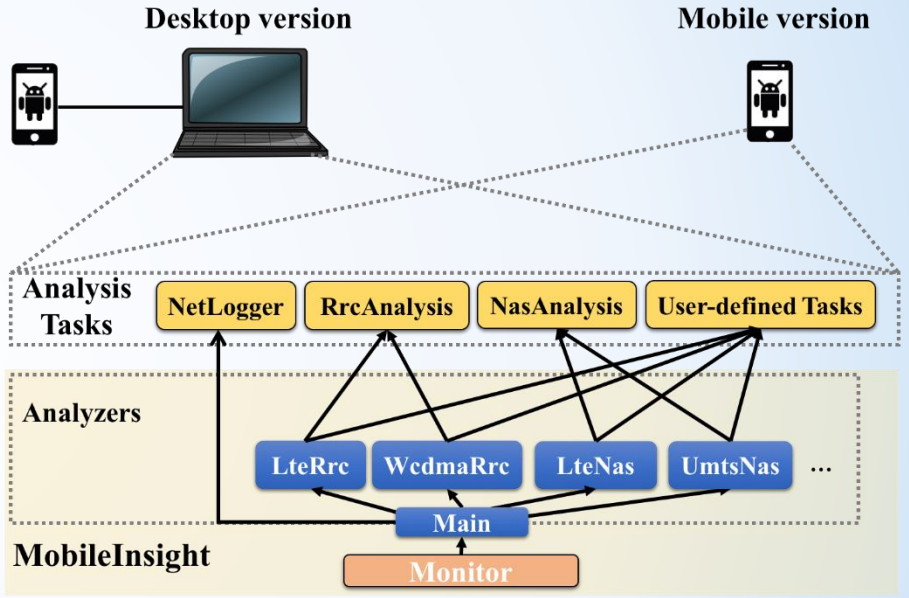
Introduction

The goal of MobileInsight is to provide an easy-to-use and extensible environment for mobile network monitoring and analysis on end devices. It should be aligned with the needs of networking research and industrial usage. It is applicable to various usage scenarios, such as real-time network status monitoring, online and offline analysis, network diagnosis.

The MobileInsight core has two types of modules:

- *Monitors*
- *Analyzers*

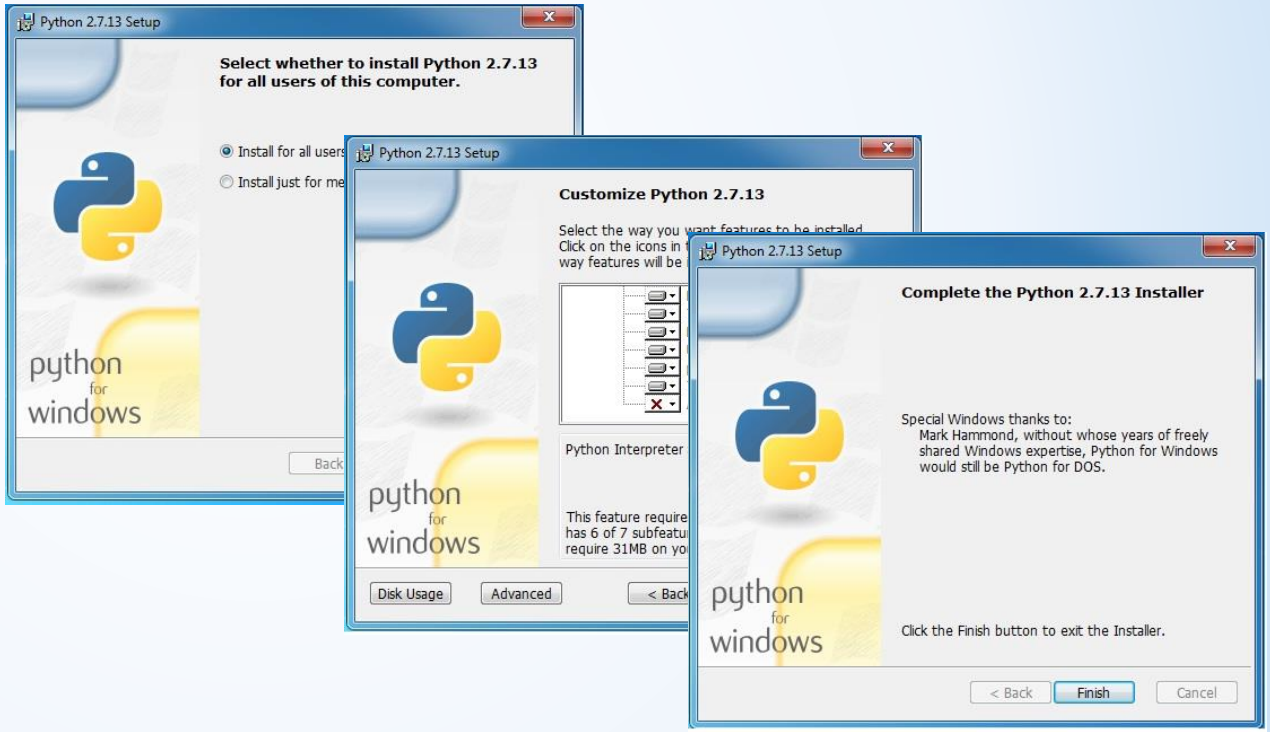


The monitor extracts low-level logs/messages from the device's network protocol stack at real-time, and can be used to drive the mobile network analysis.

The analyzers are event-driven, and can perform online/offline mobile network analysis

About Python

- Python is a powerful, flexible, open source language that is easy to learn, easy to use, and has powerful libraries for data manipulation and analysis. Its simple syntax is very accessible to programming novices, and will look familiar to anyone with experience in Matlab, C/C++, Java, or Visual Basic. Python has a unique combination of being both a capable general-purpose programming language as well as being easy to use for analytical and quantitative computing.
- Version: 2.7.13



Installing prerequisites

MobileInsight builds on top of:

- *Pyserial*
- *crcmod*
- *Xmltodict*

For installing use pip command in python:

pip install pyserial
pip install crcmod
pip install xmltodict

To run MobileInsight **GUI**, please install the following Python libraries:

pip install wxPython
pip install matplotlib

Installing MobileInsight (windows Edition)

Download the related version to your computer
Navigate to the downloaded folder:

```
C:\>cd C:\Users\Benjamin\Desktop\MobileInsight-2.2.0

C:\Users\Benjamin\Desktop\MobileInsight-2.2.0>
```

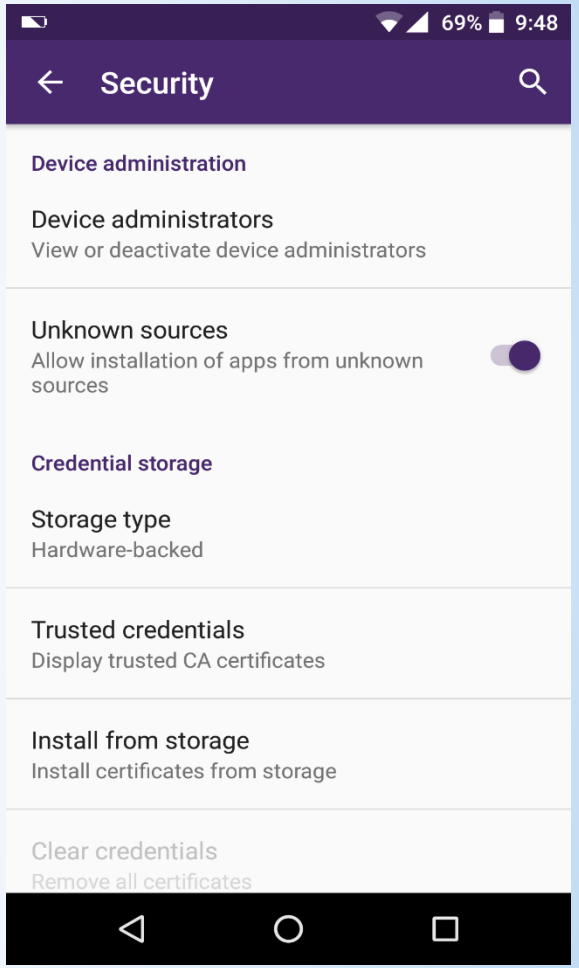
Install the Mobileinsight:

```
C:\Users\Benjamin\Desktop\MobileInsight-2.2.0>python setup.py
Downloading libraries...
usage: setup.py [global_opts] cmd1 [cmd1_opts] [cmd2 [cmd2_opts] ...]
   or: setup.py --help [cmd1 cmd2 ...]
   or: setup.py --help-commands
   or: setup.py cmd --help

error: no commands supplied

C:\Users\Benjamin\Desktop\MobileInsight-2.2.0>
```

Rooting android and preparing phone

Enabling install from unknown sources:

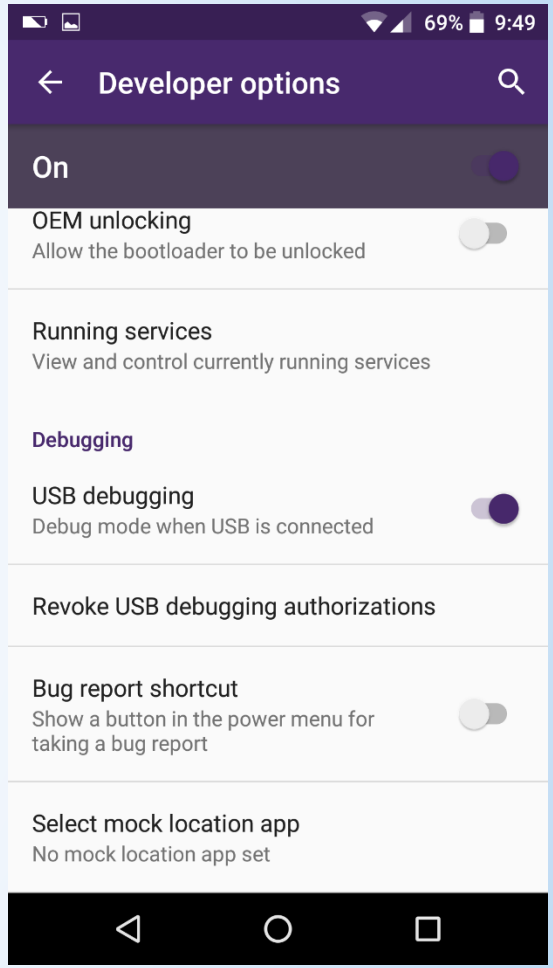
If you want to install an app not found in the Android Market.
To allow app installs from non-Market apps, tap the menu button on your home screen, then choose:
Settings >> Security>> Device administration>> Unknown sources



Rooting android and preparing phone

Enabling USB debugging

1.Enable developer settings: To turn on the developer settings, head into
Settings >> System >>About phone >> Build number
After a number of taps, you'll unlock the developer options.
2.Enablin USB debugging:
Setting>>system>>Developer options>>debugging



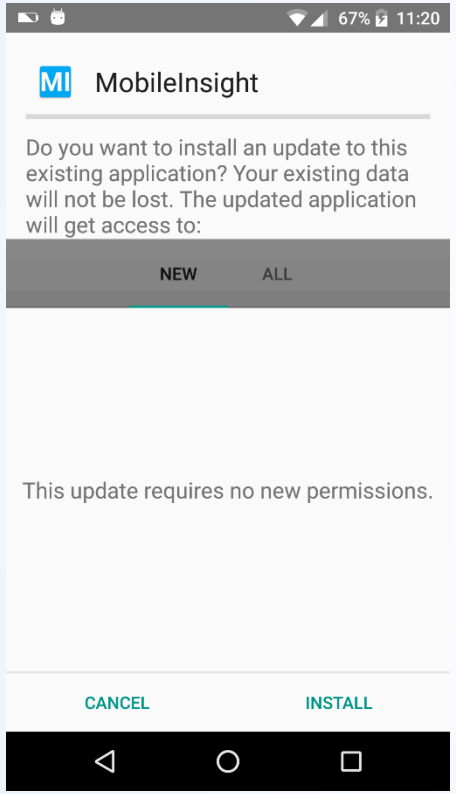
Rooting android and preparing phone

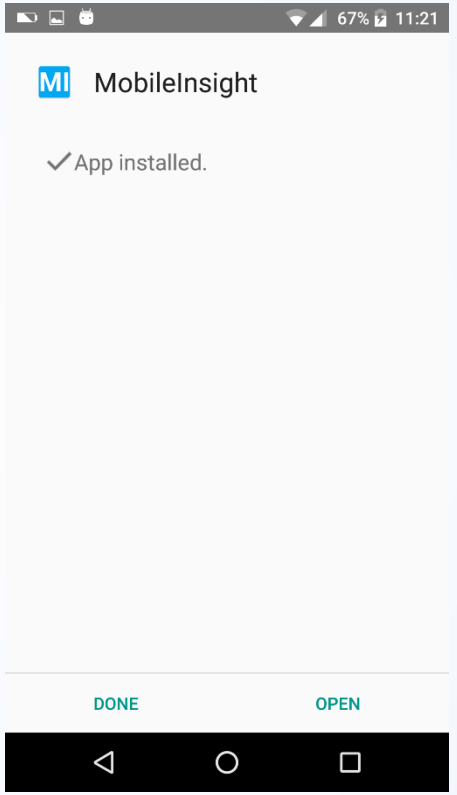
Rooting the phone with a PC:

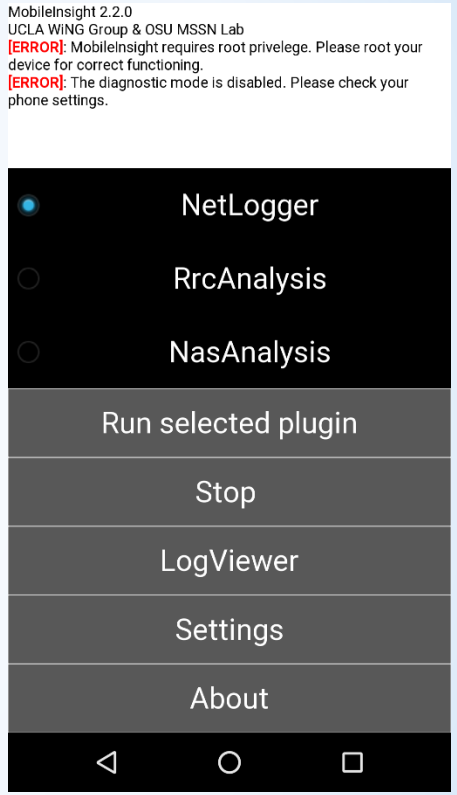
For this purposes I use the “Kingo ROOT” application
It pretty much works!

Rooting android and preparing phone

Download the application from the website and move it to internal memory of the phone and install it!







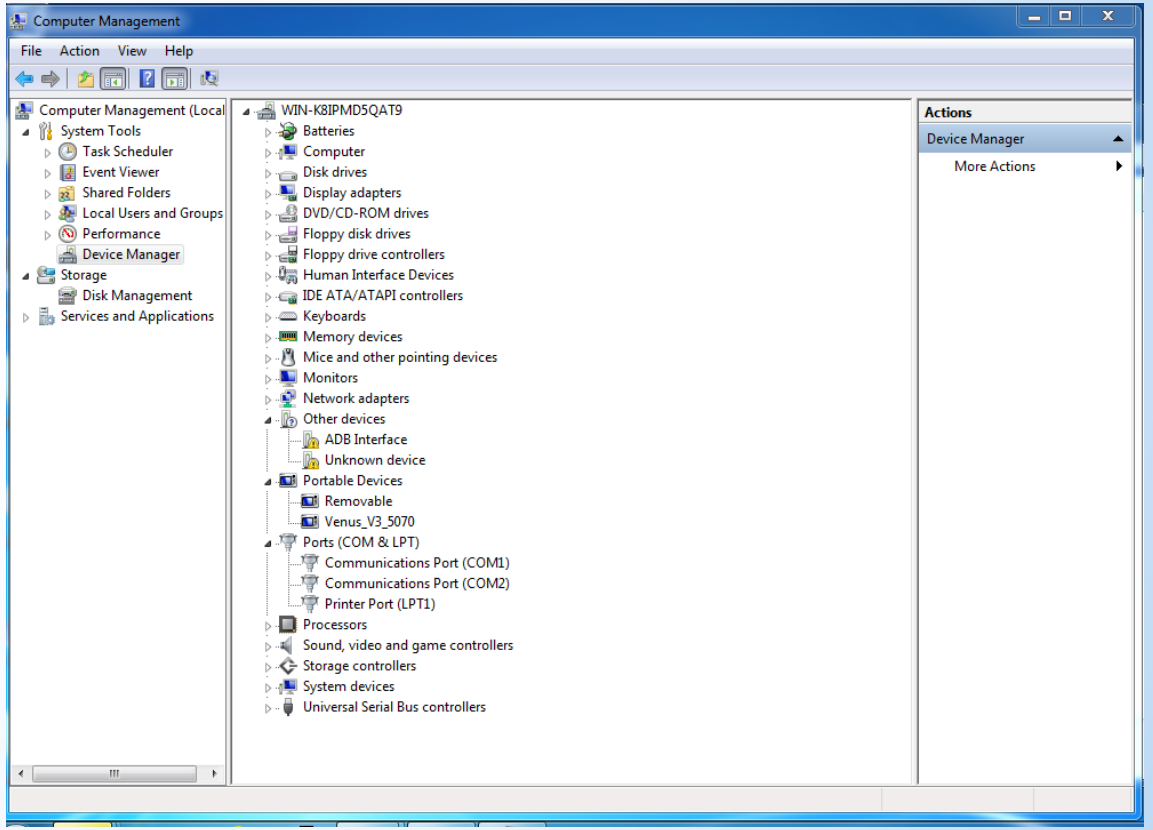
Running a Command-line MobileInsight Script

First step:

Finding the COM port:

Control Panel>>System>>Device Manager>>Ports(COM & LPT)

For example here the port number is COM2



Running a Command-line MobileInsight Script

Second Step:
Running the Command line:
In MobileInsight, running cellular network monitoring/analysis codes are written in Python. Running the code is as simple as running a Python script. Some example scripts can be found in *mobile_insight/examples*. For instance, if you want to collect runtime cellular logs, you can connect the phone to the desktop machine, and run the example code:

```
C:\Users\Benjamin\Desktop\MobileInsight-2.2.0\examples>python monitor-example.py
 COM4 9600
←[32m←[1m[INFO]←[0m←[0m←[1m [OnlineMonitor]←[0m: Enable collection: LTE_RRC_OTA_
Packet
```

If successful, it will save cellular logs to *monitor-example.mi2log* in the same directory, and dump the messages on screen in the following format.