Configuration Manual

MSc Internship
Cyber Security

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1 Overview

The proposed application is an android based NFC reading software that is used to detect malicious URL present inside a Near Field Communication(NFC) tag. This application was developed as a part of research focusing on the security aspect of the NFC communication. The research was specifically centred on ways to prevent NFC enabled smartphones from being exploited.

This is a modified version of a regular NFC reading application[1] that was taken from GitHub. This application has been modified specifically to analyse URL based record within the tag in order to identify malicious URL.

## 2 Software and Hardware Requirement

- NFC enabled Android smartphone

  <u>Minimum requirement</u>

  -OS version –> Android 4.0.3 above
  -NFC enabled
  -RAM -> 1 GB or above
  -ROM -> 8GB and above

- NFC tag – (preferred = NXP MIFARE Ultralight)
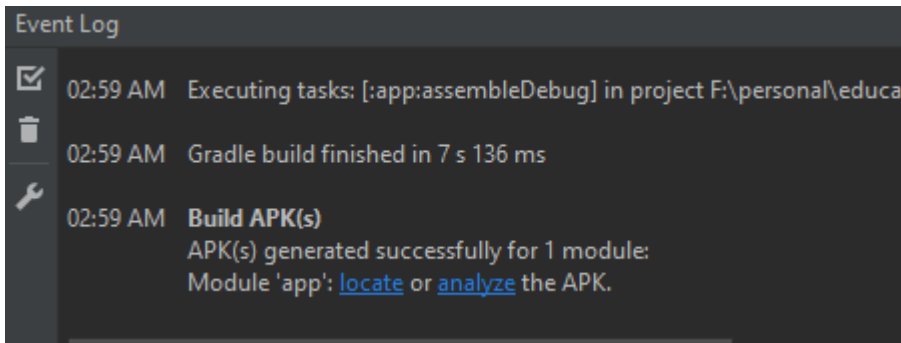 Memory – Minimum 180 bytes

- Android Studio [2]

3 Installation

3.1 Generating apk
- Download the application source code (zip file) from GitHub [3].
- Extract the zip file and open the project in android studio.
- Perform gradle build by navigating to Build > Make Project
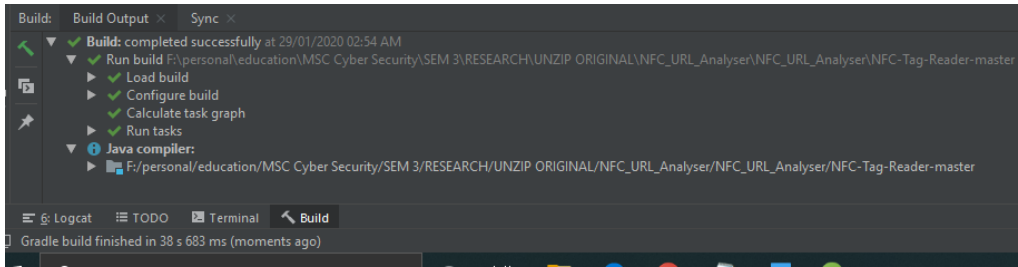
- Generate the apk by navigating to Build > Build Bundle(s)/APK(s) > Build APK(s).

- Locate the generated apk and transfer it into the reader (Android phone).

3.2 Installation of apk

- Before installing make sure to check the Unknown sources
- Settings>security> enable allow installation of app from unknown sources
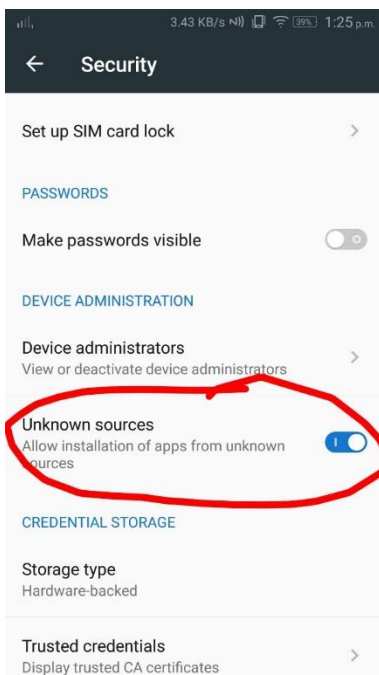

Figure 1:enabling Unknown sources
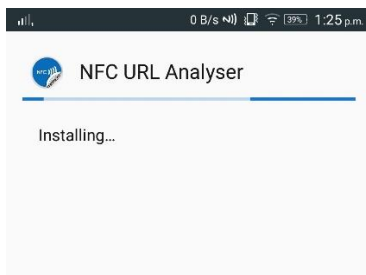
- Install the application.

Figure 2 Installing the application

- Enable the NFC in the phone
- Open the app > click allow app the permission to access the internal storage.
- Tap on the NFC tag that contain the URL
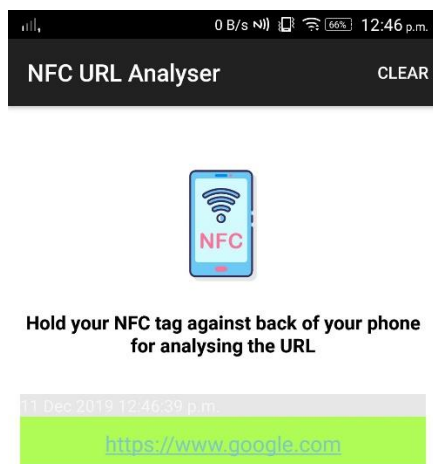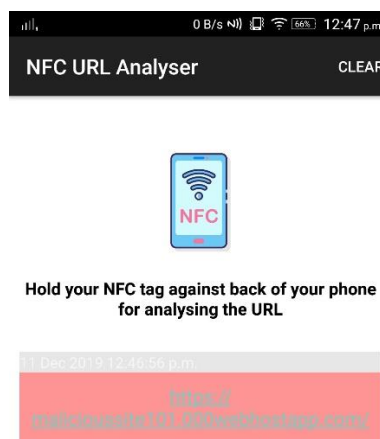- Get the result on the UI

Figure 3:Detecting good URL

Figure 4:Detecting Bad URL

References

[1]"legenddcr/MyNFCReader", *GitHub*, 2019. [Online]. Available:
https://github.com/legenddcr/MyNFCReader. [Accessed: 12- Dec- 2019].

[2] Android Developers. (2020). *Download Android Studio and SDK tools | Android Developers*.
[online] Available at: https://developer.android.com/studio [Accessed 29 Jan. 2020].

[3] GitHub. (2020). *tony09thomas/NFC_URL_Analyser*. [online] Available at:
https://github.com/tony09thomas/NFC_URL_Analyser [Accessed 29 Jan. 2020].