

Application Checker System

Anish Kale

B.E Student, K.J Somaiya Institute of Engineering & IT, Mumbai, India

Abstract: Application checker system checks the possible threats that can harm the mobile phones. In this system, user sends the application download link to the Application Checker System by using the checker tool provided to the user. The system on receiving the source link will install the application to its system and will check for the possible malicious threats that can cause damage to the user's phones. The reports will be generated and are forwarded to the user which will create awareness among the user's about the threats to the user's phone by installing the requested application by using certain download source.

Keywords: Malicious, Curate, Threats, Anomalies.

I. INTRODUCTION

Due to increasing usage of mobile devices globally, internet web threats are no longer limited to conventional Computers. Application stores now serve as the sites for several software downloads, while mobile applications serve as programs that we download in our mobile devices. It's a change in platform but with the same threat scenario. Users who download from application stores may end up downloading malicious codes instead. Because of this, mobile applications have become the new frontier for several threats.

People do not realize that there are still some security risks despite downloading applications from their official sites. Android platforms have become the target of several cyber attacks due to its application distribution model which makes it open to any developing parties. But this does not mean that other mobile operating system platform users should take security issues lightly. There are also third party sites that provide alternative

applications for users. However, downloading from these unofficial channels can be thought as risky as downloading some programs from unverified and peer to peer websites. While third party application stores are not malicious in nature, they do not have the resources to adequately curate app submissions. As a result several malicious, repackaged, and pirated applications may be found in these independent app stores. Hence, it becomes important to know the business model that these application stores use to understand the risks and threats when downloading mobile apps.

II. APP CHECKING PROCESS

1. Download and install the app checker tool.
2. Search for the app to be downloaded by checking the reviews on the app checker tool.
3. If the reviews are not available, then request the app to app checker tool by giving the URL or source through which the application should be downloaded.

4. App checker will download and install the app on its system and will check for threats.
5. Report will be generated and will be sent to the user.
6. User will be notified if the app is safe to be installed or contain some malicious code which will harm their mobile phones.
7. This process will create awareness about malicious applications among users that will damage their phones.

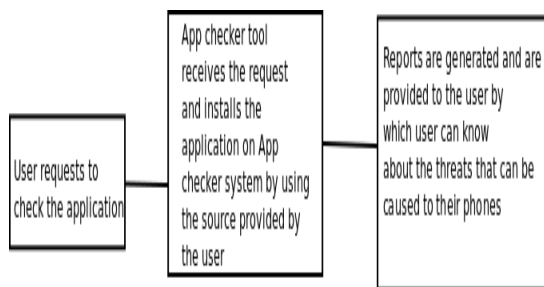


Fig 1. Lifecycle of app checker system

III. APPLICATION CHECKER TOOL

Nowadays, variety of apps are made available to the user over several sites. Only few websites or application stores can be termed as safe for application downloading and installing. Most of the time, the users are unaware about the causes or after effects of the applications they are installing. This can lead to spoofing of their mobile phones or the information stored in the phone may get transmitted to the third party unknowingly.

Application checker tool is a software which is installed on the user's mobile phone. This tool allows the user's to request the Application checker system to download and install the application by providing the download link.

Various options provided to the user are as follows:

1. Checking the reviews of the applications:

Reviews of the application sources are been published on the checker tool. When user wants to download and install application from a certain source, user are provided with the option to check the reviews of the application with the same source of download.

Serial Number	Application source	Suggestion
1	Source1	Safe
2	Source2	Application requests extra application permissions than required for its functioning
3	Source3	Contains malicious code

Table 1- Overview of reviews

2. Requesting the report:

If the reviews are not available or if the user thinks that a certain application from a certain source is safe for their phones then, users are provided with the buttons to send the download link to the system.

3. Receiving the reports:

After system perform the checks for the requested application, users are able to receive the reports which suggests about the threats of installing the application on their mobile phones.

Application name	Source link	Suggestion
Application name will be	Application source link	This application

mentioned here	provided by the user will be mentioned here	is safe to download and install.
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Table 2- Sample report received by the user

IV. APPLICATION CHECKER SYSTEM

Application checker system is a kind of server which is capable of installing and running the mobile phone applications and is located at some remote locations.

Features of application checker system is as follows:

1. Installing and running the applications:

The system is capable of installing and running the applications which are made for various versions of mobile operating systems.

2. Running the scans:

The system on installation of the application runs several scans and check for possible threats that can cause harm to the mobile phones.

3. Generating reports:

Several reports are generated after running the scans for the applications which are send to the users. The database is also maintained which consist of the scans performed for the applications. When a user requests the same application to be scanned which is having the same URL links, the system sends a report to the users by making use of database rather than rescanning the applications unless there are any application rebuilds.

V. SCANNING THE APPLICATIONS:

Several checks are performed to check the threats caused by the applications:

1. Checking of permissions:

Whenever an application is been installed in the mobile phones, It asks for permissions from the user

Some of the permissions required while installation are as follows:

- **Storage: modify/delete USB storage contents-** applications that store anything like videos and pictures will require this.
- **Device calls: read device state/identity-** some applications require this permission to do something like "pause" when we get a phone call.

Network communication: full Internet access:-

- applications needs this permission to access the Internet to download the ads.
- **Your location: coarse (network-based) location-** Many games with ads require this permission so that it can deliver targeted ads.
- **System tools: prevent device from sleeping-** usually means that when you're using the app, it will keep your phone from going to sleep or in a power save mode.
- **Your personal information: read contact data-** any social media or messaging app requires access to contact information so that we can use share with our friends.

An app which keeps grocery list, should not ask for permissions to send and receive SMS text messages, access contacts, etc. If the app is asking for such permissions then probably the app will cause some threats to

mobile by sending the data to the third party.

2. Checking for malicious activities:

The App checker system will check for any malicious codes that are been installed from the internet while the application is running. It will make the use of digital signatures to identify the malicious codes.

The App checker system will monitor the data transmissions while the application is running in the background. It will identify about anomalies in data transmissions and will add it to the reports.

VI. CONCLUSION

In this paper, we have presented the idea of application checker system which checks about the possible threats that can cause harm to the mobile phones.

Application checker system will lead to spread awareness among the people about several threats to the mobile devices and will prevent the users to install applications containing malicious codes.

VII. REFERENCES

- [1]https://www.webroot.com/shared/pdf/WR_MobileThreatReport_v4_20140218101834_565288.pdf
- [2]Technical paper on Mobile Application security by Matthew Wright
- [3]https://www.fsecure.com/en/web/labs_global/whitepapers
- [4]<http://ieeexplore.ieee.org/Xplore/home.jsp>
- [5] The IEEE website [Online]. Available-
<http://www.ieee.org/>