

Android System Authentication Types

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Abstract: The Development and Awareness of technology have to lead rapid increase in a number of Smartphone user around the world. There is an advance technology which even updates time to time. these technology work even on the slow network, there is online games, online phone call, and even online video call. As new technology developed there is also a Risk involvement in these technology and we resolve these Risk by introducing anti-virus or with the help of update we resolve these problem. There is primary requirement to the prevention of smartphone from an unauthorized user. A large number of companies are a focus on security towards hacking, unauthorized user, virus etc. and they also aware of all these problems. It seems in the coming year the growth towards the security from the unauthorized user must be increase at multiple levels.

I. INTRODUCTION

As new technology developed we also knew about risk involvement in this technology. There may be Screen lock of a different kind or a different set of the method. Even there is also a pin pattern which prevents our smartphone from an unauthorized user. And more important technology which is used to unlock our smartphone is a fingerprint. In these, we touch our finger to unlock our phone. And another most important technology is voice detector. Voice detector is new technology which is used to unlock our smartphone through voice. unauthorized user can't match this voice or finger pattern. Screen lock is of a different kind like screen pattern every person have their own pattern if the unauthorized user guesses these pattern then the phone can lock for some time so these can prevent from an unauthorized user. Now password and security in smartphone also have Two-Factor Authentication. Two-Factor Authentication save your smartphone from a hacker.

II. BACKGROUND

Android operating system is a stack of a software component which is basically divided into five section. These are Hardware, Kernel, Libraries, Shell, Application which is used to built an operating system. Components are divided into layers which are grouping into similar components. Every layer interacts with the bottom layer and to the top layer. The bottom layer work as requesting services and top later working as answering requests. The Higher level layer is known as Applications layer and the Lower level layer is known as hardware layer because physical work is done in this layer. User mode and Kernel mode are work as combined layer. In user mode, the user program is developed, after user program is developed, service procedures and utilities are work in kernel mode.

2.1 Linux kernel

The first section is the Linux kernel. The function like Process management, memory management, device management is done in Linux kernel. Kernel handle all things that are doing in Linux such as networking and vast device driver. Camera, keypad, display, script functions are done in Linux kernel.

2.2 Hardware

The second section is Hardware. In hardware section, Physical work is done in the hardware section. Physically mean connection related, It means this section is connection oriented.

2.3 Libraries

The third layer is in the android operating system is Libraries. These provide a database which has a different key like SQL, WebKit. It provides repository and sharing of application data, record audio and video and SSL libraries.

2.4 Shell

The another layer is Shell. Shell works as a kernel but not a part of the kernel. It is a command language interpreter used to execute the command, read command from the standard input device. It is user program which provides an environment for user interaction.

2.4 Application

The top most layer is Application. In this layer, Application is installed in this layer only. an example of such application is contacted book, game etc.

III. Related Work

There is different screen lock which is helpful to secure your smartphone. First, we access the screen lock and open the lock setting and then turn on the screen lock. There are different lock which is a

helpful and secure smartphone from an unauthorized user.

3.1 Slide lock

The slide lock is the lock which is simple and clean locker facility with strong notification feature. we open smartphone by sliding a screen.

3.2 Knock Code

Knock code is a type of lock which is use to secure smartphone. When we apply knock code, It asks for PIN or password. The password may be a combination of number, character, symbol and a special character. so it is difficult to predict password for the unauthorized user.

3.3 Fingerprints lock

Fingerprints lock is a type of lock. you can lock your phone with the help of your thumbs or your finger. you open your smartphone by using your finger, no other person can open your phone because there are different finger pattern of each person.

3.4 Pattern lock

To unlock smartphone a pattern is applied in pattern lock, Pattern can be of your preference.

3.5 Pin or Password

Pin are basically personal identification number is a numeric value. It is similar to ATM pin, as there is four number atm pin, similar we can apply these to your smartphone to unlock our smartphone.

IV. OS Improvements

In spite of OS security issues, there has been a gradual improvement in the later versions of Android (3.0 Honeycomb and 4.0 Ice Cream Sandwich), that have made attempts to resolve the associated enterprise risks.

- Honeycomb was designed with Security improvements, such as support for passwords with complex characters as well as encrypted storage
- Ice Cream Sandwich was designed to address the problem of Android fragmentation

2. Android Mobile device functionality Improvements

With the rise of security issues in the operating systems, the device is now trying to make sure that security is handled at the device levels too. So that users become aware of the potential security issues in Android OS and the mobile apps, the devices have an inbuilt functionality to explain its users about the data and features that the app would want to access. The mobile device has a mechanism to ask the user's permission before installing the app. For e.g., access to contact list of the user, camera, location, etc. But, if the user proceeds for installation without paying much attention to such warning messages then user's data may be at risk. But in many cases, anti-malware can offer some protection against Android mobile app security risks.

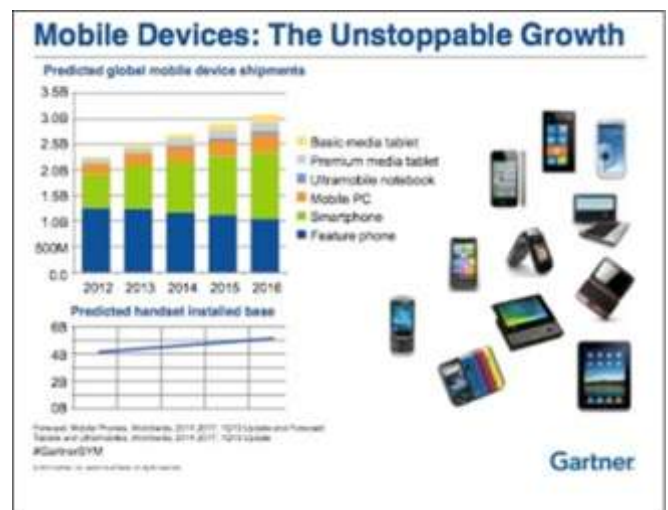
3. Anti-Malware Software

Anti-Malware Mobile safeguards the identity, as well as personal data on the, fly protecting users and their Android smartphone/tablet from harmful malware, unauthorized surveillance and infected applications.

To take care of other security issues such as lack of centralized management utilities, it would be ideal if corporate IT administrators could manage Android devices by applying strict security policies so that users are only able to install trusted mobile apps. Today, there are no such centralized management tools to take care of the app security issue. But many vendors are in the process of developing such products.

4. Why should IT care about Android issues?

Gartner's opinion on mobile applications is that business units comprising a company are driving mobile decisions and projects in the forward direction. According to a Gartner report, by the year 2016, the mobile device ecosystem will grow to more than 3 billion devices. With the increase in the number of smartphones/tablets being used in the IT, these devices are replacing older communications technologies and techniques. In the near future employees will not only use smartphones and mobile devices for personal use but they will prefer to carry it to their workplaces as well, requiring IT management too soon implement BYOD (Bring Your Own Device) tools to make sure of security and management of enterprise as well as user data.



5.Memory management

Since Android devices are usually battery-powered, Android is designed to manage processes to keep power consumption at a minimum. When an application is not in use the system suspends its operation so that, while available for immediate use rather than closed, it does not use battery power or CPU resources.^{[89][90]} Android manages the applications stored in memory automatically: when memory is low, the system will begin invisibly and automatically

closing inactive processes, starting with those that have been inactive for longest

6. Platform usage

Nougat (7.1%)
Jelly Bean (9.1%)
Marshmallow (31.2%)
Ice Cream Sandwich (0.8%)
Lollipop (32.0%)
Gingerbread (1.0%)
KitKat (18.8%)
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In this section provide breakdowns of Android versions, based on devices accessing the Google Play Store in a seven-day period ending on May 2, 2017. Therefore, these statistics exclude devices running various Android forks that do not access the Google Play Store, such as Amazon's Fire tablets.

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V. FUTURE SCOPE

The requirement of android increase day by day so demand different OS for an increase. For android technology, there is a lot of opportunities. There are a large number of jobs in the field of the android world. And these growing year by year. so there is a lot of jobs opportunities in that field. According to data available, the android phone is everywhere and it important for every cellular organization. A lot of people seek to make a career in the field of ANDROID DEVELOPMENT.

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