# Remote Desktop Monitoring Using Android

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***Abstract***— In Today's techno savvy world the android operating system based smartphone plays a huge role in the technical field, and also provides various useful applications which can be used in day to day lives. This paper discusses about another such application which can access the computer connected to it. The key objective of the application is to remotely access and monitor different tasks running on the PC by connecting it to an Android operating system based mobile phone through a network (internet). This application turns your mobile phone into a controller and viewer that can monitor the tasks running on PC and also view its desktop. Both the PC and mobile phone need to be connected to internet. In this paper we will discuss the process of accessing and monitoring the computers with the help of android cell-phones. This process is based on VNC (virtual network computing) architecture. We must install a server on target computer connected to internet and client on the android mobile phone (user). The user can perform operations using this application through the internet on computers with various platforms like Linux, Mac and Windows etc. There are several functions provided to ease the viewing of desktop on android cell-phones. Shortcut functions are provided that can be used to quickly access the frequently used area. Screenshots of the target PC will be sent on the users' cell-phone after defined time intervals. The user needs to install a server Application on the target PC and a client application on the android mobile phone. Both applications are going to be developed in Java Using Eclipse or JDK. To reduce effort of user and solve problems due to the mobile phone's small screen, several functions are provided on the mobile viewer. Remote Frame Buffer or RFB Protocol is used to access Graphical User Interface of remote computer. The system will use Remote method invocation (RMI) and screen image capturing technique to implement VNC. The viewing of tasks running on target machine Json parsing is used in the proposed system. The application will be executed on android stack as well as mobile phone. The functions such as mouse clicking or keyboard operating, closing tasks, playing media can be perform on server computer.

***Keywords****: Android, VNC Server, VNC Client, Internet etc.*

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## I. INTRODUCTION

The advancement in android operating system has brought a drastic change in the technological and cyberspace field related to mobile phones. Now a day, smart phones are used globally and provide tremendous facilities than the ones provided by previously available mobile phones. The features which were previously provided by computer system architecture are now provided by these phones. In this paper, we describe the system which can provide monitoring of remote computer system within the Wi-Fi network or any internet network and provide features like desktop monitoring, task managing, viewing screenshots of desktop, mouse and keyboard controlling, shortcuts for PowerPoint presentation and media player and message sending facility from the mobile phone to the target PC. This system will be executed on android based mobile phones and also on Android software stack. Android software stack is used on a large scale for networking packages, executing android applications before executing it on mobile phones. By taking into consideration the most important issue of security, authentication is provided at client side. RFB protocols are used for exchange of information amongst client and server. There are several systems and applications already designed to permit remote monitoring between devices. There are many architectures available to control the PC through mobile devices but it is necessary for both the devices to be in same network or Wi-Fi zone. The Remote control architectures provided by manufacturers are usually designed as internal solutions and they partially cover the features required for the efficient use of it. Remote envisioning mechanism is the another aspect that is useful to achieve remote display on other devices. Many systems are designed to perform remote control of devices, the most popular is Virtual Networking Computing. There are number of implementations of this system which can be applied on Android software stack. The whole system was designed to overcome the limitations of mobile devices and create more affordable environment. The solution suggested could be used to perform configuration remotely. The Android platform provides debug functionality on devices. This uses a protocol to offer a service of server when client is configured on the device and is integrated on the platform. The improvement in android platform is emerging continuously and it is expanding on large scale. The heart of the paper is to make use of Android platforms for remotely controlling and accessing other devices such as computers. [1][3].

## II. LITERATURE SURVEY

Maintaining work or educational ethics is always important. During work hours or practical hours it is necessary that

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employees and students perform the tasks that are given to them. But any times it is observer that time is wasted by doing other things on PC instead of work. This results in deteriorated work product. This need of knowing what tasks are being performed on a certain PC is the main reason of development of this project as it allows the user to monitor a PC and close all unwanted applications. In 2005, similar software named Team viewer GmbH was founded in Uhingen, Germany. Teamviewer requires authentication details of the target PC to monitor it. If password falls into hands of unethical user then changes in the target PC will be possible and can cause loss of data. One more system was developed in 2012 which provided live monitoring facility but the drawback of the project was, both the devices are required to be in the same Wi-Fi zone. This limits the user access area. In our proposed system the devices need not be in the same Wi-Fi zone but internet connection of any type is must. The screenshots of the desktop of target PC will be sent to the user's mobile phone at regular intervals of time that will help the user to know what is going on the PC. For the proposed system remote frame buffer protocol is being used for client server connection. In this protocol 3 phases of working exists. Handshaking phase, initialization has and normal protocol interaction phase. To use this application it is necessary to install this application on user's android mobile phone and on administrators PC. It is not required to install this application on clients PC. User logins in the application sends a request for connection to the server. If it allows the user to go further, then the user chooses the PC he wants to access. And thus the result of the application i.e. the user can monitor and access the target PC. User must logout after completing session else any unauthorized user may access the PC through user's mobile phone under certain circumstances. So, the aim of monitoring the PC remotely is achieved in the proposed system.

## III. PROPOSED SYSTEM

Mobile phones have shown a tremendous improvement in their functioning to a great extent that java programs are executable on them. As a result, mobile phone users throughout world can send and receive e-mails, browse Web pages, and play Java games efficiently on their cellphones. This progressing trend has inspired us to use the mobile phone as a device for remotely monitoring computers. Virtual Network Computing is a schema for graphical desktop sharing which provides remote monitoring and collaboration via network. It transmits the keyboard and mouse events from target computer to the device monitoring it. VNC system uses the RFB (Remote Frame Buffer) protocol for information exchange to and fro between connected devices. Transmission occurs at a port which ranges from 5900-5906 using TCP/IP protocol. VNC architecture system requires two types of applications at both the ends for proper functioning - server application for the system under control (target PC) and client application - for the supervisor (android mobile phone) device. Client side is called controller because of its function of monitoring the target PC. The Controlling device is responsible for viewing the desktop (or screen) connected to it and capturing all the activities taking place on it and converting them into the RFB protocol messages. On the other side, server must interpret all messages and activities received from client side and infuse them into self-system i.e. the server (target PC). The Server i.e. target PC should also respond to the request sent by the client (controlling device) by sending back a screenshot of desktop to connected client after defined interval of time, show all the tasks running on the target PC. The mobile user can see the desktop and manipulate its keyboard/mouse for changing slides or closing tasks through the mobile phone. The same mobile phone can be used for its general purpose of communication along with remote desktop monitoring. [5][6]

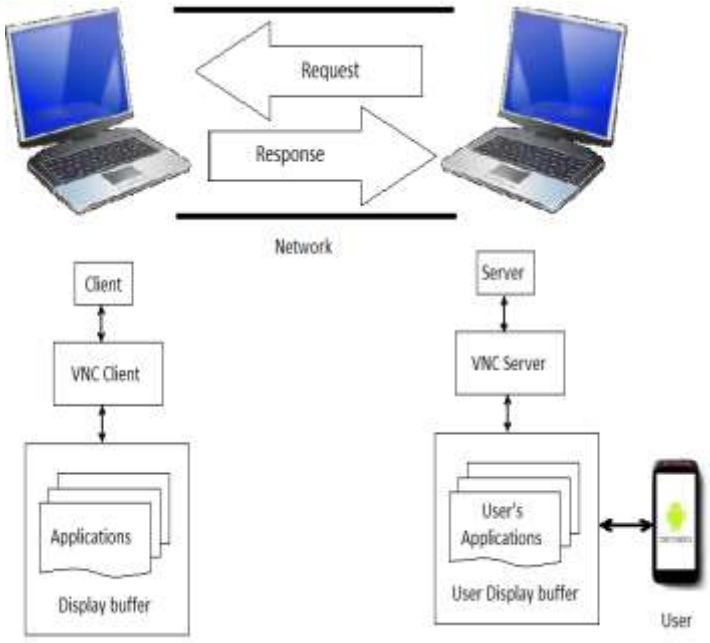


Fig 1: Block Diagram of Proposed System

ALGORITHM:

1. User logins into the application through android mobile phone.
2. If username and password is verified then it sends the request to administrator which works as a server, for the connection.
3. If username and password is incorrect then go to step 1.
4. If administrator gives permission, the user can choose the PC.
5. If the request is rejected by the administrator, the user gets logged out.
6. User chooses the PC to be monitored.

7. It monitors the PC by visualizing the screenshots sent by it on user's cell phone.
8. User closes the unwanted applications shown in the task manager.
9. It can access media player and PowerPoint presentation using shortcuts or icons provided on the interface.
10. User can choose another PC in the network if needed.
11. Constant notification about the tasks carried on the target PC is sent on the users' phone.
12. User then logs out of the system after monitoring and accessing it.
13. To start a new session the user needs to start new session.
14. Close the application.

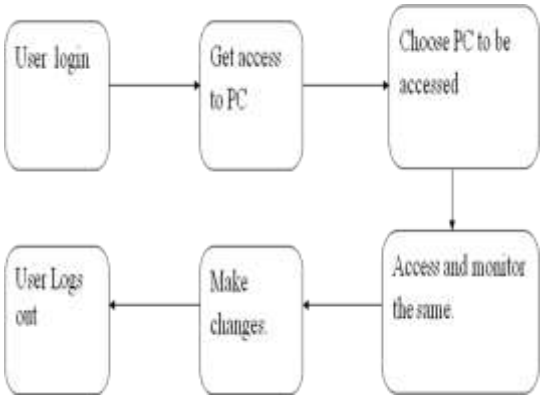


Fig. 2: Flow Diagram

## IV. PURPOSE

The main purpose of the application is to access and control different tasks on a PC by connecting it to an Android based mobile phone. It helps the user to monitor the tasks of the PC without being physically present there. To accomplish this purpose the application will have separate icons. The user will be constantly notified on his cellphone about the actions or tasks being performed by the target PC. This will help the user to get the overall information on a mobile phone.

## V. FUTURE SCOPE

This project is beneficial for long term as it can widely be used in colleges and companies to guiding the work of students or employees. Its beneficial as it is very time preserving. The main goal is to find the easy way to access and ability to solve the problem of a PC, using a simple android mobile phone without being physically present at that place.

This system can be used for accessing the system remotely with proper security measurements.

## II. ADVANTAGES AND LIMITATIONS

Advantages:

1. User will come to know about the operations going on that computer from even a distance away.
2. This can be used in a College at a high level while the practical sessions.
3. Time for accessing a PowerPoint presentation or media player will be reduced as icons will be provided on the users interface.

Limitations:

1. Used only for android phones.
2. The internet connection is must for the user and PC to monitor the desktop.

## VI. APPLICATIONS

1. In colleges for sharing the remote desktop by student during practicals.
2. Can be used in Offices.
3. In future, home appliances can be controlled using this application.

## VI. CONCLUSION

Remote Desktop Monitoring Application will provide facilitation to the system administrator in supervising the tasks of the target PC. The RFB protocol plays vital role in transmission of information between client and server. This application ensures flexibility to users for controlling and monitoring their computer from distance, over Internet. Many facilities and features are provided in this system for accessing tasks running on the remote desktop, shortcuts for few applications such as PowerPoint and media player is provided, and screenshots of the desktop are sent on the android based mobile phones. Thus the scope of this system will help us to provide easy access to the computer connected to it over the Internet.

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