Remote Desktop Access Through Android

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Abstract Nowadays people are using smartphones widely so we will introduce the process to access the Remote Desktop computer (server) using android mobiles (client), this can be done with the help of Client-Server Architecture. Desktop Client must be installed on Remote desktop and Mobile Client will be provided on android mobiles. But, the IP address of the remote desktop must be known. As we know that Java and Android both are open sources hence server application is implemented in Java and client in android. In this project we can access Remote desktop using android mobile phones with the help of Internet or Intranet .there are several functions are provided on android phones just like keyboard shortcuts, type on the fly, open application, FTP (file transfer protocol), PC to mobile transfer, E-mail and Mouse. The objective of this project is to control the PC file system remotely

Key Words: Mobile Client, Remote Desktop Control, CPU, RFB, Wireless LAN

1. INTRODUCTION

The project idea includes presenting android based remote control of mobile devices through VNC. This project proposes and analyzes different architectural approaches for the implementation of remote control systems of mobile devices using the Android software stack. In this work, we propose a fast screen sharing method to improve the screen update rate in mobile VNC systems. In the case of mobile devices, high complexity video compression techniques cannot be employed due to their strict computation limit.

However, the bandwidth limitation requires a certain level of compression ratio. Thus, there exists a trade-off between encoder complexity and compression ratio for fast mobile VNC systems. We first integrate various video encoders into our prototype system, and explore their suitability for mobile VNC. Also, the existing RFB protocol for VNC is extended to easily integrate video encoders in a backward-compatible way.

We additionally propose a new modified region coding method which transmits only modified regions between current and previous screen images. It can further reduce encoder computation and resultantly increase the screen update rate. We implemented a prototype mobile VNC system actually, and its practical performance is widely evaluated.

In recent years, there have been popularly released a variety of multimedia mobile devices such as smartphones and tablet PC. The service that today's mobile devices provide to users is almost comparable to desktops or similar devices. This trend requires the necessity of collaboration

among these systems such as sharing multimedia contents and applications. VNC has been used as a tool for a multiplatform application suite allowing users to access graphic displays remotely. It is based on the thin-client architecture and uses the RFB (remote frame buffer) protocol for sharing a screen between distinct devices. The client software runs on the local user's machine while the server part operates at the target host. In this way, VNC brings remote display to the local user's machine. Successful application of VNC to mobile devices should guarantee rapid screen image transfer from server to client.

2. Literature Survey

Santosh Dahifale(2014) gives an analysis of the Remote desktop controller. It can be done with the help of Client-Server Architecture. But the IP address of remote desktop must be known. In this project divided into three layers 1.Socket server 2.Desktop Client 3.Mobile client. So this paper says that RDM is an application which allows us to view a computing desktop environment not only on the machine where it is running, but from anywhere on the internet[2].

Angel Gonzalez Villan(2018) explains about Remote Desktop Monitoring and Controlling. It can be done with the help of Socket Programming. System runs on a Java RMI mechanism In this project LAN or WAN will behave as a server. Process in this project is log in to the system, connect to a server, a desktop will be displayed to a server machine, Server can communicate and control with the client. This module also provides the server's IP and Port Number over which application is running[1].

Tristan Richardson(2013) gives information about Android Based Remote Control of Mobile Devices Using VNC System. VNC has been used as a tool for a multiplatform application suite allowing users to access graphic displays remotely. These servers can be controlled through a small client written in Java and runnable both on desktop and web systems. The service that today's mobile devices provide to users is almost comparable to desktops or similar devices[4].

Gonzalez Villan (2015) project is all about PC Applications on Android Mobile for Remote Desktop Control. ADB(Android Debug Bridge)is configured on the device then it provides service of server for communication with this protocol. Android Debug Bridge or java socket is used mostly for communication between targeted PC and Android mobile. It is based OTP login system. The communication between client and server using the RFB protocol consists of Handshake , initialization, and Normal interaction[3].

H.Kawashima(2012) In this paper aim at the adoption of desktop virtualization and developed a web-based interface following the cloud computing concept. In this they implemented a sketch of clientless remote desktop based on Google Web Toolkit framework. The remote desktop can be accessed from any OS platform through any HTML5 compliant browser. They plan to reduce the communication overhead in the cloud[5].

3. Proposed System

The overall system is divided into Three Sections.

1. Desktop connection

In Desktop connection the desktop first sends an unique id to the server. Along with the unique id

the desktop address is also recorded.Whole data processing and computing is done by th desktop.

2. Server Connection

In server connection the unique id of desktop along with its address is stored .This unique id is then checked with the incoming unique id from the android, if the unique id is matched then the connection is formed.Server act as the intermediary between Desktop and Android .

All the processes are carried through the server.

3. Android Connection

In android connection the connection is formed to the desktop through the server with the help of unique id.Unique id is the id that is necessary for the user to form connection to the desktop.

After the connection is formed user can operate desktop through Android.

4. Methodology

Steps Involve in establishment of Remote Management:

i) Establish Network

Here desktop is connected with the server

Ii0 Establish Remote Connection

Here the android is connected to the server completing a full cycle connection.

iii) Screen casting

After the connection is successful the desktop sends image size and other data size in the format of bytes to the server.Along with the size desktop also resizes the screen shots and transfer the image to the server.Then the server transfers this data to the android.If the size and image size match the android device sends authentication to the server which is then send to desktop and the process is carried on.

iv) Data Manipulation

The android device has different types of methods to control the desktop system.E.g: keyboard system,

Touchpad co-ordinate system, etc.This requires large scale manipulation of data .Only the desktop computes this data and the android device only transfer the instructions and data .
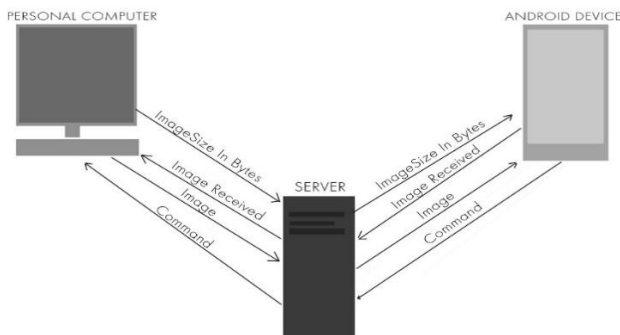
5. CONCLUSION

5.1 Advantages of System

Smartphones are part of almost everything we do – business, entertainment, knowledge, social networking, etc. In most cases, they must have access to the Internet and our data. But lately, the Smartphone's are being connected even to a computer. We cannot store all our data on our smartphones. Sometimes we need to access the information like important data (word file, image, and video) that we need an urgent basis. Where we sometimes out of the station and in that case by using this software we can take that data by simply login to an android client where the list of machines will be displayed and we can take important data from those machines and copy-paste in our android phone. We can do many things like rename, delete, rename desktop file or folder and even we can change the desktop file data.

5.2 Conclusion

RDM is an application which allows us to view a computing desktop environment not only on the machine where it is running, but from anywhere on the internet. It allows us to control the peripheral devices of a remote PC. It allows interacting and viewing with remote PC. There is no need of carrying hardware each time for accessing our home or friends PC. It allows us to be connected in the network which will provide secure, easy access to the information within the network.

5.3 Future scope

A] TV can be controlled by mobile. In future TV can be controlled by a computer (already started in some areas).

B] The whole desktop will be controlled by an android phone where we can use internet explorer, windows media player, word operation, and games of desktop clients through an android phone.

C] As a continuation of work in this application, we would include the encryption algorithm to prevent data leakage. We will also put efforts for displaying the screen of the target PC on the android phone itself for better visualization.

6. REFERENCES

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