Android Server For Wlan Control And Management

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Abstract— **LAN monitoring and controlling system is a computer system which would enable the lab administrator to interact with other user computers and the users as well. It enables the administrator to remotely control the all client system from our android mobile. Using this system administrator doesn't need to be physically present at the user computer to monitor them or to solve their problems. Administrator would be remotely monitoring all the user computers in the laboratory sitting at his desk, which would greatly increase the efficiency of the work being performed and would include remote technical support. Lab Monitoring and controlling System is platform independent resulting in monitoring and interaction of all the systems in the laboratory where it is installed, independent of type of Operating System installed on it. The primary function of a LAN monitoring and controlling system is the ability to remotely operate one computer from another computer over a network.**

Introduction

Our society is more and more pervaded by computer controlled device. Today the usage of mobile phone is rapidly increased. We can control any activity through the mobile phone. The aim of our project is to control and monitor the network from our wireless handheld device i.e.cell phone from anywhere within the Wi-Fi area. Suppose you have a LAN setup in your collage lab. Sitting within the Wi-Fi area you want to learn the LAN status. You can do so by storing this project in your cell phone and executing the same. In every part of our life wireless devices are widely used.

Many a times we need to lock the Resources such as Drives, Folders or Files on these computers to restrict the User of making use of them. Sometimes we need to stop the users from using the internet or from changing the setting or accessing the registry editor so as to secure the system from any crash due to misuse of it. These are common task that we do in our day to day life but for these we don't have any Utility software. With these project idea we have build a software system that can serve us to achieve all these needs.

I. PREVIOUS SYSTEMS IN USE

There has been a lot of technical research in monitoring of wireless networks. The changes in the market of information technology with the gradual enlargement of IT firms have made it even more competitive to develop solid user friendly software for network monitoring.

1. Network monitoring in schools/colleges:

In the college and school laboratories the monitoring is done through a central server. The machines are connected either wireless or wired way with the server. The administrator sits at the server and controls the activities. The basic information about the machines in the network like the machine names is displayed. We have normally observed that the administrators in colleges disable the USB ports on all machines. Whenever there is a new machine in the network the server gets informed and similarly when there is a USB device being connected. It does not notify when a new machine is entered or the personal gazettes like smart phones and laptops. A continuous monitoring has to be carried out making this a loophole from security and efficiency point of view.

2. GSM based monitoring for LAN:

In this system it control and monitor the LAN network from our email i.e. internet, from anywhere irrespective of distance. Say, you have a LAN setup at your office. Sitting at home you want to learn the LAN status. You can do so by your cell phone and executing the same. In this system Administrator sends his request through SMS using his phone via GSM modem to the server. Server then recognizes the client machine which administrator is supposed to monitor and extract data from locally cached data buffer where latest 15 sec data of every machine is updated or stored and sends this info to the administrator as response. Server sends command to the clients like start process, shutdown process, kill Process, create, delete, send task list, and compile code. Through the GSM service provider the communication is done with the GSM modem which communicates with the server and the server communicates with the client. All clients are controlled and monitored by administrator via a series of sms.

3. Email based LAN monitoring:

This email based LAN monitoring project aims to develop various network utilities which are required to effectively monitor a LAN network. It aims to develop an integrated software solution that allows a network administrator to remotely monitor his LAN network by his email account. In a concern, computers are grouped together to form a network. To manage and control the activities of the network while in office is an easy task. But, while you are outstation / away from office, how do you go about with monitoring and controlling of network? Instead of depending on third party information, you can always have your cell phones with internet i.e. email serve the purpose. Login anytime to the application and see who is busy with what in the office.

4. Monitoring using sniffers

The wireless monitoring system consists of a set of devices which we call sniffers, to observe traffic characteristics on the wireless medium. A wireless monitoring system can be set up and put into operation without any interference to existing infrastructure, e.g. end hosts and network routers. In fact wireless monitoring can be performed without any interaction with the existing network, and hence is completely independent of the operational network. More importantly, wireless monitoring exposes the characteristics on the wireless medium itself so that we can infer the PHY/MAC characteristics. Thus wireless monitoring allows us to examine physical layer header information including signal strength, noise level and traffic characteristics of the flowing data in the network.

II. BASIC ARCHITECTURE

The architecture contain three components, server, client and an android cell phone. The clients are connected together creating a WLAN. Server is connected to the android cell-phone. Operating environment of the software is Android. But client machine and server machine involved in the operation may have any windows based operating system (windows XP onwards).
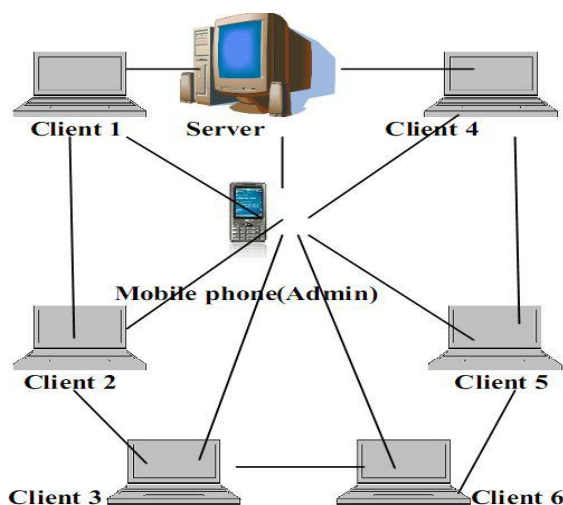

Figure 1: Architecture of System.

III. SYSTEM OBJECTIVES

Features controlled by the proposed system are as follows:

• *Net View*: Get in your cell phone, the list of entire client's in LAN. Keep pinging every time to check the latest status of the PC's. Anytime, the PC goes offline, its name is removed from the list.

• *Process List*: Get the list of all the processes running on the remote machine.

• *Read*: You can read the drives, folders, files of any of the client machines / the server machine from cell.

• *Open File*: A small text file residing in any of the client or the server machine can be opened in your cell phone.

• *Broadcast messages*: Broadcast messages to clients, Server from cell.

• *New File*: Create a new document in the cell phone and save the same in either the server or client machine.

• *Activate Process*: Activate different processes in either the server machine or any of the client's.

• *Kill Process*: Kill the desired processes on either the server or clients.

• *Shut Down*: The client machines from mobile.
 •*Locking and unlocking of resources:* The most important objective of the software is to control all the computers in the network for locking and unlocking of resources.

•*Maintaining user profile*: Ability to save the settings for individual computers in the local area network as profiles(pro files) which will save the efforts to each time repeat locking /Unlocking the same resources on different computers again and again.

IV. TECHNIQUES USED

1. Smart Virtual Network Computing (SVNC) Protoco:

The VNC protocol is an image-based protocol in which updates to a screen by applications are captured. Therefore, we can manipulate the applications running on the remote system by browsing the same image that we would be browsing if we were sitting at the remote computer. We can utilize the general availability of VNC servers. VNC is becoming widely available as an infrastructure for controlling remote computers.
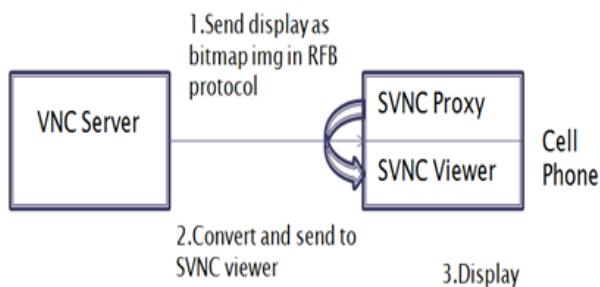
Figure 2: Smart VNC Protocol

2. RFB (Remote Frame Buffer):

RFB (remote frame buffer) is a simple protocol for remote access to graphical user interfaces. Because it works at the frame buffer level it is applicable to all windowing systems and applications, including X11, Windows and Macintosh. RFB is the protocol used in VNC (Virtual Network Computing).
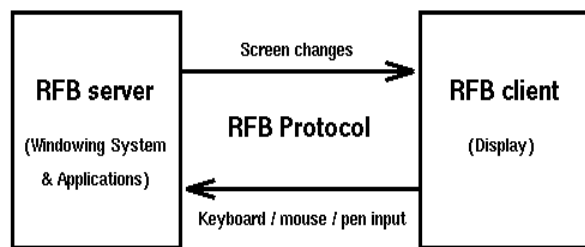

Figure 3: Remote Frame Buffer Protocol

The remote endpoint where the user sits (i.e. the display plus keyboard and/or pointer) is called the RFB client or viewer. The endpoint where changes to the frame buffer originate (i.e. the windowing system and applications) is known as the RFB server.

2.1 Display Protocol:

The display side of the protocol is based around a single graphics primitive: "put a rectangle of pixel data at a given x,y position". A sequence of these rectangles makes a framebuffer update (or simply update). An update represents a change from one valid framebuffer state to another, so in some ways is similar to a frame of video. The update protocol is demand-driven by the client. That is, an update is only sent from the server to the client in response to an explicit request from the client. This gives the protocol an adaptive quality.

2.2 Input Protocol:

The input side of the protocol is based on a standard workstation model of a keyboard and multi-button pointing device. Input events are simply sent to the server by the client whenever the user presses a key or pointer button, or whenever the pointing device is moved. These input events can also be synthesised from other non-standard I/O devices. For example, a pen-based handwriting recognition engine might generate keyboard events.

3. RMI (Remote method invention):

RMI (Remote method invention) system in Java is written with two different components as server component and a client system. The client system component will be using JNI codes which will be written in any of the native language available and will get used for locking resources such as Drives, Registry Editor and Printers etc.

V. FUTURE DEVELOPMENT

Networks in the world are Growing(Increasing) Day by Day So the controlling of the Clients in the Client-Server Network will be a very important Task.

PLANNING INDEPENDENT SYSTEM:
ANDROID SERVER FOR WLAN CONTROL AND MANAGEMENT will be platform independent making it possible to run on various platforms such as Linux.

VI. CONCLUSIONS

The recommended approach is to implement Mobile Based LAN Monitoring and Control which will easily interact with the LAN for monitoring and controlling via cell phones. This application can also been great source of administrator for colleges, company's etc.

REFERENCES

[1]. IEEE Std 802.11b-1999, January 2000. http://standards.ieee.org/reading/ieee/-std/lanman/802.11b-1999.pdf.

[2]. Jihwang Yeo, Moustafa Youssef, Ashok Agrawala *"A Framework for Wireless LAN Monitoring and Its Applications",* WiSE'11, IEEE October 1, 2011, Philadelphia, Pennsylvania, USA.

[3]. Yu-Ting Liu, Jian-Hua Tong, Yiching Lin, Tsung-Han Lee and Chia-Feng Chang "*Real-time Bridge Scouring Safety Monitoring System by Using Mobile Wireless Technology*" 978-0-7695-4281-2/10 © 2010 IEEE. DOI 10.1109/ICGEC.2010.13.

[4]. Anjumara Inamdar, Heena Aggarwal, Sayali Kadam, Mayuri Kadhane "Remote Desktop Access through Android Mobile Phone", International Journal of Science and Modern Engineering (IJISME) ISSN: 2319-6386, Volume-2, Issue-1, December 2013.

[5]. Prof. P.S. Dhotre, Anuradha Kadam, Pooja Satav, Vishakha Salunkhe, "MOBILE BASED LAN MONITORING AND CONTROL" International Conference on Computer Science & Engineering (ICCSE), 17th March-2013, Pune, ISBN: 978-93-82208-74-7 196.

[6]. E. Granado, W. Colmenares, O. Pérez and G. Cataldo "Remote Experimentation Using Mobile Technology", IEEE LATIN AMERICA TRANSACTIONS, VOL. 11, NO. 4, JUNE 2013.

[7]. Pooja Chaudhary, Manasi Bhutada, Atul Bavoria, "WLAN Monitoring Using Android Phone", IJREAT International Journal of Research in Engineering & Advanced Technology, ISSN: 2320 – 8791 (Impact Factor: 1.479). www.ijreat.org, Volume 2, Issue 3, June-July, 2014.

[8]. Aditya Bhosale ,Kalyani Thigale,Sayali Dodke,Tanmay Bargal, "ANDROID BASED NETWORK MONITOR", IRACST - International Journal of Computer Science and Information Technology & Security (IJCSITS), ISSN: 2249-9555 Vol. 4, No.2, April 2014.

[9]. Mostafa M. Fouda, Zubair Md. Fadlullah, Nei Kato, Rongxing Lu, and Xuemin (Sherman) Shen, "A Lightweight Message Authentication Scheme for Smart Grid Communications," IEEE Transactions on Smart Grid, vol. 2, no. 4, pp. 675 - 685, December 2011.

[10].   Mr. Piyush Vilas Shewale, Mr. Amit Subhash Shelke, Mr. Sourabh Madhukar Darange "Mobile Messaging using Wi-Fi Adhoc Network"- International Journal of Innovative Research in Computer and Communication Engineering (IJIRCCE), ISSN: 2320 – 9801, Vol. 1, Issue 1, March 2013.