

Android System for LAN Monitoring

Kiran Purkar¹, Akshay Jottrao², Nilesh Bade³

^{1,2,3}Information Technology, GSMCOE, Pune

Abstract- Computers are connected in a network. In collage students try to access blocked websites or they do not concentrate on their lab assignment. To prevent such kind of problems we came up with this android system which can be used for monitoring the LAN network. In college, the network in the lab is being monitored by lab in charge, but if the lab incharge is not present in the lab then monitoring is not possible. So in this paper we are developing a system in which an android app will be connected to the main LAN server via WLAN or mobile data and through this app the admin or lab in charge will be able to monitor the LAN network.

Index Terms- Android, LAN monitoring, LAN monitoring using Smartphone, Remote monitoring, Wireless media

I. INTRODUCTION

When computers are connected, then they form a network. The main problem is that clients in the network misbehave sometimes. LAN monitoring is needed in order to monitor the whole network. In existing system the LAN is monitored by installing software on LAN server and checking the activity of clients. Furthermore GSM based LAN [1] monitoring is also there, in which LAN is monitored by using a GSM mobile by sending SMS to LAN server. These old methods are not very efficient and are very costly. In order to resolve the problem, in this paper we are developing an android application which will communicate with LAN server for LAN monitoring purpose. The connection between Smartphone and LAN server will be wireless, which will allow LAN administrator to monitor the LAN network irrespective of distance.

Thus due to this the efficiency of administrator's work will increase. Smart phones are with everyone nowadays, so no need of extra hardware or any system, which makes this system cost effective. So all the details of LAN network will be provided directly into administrator's smart phone and that will be very helpful for admin to perform his job accurately.

II. EXISTING SYSTEM

There is lot of research going on wireless network and its security faults. The networks in various fields are being monitored by old techniques which has various security concerns. People are not aware of the faults and threats in existing system.

A. LAN Monitoring in School and Colleges

In college and schools there is a central server which is responsible for monitoring the whole network. The name of machine is visible to administrator and by sitting at server side administrator controls the activities done by students. Administrator can enable or disable any service through the central server. But for doing monitoring administrator always needs to be sitting in front of central server. If admin is away from central server then the monitoring is not possible and students can misbehave with the system.

B. GSM Based Monitoring

In this system the administrator can monitor the network irrespective of distance, but by using GSM modem [1]. The cell phone of the administrator is connected with LAN server with the help of GSM service provider. And the LAN server is connected with clients in the network. Administrator sends command through SMS to LAN server, which is then sent to clients. When SMS is received from administrator then LAN server detects the client name in the SMS and sends command to client. In this system a GSM modem is needed and communication is done through SMS, which is costly. Also this technology is vanishing day by day. So an efficient way must be provide to overcome problem in the existing system.

III. SYSTEM ARCHITECTURE

In our proposed system we are developing an android application. Through this application admin will be able to monitor the LAN network from anywhere. The LAN server will be connected to smart phone through wireless network or mobile data. The clients are connected with LAN server by wired or wireless connection. In order to provide all the details and information of clients to LAN server we are using [2] HTTP protocol for request and response messages between LAN server and clients. In this way administrator will send command from his smart phone to LAN server and LAN server will send this commands to clients.

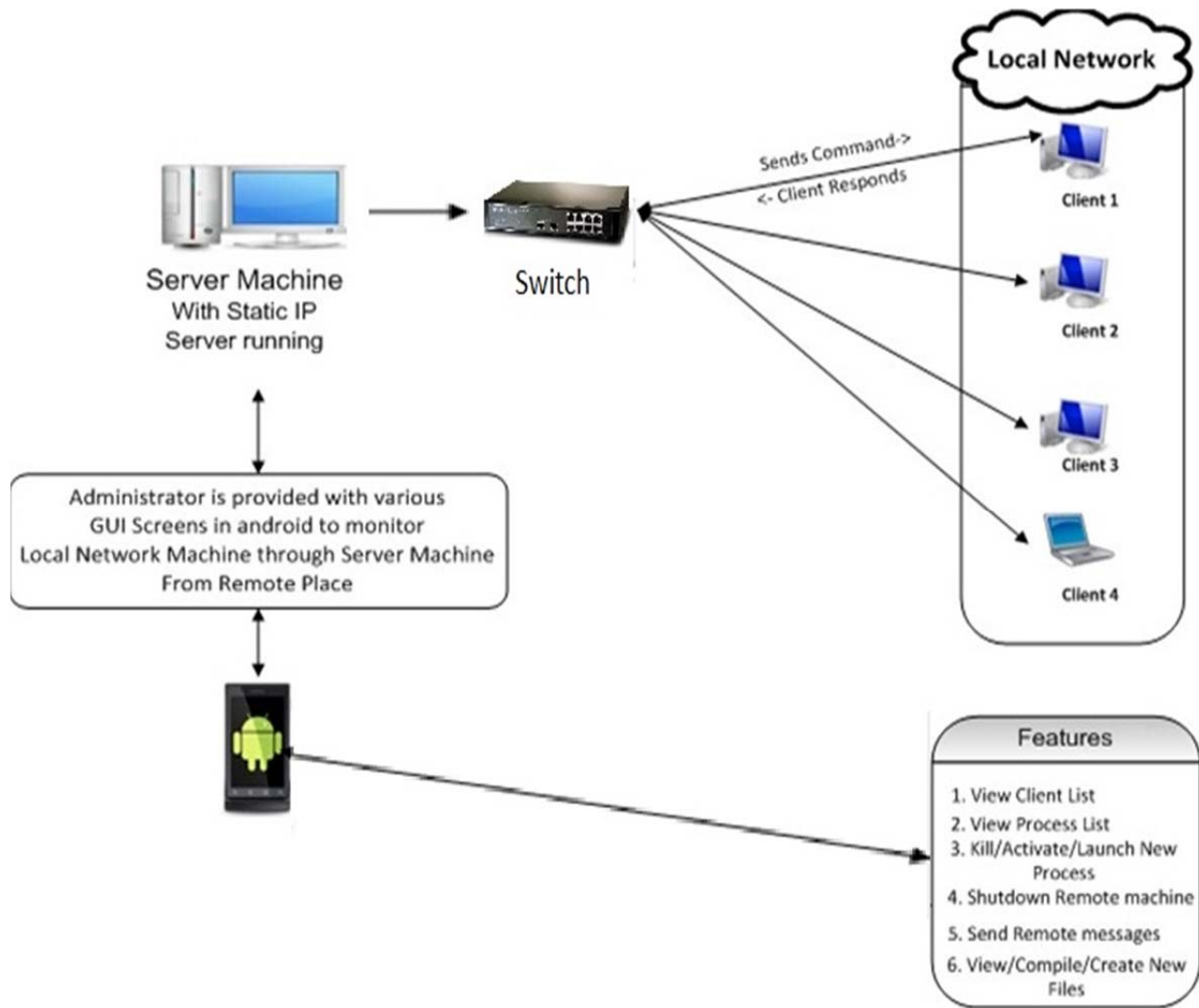


Fig. 1 Android System for LAN Monitoring

A. Proposed Architecture

As shown in above Fig. 1, our system has three main entities. First is android application, second is LAN server and third is client. So in order to monitor the clients we need to connect smart phone with server machine, which is connected to all the clients. The connection between server machine and client is wired or wireless. If it is wired connection then a switch is necessary and if it is wireless connection then there is no use of switch. The connection between android phone and LAN server is wireless.

B. System Features

So if admin wants to send commands to clients then admin can send commands with the help of LAN server and android application. Table 1 shows the list of commands admin can send to clients.

TABLE I
FEATURES/COMMANDS THROUGH ADMINISTRATOR TO CLIENTS

Features /Commands	Description
Client List	List of clients will be displayed.
Process List	List of processes on selected client will be displayed.
Activate Process	It will activate new process on selected client machine.
Kill Process	It will destroy selected process on selected client machine.
Shut Down	It will turn off the selected client machine.
Image Capture	Screenshot of selected client machine's Desktop will be shown in smart phone.
Send Message	Administrator can send message to selected client machine.

C. *Mathematical Module*

Let s be the set

$$S=\{C, S, A, Ap, P, F, M\}$$

Where,

C is a set of clients – wiz C1, C2, C3..... Cn belongs to C.

S is the server machine which is responsible for getting clients process information.

A is the administrator of the system who have control of server machine S.

Ap is the third party client device managed by the administrator (Smart phone)

Operations-

Process list

Process pl= Demon tool (client machine, all processes)

Db=add pl(pl,cid)

f=Create file on client (cid, fname, path, contents)

[Y/N]=Kill process (cid, process name, pid)

M=Create message (cid, M)

Authentication on Android

[Y/N] =Login (Password', uid)

Pass'=SHA1 (pass)

IV. CONCLUSION

So we came to conclusion that GSM based Monitoring and current LAN monitoring system in schools and colleges are not effective and are also costly. System developed in this paper is far better than existing system and is cost efficient. Administrator can monitor the LAN network irrespective of distance, which provides administrator to do other tasks same time while monitoring. Android application is a perfect way to keep an eye on network, as smart phone is easily available with everyone. The system is capable of providing the necessary details of whole network to Administrator, right in the smart phone.

ACKNOWLEDGMENT

We have a great pleasure in presenting the paper “Android System For LAN Monitoring” under the guidance of Prof. Priyanka More. We would like to thanks Genba Sopanrao Moze Collage of Engineering for providing all required facilities.

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AUTHORS

Kiran Purkar:

Studying in B.E Information Technology at Genba Sopanrao Moze College of Engineering, Pune.
E-mail address: kiranpurkar3@gmail.com

Akshay Jottrao:

Studying in B.E Information Technology at Genba Sopanrao Moze College of Engineering, Pune.
E-mail address: akshayjottrao@gmail.com

Nlesh Bade:

Studying in B.E Information Technology at Genba Sopanrao Moze College of Engineering, Pune.
E-mail address: Nileshbade19@gmail.com