

Android Based LAN Monitoring System

Kiran Purkar¹, Akshay Jottrao², Nilesh Bade³, Prof. Priyanka More⁴

¹(Department of Information technology, GSMCOE, Balewadi / SPPU, India)

²(Department of Information technology, GSMCOE, Balewadi / SPPU, India)

³(Department of Information technology, GSMCOE, Balewadi / SPPU, India)

⁴(Department of Information technology, GSMCOE, Balewadi / SPPU, India)

Abstract: When computers are connected in a network then, we need a person for monitoring the whole network. The network may be wired or wireless and we need to monitor that network for keeping an eye on any misbehavior by client in the network. In college, the network in the lab is being monitored by lab incharge, 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 incharge will be able to monitor the LAN network. This will increase the efficiency of lab incharge's work and will help in several ways. Providing details of every client in the network to the administrator is the main aim of our system

Keywords – 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.

2.1 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.

2.2 GSM based monitoring system:

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. PROPOSED SYSTEM

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.

3.1 Proposed Architecture:

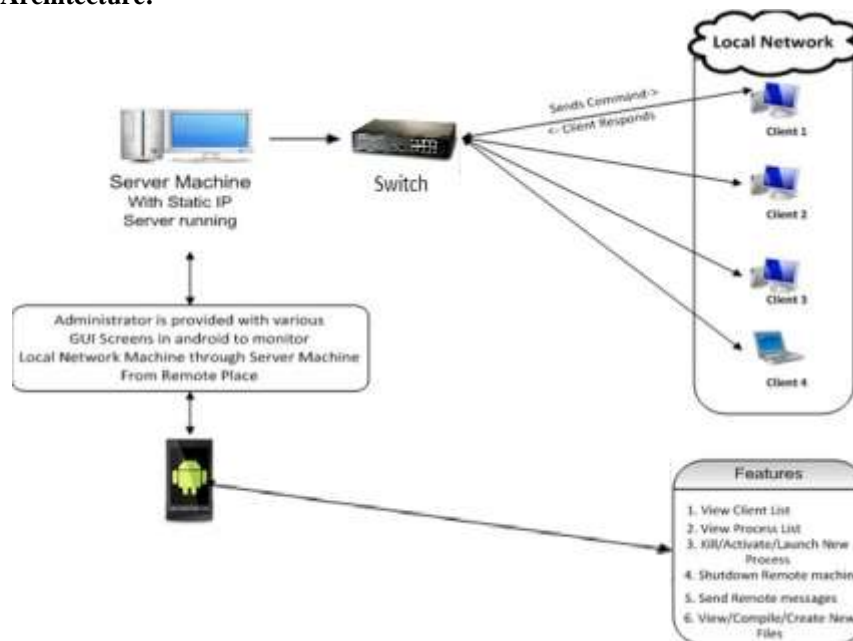


Figure 1: Android Based LAN Monitoring System Architecture

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.

3.2 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. The following Table 1 shows the list of commands admin can send to clients.

Table 1: 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. |

IV. MATHEMATICAL MODULE

Let s be the set

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

Where,

C is a set of clients – viz $C_1, C_2, C_3, \dots, C_n$ 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)

V. 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.

REFERENCES

- [1] Shiva Shree Nagendra R, Bhat Geetalaxmi Jairam, Controlling LAN using J2ME and RMI API, International Journal of Research in Engineering & Advanced Technology, Volume3, Issue 3, June-July, 2015
- [2] Prof. Ashvini Jadhav, Mr. Akshay L. Gosavi, Miss. Vrushali R. Hargude, Mr. Nikhil S. Thite, Miss. Mamta B. Sawle, Android Server For Wlan Control And Management, International Journal Of Engineering And Computer Science, Volume 4 Issue 3, March 2015, Page No. 10616-10619
- [3] Karishma Gidge, Kalyani Patil, Priyanka Wadnere, Android Based LAN Monitoring System, International Journal for Research in Applied Science & Engineering Technology, Volume 3 Issue I, January 2015 ISSN: 2321-9653
- [4] Prof. Rathod R. B., Priyanka R. Shinde, Bharati M. Shinde, Rashmi R. Bhole, Design and Implementation of monitoring LAN user wirelessly by Android mobile based on client/server mode, The International Journal Of Engineering And Science, Volume 4, Issue 4, Pages PP.37-40, 2015
- [5] http://en.wikipedia.org/wiki/Secure_Hash_Algorithm
- [6] <http://en.wikipedia.org/wiki/SHA-1>