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LAN Monitoring & Controlling Using Android APP

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Abstract: Now a days LAN is used everywhere like educational institute, organization, cybercafe etc. Keeping a track of what activity performed in LAN is almost impossible task or we can say that admin need to be present their physically to monitor. As we know Android is most popular operating system used in smart phone as on today. We are developing an android app using a GSM (Global System for Mobile communication) services that will allow administrator to remotely manage the LAN. In large enterprises the administrator has to manage the use of hardware resources and processes of the LAN. GSM and Android Based LAN Controlling System helps preventing unauthorized use of devices and processes in a LAN by controlling the network remotely.

Keywords: GSM, Access Control, Authentication, AT Commands, Distributed System,

I. INTRODUCTION

Today the world is moving towards the digitization. Everyone wants everything to be available within their reach anywhere anytime. Adding to the above context we are developing a system that will make the complicated task of network administrator easy and available at his palm.[1]

The main aim of the system is to develop an mobile app which will helps to make the network admin jobs easy and secure. It will also control and monitor the LAN network more effectively and efficiently at anytime from anywhere. This app is installed in the android phone and as per the requirement administrator can carry out any monitoring activities.

In LAN different types of network's are connected within a limited area. The main purpose of the system is to provide the maximum detailed information of LAN to the network admin. It will also bell the alarm when any illegal activities is done by client in the network. In this the client computers is connected to server and the server is connected to the mobile apps through JSON parsing. Using JSON parsing objects are send, received and information is collected . In this the network admin can access the system from the remote places but the system must have internet access. The android application is handle by network admin through which he can perform different function likes killing process, viewing the reports, controlling the networked computer state etc from the remote place. In this way the network admin is not require to depend on the third person for getting the network information. The android app in the network admin smart phone will be secure with the username and password so that it can handle by network admin only.

II. LITERATURE SURVEY

Network Monitoring System Design under LAN:- In this system monitoring is done through a central server by the administrator. Network monitoring tool is the networking tool that is used to examine usage of the local area network and provide a statistical data of the uploads and downloads in the network. Monitoring tool is usually used to monitor I/P traffic between the LAN and internet. It is a network diagnostic system that is used to monitor local area network and provide statistical display of the same. The data can be further used to improve the network efficiency. Other problem such as locating the down server, receiving the incorrect work request etc can also be removed.[2]

Network Monitoring and Analysis by Packet Sniffing Method:- Packet sniffing is the process of capturing the information transmitted across network. In this process NIC capture all traffic that is flow inside or outside network. Packet Sniffing mainly used in network management, monitoring and ethical hacking. To perform sniffing tool named packet sniffer. A packet sniffer sometimes referred to as a network analyzer, which can be used by a network administrator to monitor and troubleshoot network traffic.[3]

Monitoring LAN Using Remote Method Invocation:- The administrator can view the static image of clients desktop. The aim of the project is to control and monitor the LAN network using the technology RMI. Remote Method Invocation(RMI) allows a java object that executes on one machine to invoke the method of a java object that executes on another machine. It allows to built the Distributed application between the server and the client PC. There are three processes that participate in support of the RMI

- A. Client is the process that is invoking a method on a remote object.
- B. Server is the process that own the remote object.
- C. The Object Registry is a name server that relates object with names.

The network security provided through the RMI is better and fast accessing the client result.[4]

Email Based LAN Monitoring System:- The purpose of email based LAN monitoring is to develop various network utilities which are required to effectively monitor a LAN

network users activity. This System provide solution that allows a network administrator to remotely monitor his LAN network via his email account.[5]

Smart GSM Based Home Automation System:- This paper investigates the potential of Full Home Control, which is the aim of the Home Automation Systems in near future. The analysis and implementation of the home automation technology using Global System for Mobile Communication (GSM) modem to control home appliances such as light, conditional system, and security system via Short Message Service (SMS) text messages is presented in this paper. The proposed research work is focused on functionality of the GSM protocol, which allows the user to control the target system away from residential using the frequency bandwidths. The concept of serial communication and AT-commands has been applied towards develop-ment of the smart GSM-based home automation system. Home owners will be able to receive feedback status of any home appliances under control whether switched on or off remotely from their mobile phones. [6]

From the literature survey we conclude that existing system has following disadvantages such as existing system does provide a mechanism to keep a watch on the activities of specific client in Local Area Network, It does not provide a remote access of LAN to administrator, All the functionality needed to perform the task of administrator is not available in single application, Existing system is also not available on android platform.

III. OBJECTIVES AND SCOPE

- A. The main objective of the proposed system is that it helps in preventing unauthorized use of hardware devices and software
- B. It allows to control and monitor the LAN network from the wireless handheld device i.e. cell phone from anywhere irrespective of distance.
- C. It allows administrator to perform various activities such as booting of PCs, shutdown of PCs, activate/kill Process, take screenshot of client PCs etc.
- D. It provide bidirectional communication between client and admin.(Ex. Chatting feature is added so client can request to admin to provide the permission to access the resources.)

IV. PROPOSED SYSTEM

The proposed system helps in preventing unauthorized use of devices and software in a network by remotely monitoring and controlling the network through available GSM services using android app. The main goals of our system is to keep a track of each client in a network in terms of hardware &

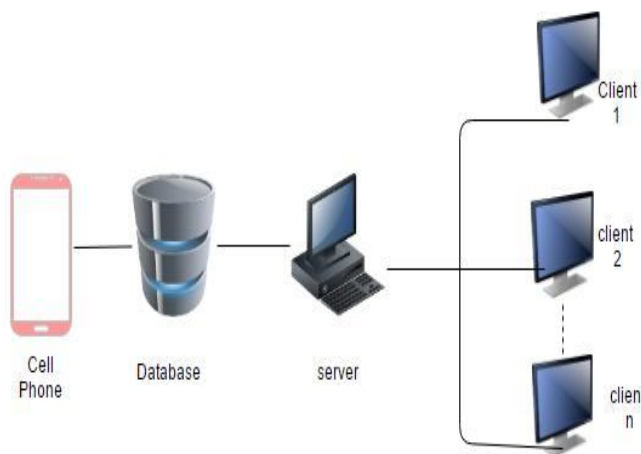


Fig. 1: System Architecture

Software resources and also manage the network and provide the access to different services to client remotely.

In large enterprises, the administrator has to manage the use of hardware resources and processes of the LAN. GSM and Android Based LAN Controlling System helps preventing unauthorized use of devices and processes in a LAN by controlling the network remotely. The system is divided in two modules:

- A. Master.
- B. Slave.

Master is a networked windows and GSM application that runs on server and allows setting network client rights, setting rights Violation actions, viewing reports. Slave is a windows service that runs on client. It automatically gets activated as the system boots and keeps monitoring the local computer devices and processes. As a client, if user uses any device (pen drive, CD/DVD, printer, etc) or starts any process (Browser, notepad etc) or install any software or game then the slave checks for the master set permissions and take appropriate actions. At this time, it also records the current (logged in) username, date, time, I.P address of the computer and sends report to the manager and It get notified to administrator through android app.

The communication between the server and admin cell phone can be done in two ways.

- C. Using a text message commands can be send to server. Then server decode the command and it will find the corresponding action which is to be applied to client.
- D. We can also use https request to send commands to the server. After receiving the http URL request it decode the http URL to find out the action to be taken and it will be applied to respective client.

V. CONCLUSION

We had done detailed survey on existing systems from

that survey we conclude that existing system are not convenient because it does not provide any type of restriction on unauthorized hardware and software access. Thus we developed a new system based on android platform and this android LAN monitoring system based on GSM services will monitor the LAN from remote place. It also gives detail information of the network to admin. As well as we will be able to restrict unauthorized use of hardware and Software devices.

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