

Access and Monitoring WLAN Using Mobile Application

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Abstract—Now a days successful working of computer networks is important. For that network management systems are very necessary. This paper describes the method by using which a wireless LAN network can be controlled by a user with the help of mobile application. To monitor and control of the various activities of the network, the interface must be created so client should be able to execute many commands to control the activities going on the network. For connecting the phone to the server Wi-Fi hotspot can be used as internet connectivity tool.

Keywords- Mobile phone., Mobile Device, WLAN, Wireless communication Android, LAN Monitoring and Control.

I. INTRODUCTION

Access and Monitoring WLAN Using Mobile Application is developed for monitoring the network from our android phone. In recent years computer operated devices exist in every part of world. Use of mobile phone is regular in day to day life. The objective of the project is to give the maximum details about the computers in network to the administrator, so admin will be able to view and monitor all the client machines in the network. In this project a network of computers is formed which is wireless network. This network is monitored and controlled by a central server. This is nothing but the client-server architecture. The server is connected to an android based application. The client machines connected in the network will be client and the mobile phone will act as administrator of the network. All the monitoring will be done through the android app installed in smart phone only. Administrator will monitor all the activities in the network with the help of server only.

II. SYSTEM IMPLEMENTATION

Managing the network can be done either by entering the commands via phone or controlling the network directly by the server which is part of network. The user will enter command through the mobile application which would be sent to a server which would carry out

the further working. The admin of the network will be authenticated using SHA and then he is getting the rights to monitor the network. Admin have to give login id and password to get the access of the network. If the appropriate id password provided by the user are valid then only authentication will be done and user can monitor the network.

A. Component Details

The app will be installed on mobile from where all the commands are given by the user should be received and then only further working would be carried out. Then commands would be send to the client machine to perform the required function and give necessary feedback to the server. The mobile is used to monitor the server application by the user from any place within network area. So system is divided into three parts:

1) Server: It receives the requests and control commands from the administrator. After that server processes these commands to perform the desired functions on the network. There is also communication with all other client destinations on the network and monitoring activities are carried out by server.

2) Client: A client is the primary unit of network. A number of clients (controlled by the main Server) works to complete the task as assigned to it by the server. Each client is installed with a client program which continuously keeps track of all the processes running on the client.

3) Android Application: It is an application which is in-stalled on the Android based mobile phone. The use of this application is to allow the user to control the activities of network form any place within network area. The admin enters the commands through an Android base application which are received by the server for further functioning. This application can also be used to monitor the activity of any client machine on the network.

III. SYSTEM ARCHITECTURE

Administrator uses the application to send the request through ISP to the server. After receiving request Server identifies a client machine which is going to monitor. Server extract the data from local buffer cache. Every machines data is being updated periodically and it is stored in local cache. Then as a response this information is shared to administrator. The application is for providing administrator to send command message quickly without retyping message again. Server sends commands to clients such as shutdown of process ,starting new process, killing process, net view, External media detection. Administrator can controls all clients with the help of Server via a series of messages. The clients cant communicate back with the administrator as communication is unidirectional. Only requirement is that the phone must have Android Operating System . Also the network traffic can be checked By using command. The software is dependent on server ap-plication. It is has ability to sending and receiving commands.

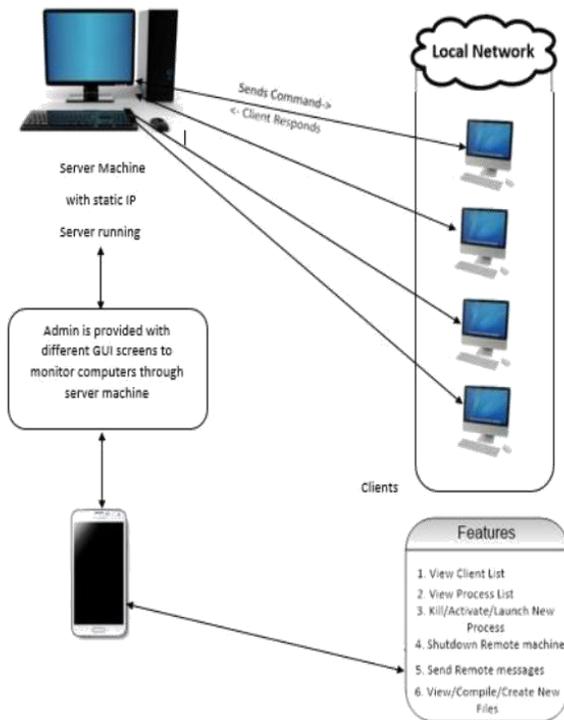


Fig. 1. System Architecture

Notification can be sent on mobile and administrator will take further action by sending a notification in a specific format.

IV. MATHEMATICAL MODEL

Let s be set

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

Where,

C is a set of clients . C1, C2, C3..... Cn belongs to C. S is server machine which is responsible for getting clients Information.

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

Ap is the client device managed by the admin. for functions like as follows-

P is set of processes P1, P2, P3.....Pn belongs to P.

F is set of files F1, F2, F3.....Fn belongs to F.

Operations-

Process list pl= Demon tool (client machine, 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 msg (cid,M)

Authentication

[Y/N] =Login (Password, uid) pass=SHA1(pass).

V. FEATURES PROVIDED BY APPLICATION

The application takes ip address and port number as input and provide the details of the client machine with server machine. Features provided by the software are as follows:

Net View: It gives the list of all connected clients in the network. Check current status of clients .When any client goes offline its name is removed from the list.

List of Processes: Get the current status of all going processes on client machine.

Activate New Process: To start various processes either on server or client machine.

Kill Process: Terminates the processes on the client machine.

Access Files: read the drives, files, folders of the client machines from mobile android app.

Open a File: A small text file in any of the client can be display in your android phone.

Send Messages: Sends messages to clients ,server from mobile phone.

Shut Down: shut down desired client pc through mobile app.

Screenshot: capture the screen of client computer.

Pendrive Detection: External drives such as pendrive can be detected.

VI. OVERVIEW OF IMPLEMENTATION AND TESTINGFOR PROPOSED SYSTEM

A. Implementation

Implementation is most important step in the project where the design of the project is converted into a working system. In this project the implementation details of controlling and monitoring LAN is through Cell phone are given. Access and monitoring WLAN Using android application is implemented by using android based platform. The system is developed in a way that LAN in Network is controlled by the server machine and then server can controls all other machine in network. The android Based LAN Monitoring and Control is a tool used to monitor network through a mobile device by the administrator. This application is installed on machine There are two main application one is server program which works as primary process on the machine and offer the services to administrator for control and monitor the network. Administration has all rights to monitor LAN in network. Second is the client program which is the secondary process and controls all the activities of the client. The server application can control through mobile that are registered on device. Using this application the administrator can perform following actions:

Kill Process
Net view
Shut down

Start Process
Send Message.

The server keeps the record of list to check the live hosts functioning in the network. The server can contact with the any client using his ID and also send message to client.

B. Testing

Testing focuses on the evaluation and assessment of product quality realized through a number of core practices.

Successful Authentication Of the Administrator:

The only authenticated person i.e. admin can access the system. In the login screen the user name and password is entered ,which is set by the admin.Test cases for the login by administrator are based on the following inputs:

UserName same as set by the admin.Password same as set by the admin.

In case the user name and password is Admin and android respectively.After entering the correct id and password the admin can access, control and monitor the LA network. Also there is testing like

Test Cases for Main Menu
Test cases for IP Setting

So to control Clients in the Client-Server Network will be a very important Task. It will give following features:

Provide security.
Provide scalability.
Provide parallelism.
Integration with schools and colleges.

VII. EXPECTED RESULTS

Whatever the objectives of project mentioned in abstract are followed to get the specified result. The different steps are as follows:

To monitor and control the LAN network through mobile phone of administrator which is connected to the server through wireless media such as wifi.

To provide access to the client in a LAN network through Wi- Fi.This is achieved by using WAP Protocol.

To provide easy searching, clients have stored their details (Name with IP Address) in Database.

Provided user interface should be User Friendly.

Overall implementation of the proposed system it can be possible to test the complete overview of the idea of the users and then we have specific control and monitor LAN network. Further investigation can also be performed by implementing an effective mechanism to the working system. This gives result to the monitor and control LAN network.

VIII. FUTURE SCOPE

Networks in the different organizations are growing rapidly. So to control Clients in the Client-Server Network will be a very important Task. It will give following features:

- Provide security.
- Provide scalability.
- Provide parallelism.
- Integration with schools and colleges.

IX. CONCLUSION

The available techniques to monitor and control of lan network are perfect . But for improving the accuracy, more efforts need to be taken. In the proposed system, we have used the Wi-Fi network and LAN. The application is provided with a minimum cost, availability and accessible and remotely monitored. LAN monitoring using wireless media has been introduced.

Fig. 2. Results

As far as the industrial applications Are also considered and this can be viewed as customized, a low cost wireless LAN monitor system. This application can be suit by any other industrial requirement related to monitoring and controlling LAN . The target is to control LAN network remotely using the wireless media to fullfil user needs and requirements. The WLAN technology is capable to provide the solution to be controlled remotely,provides security and is low cost as compared to the previously existing systems. Hence we can said that

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