

GSM Based LAN Monitoring and Control

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Abstract— The most highly demanding task in the field of IT industries is the efficient computer network management. There are many urgent issues or requests related to such networks which network manager needs to solve immediately for avoiding the any kind of interruptions. Sometimes, network admin may be situated at different places, so in such cases there is not possible to resolve any urgent issues with the office network tasks. To solve such problems in this project we describe the architecture of a novel tool for network management using mobile devices. In a concern, computers are grouped together to form a LAN and to manage and control the activities of the LAN while in office is an easy task. But, while you are moving away from server, it is difficult to monitoring and control the network? but however, you can always have your cell phone serve the purpose. Just load the project on server machine, log in anytime to the application and see what is going on in LAN network. Consider the LAN setup where the entire computer is connected with the central server and that server continuously sends the data the web server. The user of application can call any command from the mobile phone and see the various activities of LAN network.

Index Terms— System Feasibility, UML and DFD diagrams,, Remote Monitoring & Control, Sim300 , CMD Commands, Password Security, GSM based Mobile phone.

I. INTRODUCTION

Our society is heavily depending on computer controlled device. Now days the usage of cell phone is rapidly increased and became a need of everyone in society. So mobile phones can be easily used to control any activity. The main purpose of our project is to control and monitor the LAN status from our cell phone irrespective of distance. Suppose we are having a LAN setup at home, office or collage and by sitting at home or at any remote place we want to know the LAN status. We are able to do so by storing this system tool on server machine and executing command from our cell phone. In this era of telecom devices, mobile devices are widely used and it has penetrated every aspect of our life, but remote monitoring and controlling of LAN network through cell phone is still a mirage, this application based system tool is an effort to make this mirage a reality, and this is where the scope of this project lies. Consider having a LAN setup with server machine and also clients connected to the admin via mobile cell phone.

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Using GSM based mobile phone the admin of LAN monitors and controls the activities of the clients in a LAN.

II. SYSTEM OBJECTIVES:

Various features controlled by this system tool are as follows:

Network status: the list of entire client's in LAN is shown to admin. It helps to keep pinging every time to check the status of the Clients. When the PC goes offline, its name is removed from the list.

Active Process List: The list of all the processes running on the remote client machine is shown.

Broadcast: this tool can broadcast messages to clients, Server from cell phone.

Activate Process: Admin can activate processes in either the server machine or any of the client's from cell phone.

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

Shut Down: It can shutdown server or client machines from mobile

This proposed application based tool is used to provide details about the network to the admin on their mobile phone, when he/she is moving away from server machine. Apart from this following are the objectives of this project:

- To provide the detailed study over the working of GSM networks.
- To design the different strategies for the remote monitoring of LAN.
- To implement the architecture for monitoring the LAN.
- To provide the LAN management information's on the mobile as results.

III. ARCHITECTURE OF SYSTEM:

Administrator sends his request through SMS using his mobile phone via GSM modem to the server. Server application tool then recognize the request and generate appropriate command to serve the administrator request. Server sends command to the clients like starting process, shutting down process, killing process, creating, deleting and sending task list, compiling code. Although the GSM service provider the interfacing is done with the GSM modem which communicates with the server and then the server communicates with the client. All the server and client machines are controlled and monitored by admin via a series of text messages which are networking commands for which we are using a SMS parser to parse the SMS.

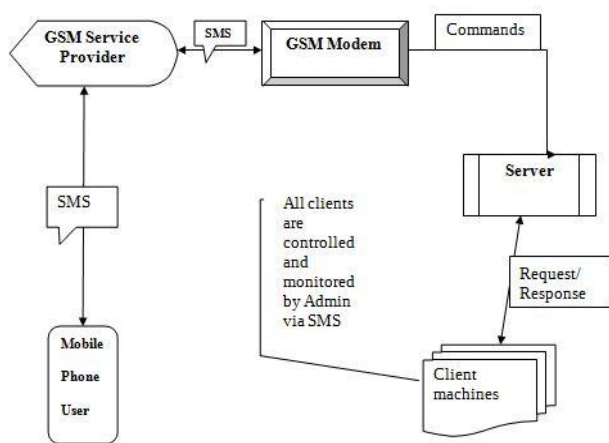


Fig 1. Architectural view of system

IV. BLOCK DIAGRAM OF PROPOSED SYSTEM

From the block diagram of proposed system we see that from mobile SMS is send to application tool installed on server machine through GSM modem. In SMS there is mobile number of the admin and command for operation to be performed on client machine. That text message is send to server then server recognizes the desired client from all clients. By using SMS parser we recognize the SMS fully, using process builder we perform desired process on that client. Then after completion of that operation on the client, client sends the response to the server. Then server sends response to the admin through GSM modem. Again SMS parser is used to send SMS to admin that specifies the acknowledgement about action performed.

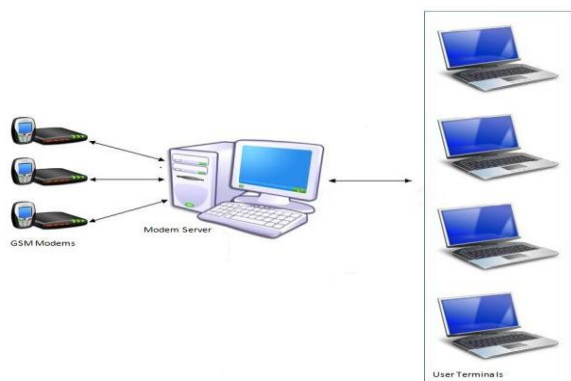


Fig 2. Block diagram of proposed system

V. INTERFACES:

5.1) Hardware Interfaces

5.1.1) Mobile Devices

The hardware interface will support mobile devices, such as smart phones and LAN network.

5.1.2) External Storage

The product will support flexible connections with external hard drives in order to support automatic archiving capability.

5.2 Software Interface

5.2.1 Operating System

This application tool works with all windows operation systems.

5.2.2 Platform

The system is developed using visual basic platform.

VI. APPLICATION OF PROPOSED SYSTEM

- LAN monitoring and controlling at the university/college level can be used for monitoring, logging and controlling of network that traverse university networks. The purpose of this project is to maintain integrity, confidentiality and availability of the university network and information.
- LAN monitoring and controlling at the office level can be used to monitor the status of office LAN by the admin at any time irrespective of location. He/she is able to do so via his/her cell phone
- LAN monitoring and control at the malls is used to monitor all information of malls by admin at any time although he/she is moving away from server machine.

VII. CONCLUSION

This research paper explains the basics of GSM based Remote LAN monitoring and control .SMS/ text message remains the most efficient communication system for getting the content on to the mobile phones. The application tool developed is a server based software system tool, that provides ability to send and receive SMS messages through GSM network and communicates through standard TCP/IP protocol between server and mobile phone.

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