International Journal of Modern Engineering Research (IJMER)
www.ijmer.com Vol.2, Issue.2, Mar-Apr 2012 pp-387-389 ISSN: 2249-6645

GSM Based LAN Monitoring and Controlling

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ABSTRACT

The project aims to develop various network utilities which are required to effectively monitor a LAN network. It aims to develop an integrated software solution that allows a network administrator to remotely monitor his LAN by his cell. In a concern, computers are grouped together to form a network to manage and control activities of network while in office is an easy task, but while you are outstation/away from office to monitor and controlling of network instead of depending on third party information you can always have your cell phone serve the purpose login anytime to application and see who is busy with what in the office. This project is to provide the maximum details about the network to the administrator on their mobile phone, when administrator when administrator is away from office/goes out station.

Keywords **- LAN, GSM,SMS, J2SE, WWW, MODEM**

I. INTRODUCTION

Today the world is rapidly changing the statement "We are in the world" to "world is in our hand". The main aim our project is to control and monitor the network from our wireless handheld device i.e. cell phone from anywhere irrespective of distance. say you have a LAN setup at your setup at your office. Sitting at home you want to learn the LAN status. You can do so by storing this project in your cell phone and executing the same. In the era of project mobile devices, wireless devices are widely used and it has penetrated every part of our life,but remote monitoring of network through mobile device is still a mirage, this project is an effort to make this mirage a reality, and this is where the genesis of this of this project lies. Consider a LAN setup with the server machine connected to GSM service provider via a GSM modem. The interaction between the clients and the wireless media happens through this server. A small text file residing any of the client or server machine can be opened in your cell phone.

II. FEATURES CONTROLLED BY SYSTEM

1.1 NET VIEW :
Get in your cell phone, the list of entire client's in LAN. Keep pinging every time to check the latest status of the PC's.

1.2 PROCESS VIEW:
Get the list of all processes running in the remote machine.

1.3 ACTIVATE PROCESS:
Activate different processes in either the server machine or any of the client's.

1.4 KILL PROCESS:
Kill the desired processes in either the server or clients.

1.4 READ:
You can read the drives, folders, files of any of the client machines/ the server machine from cell.

1.5 OPEN FILE:
A small text file residing in any of the client or the server machine can be opened in your cell phone.

1.6 BROADCAST MESSAGES:
Broadcast messages to clients, server from cell.

1.7 NEW FILE:
Create a new document in the cell phone and save the same in either the server and client machine.

1.8 SHUT DOWN:
Shut down the client machine from mobile.

III. ARCHITECTURE OF PRAPOSED SYSTEM

Administrator sends his request through through SMS using his phone via GSM modem to the server. Server then recognizes the client machine which administrator is supposed to monitor and extract data from locally cached data buffer where latest 15 sec data of every machine is updated or stored and sends this info to the administrator as response.

Administrator is provided with a GUI based application in J2ME to send command message instantly without the need to retype message every time. Server sends command to the clients like start process, shutdown process, kill process, create, delete, send task list, compile code.

Through the GSM service provider the communication is done with the GSM modem which communicates with the server and the server communicates with the client. All clients are controlled and monitored by administrator via a series of SMS.

The administrator controls the LAN through his mobile even he is at the remote place. The clients cannot send back or communicate to the administrator the communication is unidirectional it is not two way.

The mobile used can be any mobile having GSM facility in it. Also the administrator can check the network load on the LAN by typing only a command. In this also serial USB interface and set of commands is used for administrator to communicate to clients.

The efforts that have been made regarding developing a LAN monitoring system are increasing everyday. But a lot of them are still in their initial stages. One of the softwares that are available in the market is ActiveXperts SMS

Messaging Server but it has quite different application from our project. Active SMS messaging server is windows based software package that enables you to send, receive and process SMS and email messages.

User can use his/her mobile phone to query a database in his computer via SMS.

LAN monitoring using GSM technology can be used in offices, malls as well as college or university level.

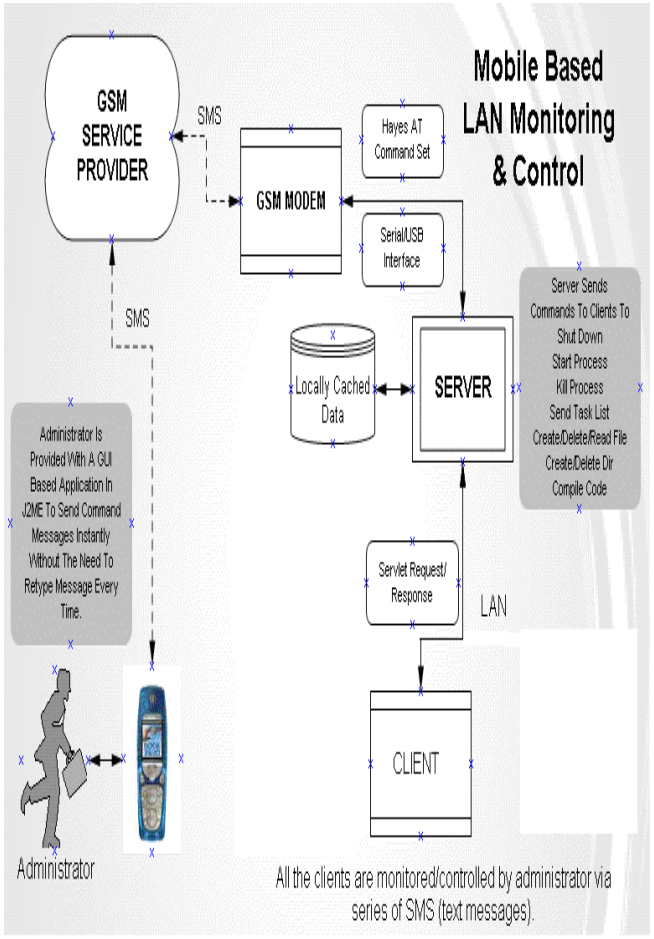

Fig.1Architecture of mobile(GSM) Based LAN monitoring and control.

IV. BLOCK DIAGRAM OF PROPOSED SYSTEM

From the block diagram of proposed system we see that from mobile SMS is send to server through GSM modem. In SMS there is mobile number of the user, client name and operations to be perform on the client. That SMS is send to server then server recognise the client from all clients.

By using SMS parser we recognise the SMS fully, by process builder class we perform that process on that client.

Then after completion of that requested operation n the client, client send the response to the server. Then server send response to the administrator through GSM modem again SMS parsing is used to send SMS to administrator that specify that operations on the client is performed.

There is no any database maintained there is only one temporary database or we can say file. Through database we get the data we needed. There is many clients connected to server all clients have name given to it. Below we see the block diagram of GSM based LAN monitoring.

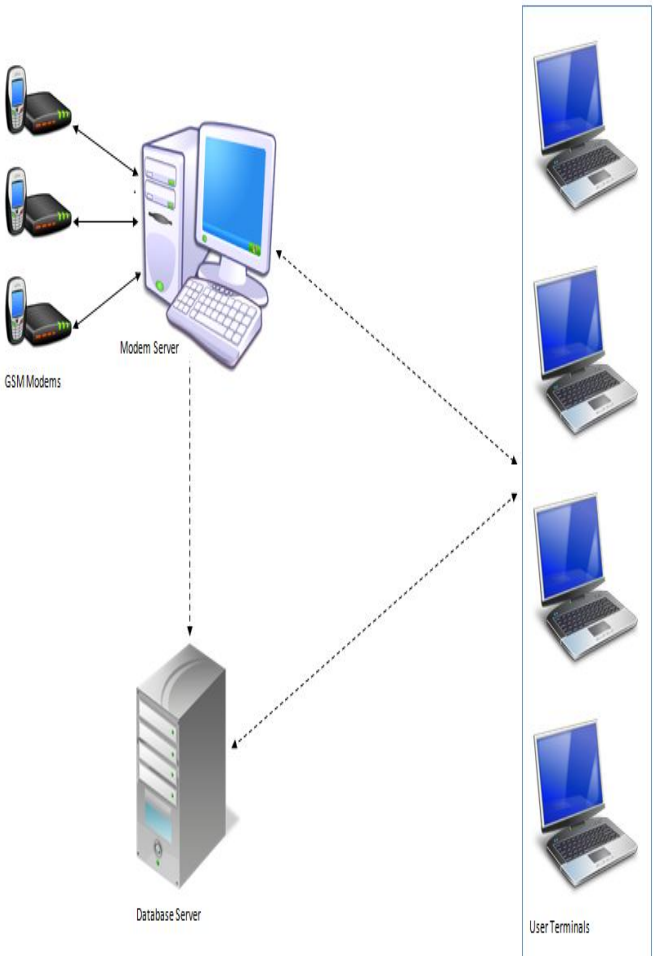

Fig 2. Block diagram of proposed system

V. TECHNOLOGY USED IN PROPOSED SYSTEM

In GSM Based LAN monitoring system we use technology like

1. **SERVLET:**
   By using servlet in these system we communicate with client and server.

2. **NET BEANS:**
   For better programming we use net beans for designing this system.

3. **PROCESS BUILDER:**
   This class is used in this system which is very important to create operating system processes.

4. **ABSTRACT WINDOW TOOLKIT:**
   This is java's toolkit used for windowing ,graphics and user interface creation for this system.

5. **J2EE:**
   It is collection of java programming API's used for java platform programs. It is used to program this system.

VI. APPLICATIONS OF PROPOSED SYSTEM

1. LAN monitoring at the university/college level can be used for monitoring, logging and retention of network packets that traverse university networks. The goal of this project is to maintain confidentiality, integrity and availability of the university network infrastructure and information assets.
2. LAN monitoring at the office level can be used to monitor the office LAN by the administrator at any time if at a particular point he/she cannot be present there. He/she does not have to depend on any third party information regarding the LAN and can instead check the LAN status himself using his mobile.
3. LAN monitoring at the malls is used to monitor all information of malls by administrator at any time if at particular time he/she cannot be present there.

VII. CONCLUSION

This paper explains the basics of GSM based LAN monitoring.SMS remains the most efficient communication system for pushing the content on to the mobile devices. The software developed is a server based software application that provides ability to send and receive SMS messages through GSM network and communicates through standard TCP/IP protocol.

ACKNOWLEDGMENT

We are thankful to the department of computer engineering, MIT , for their kind support.

REFERENCES

JOURNAL PAPERS:

[1] B. Woodward, R. S. H. Istepanian, and C. I. Richards, Design of a telemedicine system using a mobile telephone, *IEEE Trans. on Information Technology in Biomedicine, vol.5, no. 1,* pp. 13–15, March. 2001.

[2] Jinwook C., Sooyoung Y., Heekyong P., and Jonghoon C, MobileMed: A PDA-based mobile clinical information system, *IEEE Trans. on Information Technology in Biomedicine, vol. 10, no.3,* July 2006.

[3] Md.Asdaque Hussain and Kyung Sup Kwak, Positioning in Wireless Body Area Network using GSM, *IEEE trans. on International Journal of Digital Content Technology and its Applications Vol 3, Number 3,* September 2009.

[4] Peersman, G., Cvetkovic, S., The Global System for mobile Communications Short Message Service, *IEEE Personal Communications,* , June 2000

[5] Collesei, S., Di Tria, P., Morena, G. Short Message service based applications in the GSM network, *5th IEEE International Symposium on Personal, Indoor and Mobile Radio Communications,* 1994.

[6] Coskun and H. Ardam, A Remote Controller for Home and Office Appliances by Telephone, *IEEE Trans. Consumer Electron. , vol. 44, no. 4,* November 1998.

[7] Daldal Nihat, GSM Based Security and Control System, M.Sc. Term Project, *Gazi University, Ankara,* 2003.

[8] Ren Fengyuan, Huang Haining, Lin Chuang, Wireless sensor network, *Journal of Software,Vol. 14, No. 7,* March, 2003.

BOOKS:

[9] Hegering ,Heinz-Gerd, Sebastian Abeck, Bernhard Neumair , *Integrated Management of Networked Systems:concepts, architecture, Operational Application Networking* (Morgan Kaufmann, 1999).