Monitoring PCs using Android

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Abstract— In today's era, electronic devices and PC's are the vital part of ones' life. Our project represents how a single PC or multiple PCs connected in a network can be controlled from remote place with your smart phone device with the help of Internet. An important aspect of the technology is to remotely monitor these devices. The project presents an application using which user can connect to any computer having Client Application running on it provided this application is currently installed on the android phone. It is basically an Android based Mobile Application for keeping an eye on a Target PC or multiple PCs. User can monitor the Target PC, provided its MAC address is known. By getting MAC address from the PC, the smart phone can constantly keep in touch with all the computers registered. All the applications running on the computers will be monitored by the hand held device. One can use the application to copy files from PC to the android device, start and stop any applications installed on the Target PC, shutdown the Target PC, configure allowable applications on the target PC, get the online/off line status of the machine and much more. In our project we will be using JAVA and Android as both are open source platform thus they allows the development of new ideas and tests them with a set of open standards.

Index Terms— .NET, Android, JAVA, LAN, Listener, MAC, NIC, Server, TCP/IP, XML, WOL.

1 INTRODUCTION

Initially phones were merely used for calling or texting. Now-a-days, the scenario has changed. In today's world, more focus is given on the availability of the internet and thus using various applications present in the android market. Our project focuses on providing the user with the ability to keep a constant watch on the computers that he has registered using the smart phone. With the help of the project, the user can use various facilities which includes configuration of the applications which the user wishes to restrict or when such applications are opened, using the hand held device the user can terminate these applications. Also file transfer can take place between the phone and the computer also between the computers registered on the phone. The application will work only if the Android phone is above version 2.3 and the server has to be Windows server 2003 or above. The application is developed using .Net on the client side and using Java on the hand held device. The server acts as the database, which uses XML also it behaves as an intermediate between the client computer and the android phone.

To manage and control the activities of the computers while in office is an easy task. But, while you are outstation / away from office, how will you monitor and control these computers? Instead of depending on third party information, you can always have your cell phone serve the purpose. The basic idea behind our project is to provide the user with an Android application that helps him to monitor the computers while he is away from his desk. The computers are registered using their MAC address. The MAC addresses will be stored in an .XML file on the server. All the applications which the user wants to restrict are kept in a black list which will be stored in the database. If any of these restricted applications are opened by an unwanted person then the client sends a notification to the smart phone and the cell phone user will have the authority to terminate these applications. The user's request will be sent to the client for processing through the server and the client then responds accordingly and the result is sent to the Android phone. Through our application certain operating system calls are made which include wake on LAN (WOL) through which we can switch on the computer.

2 LITERATURE SURVEY

Through the literature survey we came across certain papers which provided remote access to a single computer. Also, presently in the android market we have applications which can access the PC using the phone as if we were actually using the PC. Some examples include, TeamViewer, LogMeIn, etc. While going through all the similar applications, we realized that no application in the current market could provide the user to monitor the computers that are connected to it. This was one of the drawbacks of the applications that are present in the android market. Keeping this drawback in mind, we decided to develop an application which can help the user to remotely monitor all the computers that he has registered through his android phone. Also we focus on wake on LAN which can be done using certain operating system calls. What the previously developed applications lack, we focus on those areas to built an application which will be user friendly and will provide the user with better facilities.

2.1 Related work

The papers which have been published previously include, an application called A Framework for Wireless LAN Monitoring and Its Applications, VNC architecture based remote desktop access through android mobile phones and PocketDroid - A PC Remote Control.

2.1.1 A Framework for Wireless LAN Monitoring and Its Applications

This application monitors the WLAN, here they implement an actual wireless monitoring system and demonstrate its effectiveness by characterizing a typical computer science department. Regarding the security, they identify malicious usages of WLAN, such as email worm and network scanning. The results also show excessive retransmissions of some management frame types reducing the useful throughput of the wireless network.

2.1.2 VNC architecture based remote desktop access through android mobile phones

In this paper, they enlist the process to access the desktops of remote computer systems with the use of a android based cellular phone. A user will be able to access and manipulate the desktops of remote computers through a VNC viewer that will be provided on the user's cell-phone. The user can access and manipulate the desktop within the Wi-Fi range irrespective of various platforms like windows, mac or linux.

2.1.3 PocketDroid - A PC Remote Control

This paper presents an application named PocketDroid, using which user can connect to any computer having Server Application running on it. It is basically an Android based Mobile Application for controlling a Target PC. User can have full access of the Target PC, provided its IP address is known.

3. GOALS AND OBJECTIVES

In our project we are monitoring PCs connected in LAN, by registering them through their MAC and responding accordingly to the end user's request. A black list is created which contains all the applications which the user wants to restrict. Thus configuring the computers connected in the LAN. This blacklist is stored in the database along with the username and password of the user and all the computers that he wishes to monitor. When any restricted application is opened then the user has the authority to terminate these applications. Thus our project provides a constant eye on all the applications running on the computers. The user can also copy files from the computers into his smart phone using our application or set a session schedule during which the computer should remain on.

4. PROPOSED SYSTEM

The application to be developed is proposed to work over all android phones which are above version 2.3, whereas the server is restricted to be Windows server 2003 or 2008.

Here the android phone sends a request to the server via WCF services provided by .NET and then the request is processed and forwarded to the client computers. All the database modifications are done by the database server. Data is stored in an XML file which can be easily retrieved by the android user. The XML classes in the .NET Framework have been designed to offer High productivity, Compliance with W3C standards, Extensibility, A pluggable architecture, High performance, etc. Windows Communication Foundation (WCF) is a framework for building service-oriented applications. Using WCF, you can send data as asynchronous messages from one service endpoint to another. The 'Listener' part in the client processes the request sent by the server and responds to it aptly. The server and the clients are connected over the dedicated connection i.e TCP / IP. It provides end-to-end connectivity specifying how data should be formatted, addressed, transmitted, routed and received at the destination.

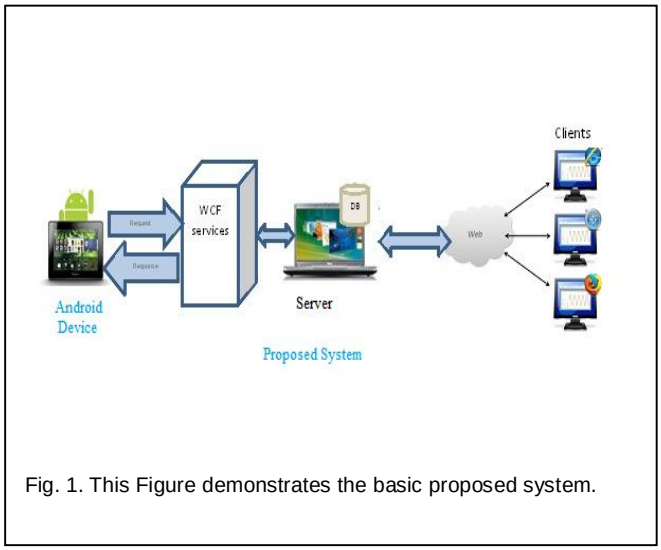

Fig. 1. This Figure demonstrates the basic proposed system.

Hardware requirements : PCs (one or more), LAN, Network interface card, Switch, Android phone version 2.3 above.

Software requirements : .NET, JAVA, XML, Windows 2003 or 2008, Android emulators Eclipse Indigo

5. CONCLUSION

Android market being the most widely used market for all types of applications, we have focused to develop an application using android. Thus concluding from the previously developed applications, we can say that, these applications did not provide the user to remotely monitor his computer. Keeping this in mind we decided to develop 'Monitoring PCs using Android'. Using our application, the user just needs to register all the computers which he need to keep an eye on. When some of the applications which are kept in the black list are opened then the computers will send a notification to the android user and the user can thus terminate this restricted application. This application contributes for IT Administrators to remotely control any computer present in the network, allowing them to remotely troubleshoot and solve problems faster. It can help the colleges to monitor the labs, to restrict the use of forbidden sites or applications. The application also helps one to monitor his own PC when he/she is away the work station.

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