Scientific Journal Impact Factor (SJIF) : 1.711
International Journal of Modern Trends in Engineering and Research
ISSN (ONLINE) : 2349 - 9745
ISSN (PRINT) : 2393 - 8161

Controlling and Monitoring Applications of WLAN using Android phone

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Abstract— Now a days, computers are grouped together to form a network. To manage and control the activities of the network while in office is an easy task. However, while you are outstation away from office, how do you go about with monitoring and controlling of network? Instead of depending on third party information, you can always have your Cell Phone, email accounts serve the purpose. The interaction between the clients and the remote administrator is achieved via a central monitoring server.

The main objective of this paper is to provide maximum details about the network to the administrator on their smart phones, when administrator is away from office or goes out station. In this paper we have proposed Silent Unattended Installation Package Manager that automates the process of silent unattended installation of software. An Installation that is performed without user interaction and does not display any message or GUI during its progress is known as Silent and Unattended Installation. Silent Unattended Installation Package Manager not only introduces new Methodology but generalizes the process of silent and unattended installation of the software. The process is fully autonomous and does not require any user interaction for installation of the software.

Keywords: Smartphone, Monitoring, SUIPM, WLAN, Wireless Media.

I. INTRODUCTION

At our workplaces many computers are connected together and form a network. Normally this network is monitored through a central monitoring server. This is similar to the client-server architecture. In this application the central server is further connected to an android phone. The machines connected in the network are clients and the android phone becomes our administrator as the monitoring is going to be done through this android phone only. The whole system is WIFI enabled. Mobile phone needs to have its WIFI and internet enabled and perfectly working to be able to establish connection with the central server. There are various features given in the application developed. This project is loaded in the android phone and whenever the administrator wants to carry out any monitoring activity he needs to open the application in phone and use the features as per need. So whenever administrator wants to know what is happening at the workplace and wants to know the activities being carried on the machines, this application is ready to help him.

Android based Remote Control is a simple, yet effective, android app that allows users to remotely connect to their Windows based computer. You can establish an instant and secure remote connection between various devices over the internet to control and access your computer via your Android powered device on the go. Our Product tracks individual computer's each and every application, which is running at a given point and displays on the server side. The server side controller has complete control of all the processes and can kill them sitting at his place in case any user is misusing his/her computer. If the Admin is not with in the vicinity of the network he can still have the control of the Network through his mobile. At any time at any place he can monitor and

control the network through mobile phone. This article presents a review of the work done in WLAN controlling and monitoring using android mobile approach by various researchers.

II. LITERATURE REVIEW

The literature review section discusses the work done by researches on WLAN monitoring and controlling using android**.**

The first point gives the information about all the methodologies of accessing network information and their limitations. The limitations of other network information accessing modules prior to WLAN is resolved in [1]. The network information sharing modules can be introduced in system by using number of techniques such Bluetooth, Zigbee and DSRC (dedicated short range communications) Wi-Fi, GPRS, GSM, 3GWIMAX etc. these systems can be classified into short distance and long distances In short distance communication technologies, Wi-Fi has a high communication speed and suitable communication distance. Bluetooth, Zigbee and DSRC (dedicated short range communications) have low communication speed or very short communication distance.
In long distance communication technologies. GSM (global system of mobile Communication), GPRS (general packet radio service) and digital broadcasting station have a low communication speed 3G and WIMAX (worldwide interoperability for microwave access) have high communication speed. GSM, GPRS, 3G, WIMAX are commercial communication service, have high Use fee. Digital broadcasting station need set up dedicated communication line. So in this paper we use Wi-Fi as the wireless communication network communication systems. Wi-Fi is a popular name for the wireless Ethernet 802.11b standard for WLAN. The Wi-Fi is a well developed technology which can be used for remote monitoring and Control. The generation of WLAN support up to 54Mbps data rates within 100m of the base station.

At present, general wireless remote monitoring and control system has two ways to realize. One method is using mobile device (generally are mobile phones) which support connecting to IP (internet protocol) networks via mobile communication networks. Users can use this achieving a remote monitoring and control system, but the wireless data packet system is too expensive. Another method is using SMS (Short Message Service).

The main objective of this system implementation is to provide network information to the administrator while he or she is out of station. In the earlier era LAN networks were used by the researches to share information amongst the network or clients .due to wired networks the monitoring and controlling becomes a prime concern according to the application. There are a lot of advantages of using WLAN prior to LAN are discussed in [2] Wireless is a good option for monitoring and control. Wireless communications offer many advantages as reduced costs, mobility, scalability and ease of maintenance. Several wireless solutions such as zigbee, Bluetooth or Wi-Fi can be found on the market. The EEE 802.11 standard for WLAN, Wi-Fi, is a very flexible technology, easy to implement, cheap and provides a wide bandwidth. For these reasons, it has been implemented in large-scale systems.

The controlling and monitoring using LAN with android is discussed in [3] There can be number of protocols are used to monitor and control the network using android phone; it can be android protocols and network management protocols or combination of them. Simple Network Management Protocol (SNMP) is an "Internet-standard protocol for managing devices on IP networks." Devices that typically support SNMP include routers, switches, servers, workstations, printers, modem racks, and more." It is used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention. SNMP operates in the Application Layer of the Internet Protocol Suite (Layer 7 of the OSI model).

The SNMP agent receives requests on UDP port161. The manager may send requests from any available source port to port 161 in the agent response will be sent back to the source port on the manager. The manager receives notifications (traps and inform requests) on port 162. The agent may generate notifications from any available port. When used with transport layer security or datagram transport layer security requests are received on port 10161 and traps are sent to port 10162. Android provides an API that supports the session initiation protocol (sip). This lets us add sip-based internet telephony features to your applications. android includes a full sip protocol stack and integrated call management services that let applications easily set up outgoing and incoming voice calls, without having to manage sessions, transport-level communication, or audio record or playback directly.
The monitoring and controlling operations can also be implemented with the help of GSM the GSM based monitoring is discussed in point [4] GSM LAN monitoring and controlling using mobile phone is a tool which is used to monitor and control a LAN through a mobile device by the administrator.
This tool is installed on the node which consists of two independent parts. First part of this tool is the server application whose purpose is to work as major process on the machine and offer the services to administrator for monitoring the LAN. The second part of this tool is the client application which serves as background process on the machine and controls all the activities of the client and gives feedback to the server.

The android application can control through registered mobile phone. Using the registered mobile phone the administrator can perform following actions –
1. Shutdown.
2. Notepad
3. Paint
4. Restart
5. Lock process

The client application provides us the list of processes running on the machine and sends feedback to the server application for monitoring purpose.

There has been a lot of technical research in monitoring of wireless networks. The changes in the market of information technology with the gradual enlargement of IT firms have made it even more competitive to develop solid user friendly Software for network monitoring. These systems are defined for jobs presented in [5] Network monitoring in schools/colleges. In the college and school laboratories the monitoring is done through a central server. The machines are connected either wireless or wired way with the server. The administrator sits at the server and controls the activities.
The LAN monitoring application is proposed in monitor his LAN by his cell phone. [3] *"A survey on Network Monitoring and Administration using email and android phone", IJETAE, 2013.provides* maximum details about the network to the administrator on their email accounts and android phones, when administrator is away from office or goes out station.

Old methods of securing guest wireless networks are no longer sufficient is proposed in [7] wireless guest networks were given their own service set identifiers (SSID) and mapped onto an isolated Ethernet VLAN. HTTP requests from newly connected clients were sometimes redirected to a captive portal, where guests had to accept "terms of service". Further searches included under the VNC architecture based remote desktop access through android mobile phone information is enriched in [8] 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. Alternative networks used instead of LAN are established in [9] Wi-Fi technology is an alternative to wired technology, which is commonly used for connecting devices in wireless mode. Wi-Fi is a generic term that refers to communication standards for Wireless Local Area Networks.

Employee Monitoring System Using Android Smart Phone application is given in [10] in this system we are providing dynamic database utility which retrieves data or information from centralized database. The android application in smart phone contains all information about the employee phone uses like their all Employee SMS history, Employee call Logs, Employee Locations, Data uses, Web browser history, and unauthorized data uses details. All communication between the Employee phone and the admin is done through 3G network technology.

Prior to the employee monitoring systems the android smart phone application can also be utilized for home automation proposed in [11]GRPS-Based Distributed Home-Monitoring Using Internet-Based Geographical Information System provides Geographical Information Systems (GIS) and the accessibility of low-cost integrated General Packet Radio Service (GPRS) /Global Positioning Systems (GPS) modem has enabled the evolution of embedded stand-alone home monitoring systems. Local range monitoring systems have been extended to a wider remote range using GSM/GPRS networks and wireless TCP/IP based communications.

Further the Google technologies were introduced proposed in [12] Android is currently primarily developed by Google. Android allows background processing, provides a rich user interface library, supports 2-D and 3-D graphics using the OpenGL libraries, access to the file system and provides an embedded SQLite database. This networking application can also be controlled by *PRTG droid technology proposed in* [13] PRTG droid is a free Android app that connects your smart phone or tablet to your PRTG installation**.** With this app you can keep an eye on your network while on the go. All you need is an Android phone or tablet. The app supports checking multiple accounts in the background, and can alert you whenever new alarms occur in any account. Monitoring data and alarm details are displayed with PRTG's built-in 'Mini HTML' interface which is optimized for small displays and Low bandwidth.

III. CONCLUSION

The system will provided a low cost, secure, accessible, remotely monitored and controlled solution for LAN monitoring using wireless media is been introduced. The use of a mobile, wireless media, Server provides exciting possibilities. However as far as the industrial applications are concerned this can be viewed as a low cost, customized wireless LAN monitoring system.

Thus this solution can be customized to suit any other industrial requirement related to monitoring and controlling LAN network. The target to control LAN network remotely using the wireless media for satisfying user needs and requirements. Wireless technology capable solution has proved to be controlled remotely, provide security and is cost-effective as compared to the previously existing systems. Hence we can conclude that the required goals and objectives of the system have been achieved, by working system.

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