Voice Based Remote Administration

Reema[1], Vikas Kumar[2], Shabnam Kumari[3]
[1, 2, 3] Department of CSE
[1, 2, 3] Sat Kabir Institute of Technology & Management, Bahadurgarh, Haryana, India

Abstract- *A remote administration tool (RAT) is a piece of software or programming that allows a remote "operator" to control a system as if they have physical access to that system. While desktop sharing and remote administration have many legal uses, "RAT" software is usually associated with criminal or malicious activity. Malicious RAT software is typically installed without the victim's knowledge, often as payload of a Trojan horse, and will try to hide its operation from the victim and from security software. Remote Network Administration is a service propounding a complete utilitarian network, which provides its authorized users with the ability to monitor and manage the connected clients.*

Keywords- RAT, VBRA, COMA

I. INTRODUCTION

Remote Network Administration is a service propounding a complete utilitarian network, which provides its authorized users with the ability to monitor and manage the connected clients [3]. This software will benefit the administrator in lab to manage the clients. It allows network administrators to manage their networks while being physically separated from the network equipment. It provides the capability to manage wired and wireless networks securely from remote locations.

Now days it has become necessary to computerize every functions of day-to-day life. This can be done by facilitating through any one computer to another one on the network. This avoids the loss of time and memory. Every organization will have mutually connected computers [7].

II. PROBLEM DEFINITION

Because of the fast paced & fast growing world it is not possible for an administrator to be physically available on every machine. Therefore it is the need of the hour to device a method in which the administrator is able to give commands to a remote machine without being physically present on the machine. In our application we make an effort to provide a solution to this problem [12]. In today's world of networking, network administrators have to manage a large no of terminals efficiently so as to exert necessary control over the usage of these systems. Here we are trying to make the administrator's

job easier by enabling him to administer a remote machine, which will be connected over a LAN to his machine, to be able to give voice commands over a microphone connected to the his computer. These voice commands will be converted to text string by Java API cloud garden on the remote PC. These commands will be then executed on it.

III. LITERATURE REVIEW

[1] Anis Ismail, Mohammad Hajjar, Haissam Hajjar, REMOTE ADMINISTRATION TOOLS: A COMPARATIVE STUDY, Journal of Theoretical and Applied Information Technology© 2005 - 2008 JATIT, www.jatit.org

Remote control software provides businesses the ability to login and access computers remotely. Utilizing remote control software enables personnel to transfer files or folders quickly and easily, and communicate by instant message, text chat, or voice intercom from any PC, cell phone, wireless PDA. This fast, reliable, easy-to-use pc remote control software saves you hours of running up and down stairs between computers. Many remote administrator tools exist in the market and it is difficult to choose what you need

As you are an IT support, you need to choose the software which leads your IT skills. After you determine how much you want to manage remotely, the next step is to select the tools and supporting components you need to accomplish your remote management tasks. There had been existing comparison charts of much remote administrator software that had been done over the Internet. We will mention the important comparison between GoToMyPC and PCAnywhere, and, RemotelyAnywhere and PCAnywhere.

In this research paper, an evaluation is being built on existing remote administrator tools of the availability of features and is expected to be one of the important evaluations used by major high-energy research. This evaluation let customers choose their need of remote administrator tools carefully.

[2] S. Muknahallipatna J. J. Kane J. Hamann, Distributed Remote LAN Administration Tool for Windows NT & 2000-based LANs: Preliminary Work, Dept. of Electrical

&Computer Engineering, University of Wyoming, 0-7695-1321-2/01 0 2001 IEEE

In this research paper a preliminary stage computers were listed belonging to different domains at any workstation in any domain. On selecting a particular computer or computers we are able to modify, add and delete the user accounts on the domain controllers. Since, the DCOM does not allow the client process to make any network function calls that travels across the boundary of the server process (limitation), we are only able to shutdown computers on which the server process is located. This is because the DCOM process that is activated on the server call is initiated by the system account. This account is restricted to local fhction calls only. In order to overcome this limitation, the server process initiating the shutdown process will be implemented using the Common Request Brokerage Architecture (COMA).

[3] A. Leonardi, S.Palazzo, F. Scoto, S. Signorello , Enabling Remote Access to a Wireless Sensor Network by Exploiting IPv6 Capabilities DIIT - Dipartimento diIngegneria Informatica e delle Telecomunicazioni University of Catania, ItalyV.le A. Doria, 6 - 95125 Catania 978-1-4577-9538-2/11/$26.00 ©2011 IEEE

One of the most important applications of wireless sensor networks (WSNs) undoubtedly is the emergency management. In particular, sensor nodes can be helpful for both preventing and recovering emergency situations. During critical emergency situations, having a WSN easy to access and manage is a mandatory requirement. So far, sensor networks have been based on custom protocols that make difficult to access and configure sensors by users that are different from the original designers. Today, with the advent of IPv6, integration between a sensor network and Internet becomes feasible. In this paper, researchers discuss the IPv6 capabilities that can be effectively exploited jointly with 6LoWPAN, and we illustrate a test bed based on an implementation of IPv6 over IEEE 802.15.4. They demonstrate that, by using an open source module we have purposely developed to run over 6LoWPAN, a user equipped with some few common network utilities can remotely access the WSN and change run-time the state and configuration of every single sensor node.

Today, Wireless Sensor Networks (WSNs) are changing the way to achieve physical monitoring of everyday objects and environments. Among the several applications, the emergency management and disaster recovery is one of the most appropriate due to the fact that sensor networks can be a valid help for both preventing and mitigating, and then for achieving recovery in a post-disaster. In the early ages of their life, sensor networks were considered just as stand-alone systems, because most of the times they had no need to communicate with other networks. Today, various emergency management applications demonstrate the importance of global access to the wireless sensor networks and the need for cooperation with other emergency infrastructures

[4] Plamen J. Prodanov1, Andrzej Drygajlo2, Guy Ramel1, Mathieu Meisser1, Roland Siegwart1 , "Voice Enabled Interface for Interactive Tour-Guide Robots".

This paper considers design methodologies in order to develop voice-enabled interfaces for tour-guide robots to be deployed at the Robotics Exposition of the Swiss National Exhibition (Expo.02). Human-robot voice communication presents new challenges for design of fully autonomous mobile robots, in that interactivity must be robot-initiated in conversation and within a dynamic adverse environment. They approached these general problems for a voice enabled interface, tailored to limited computational resources of one on-board processor, when integrating smart speech signal acquisition, automatic speech recognition and synthesis, as well as dialogue system into the multi-modal, multisensory interface for the expo tour-guide robot. They also focus on particular issues that need to be addressed in voice-based interaction when planning specific tasks and research experiments for Expo.02 where tour-guide robots will interact with hundred of thousands of visitors during six months, seven days a week, ten hours per day.

IV. PURPOSE

Because of the fast paced & fast growing world it is not possible for an administrator to be physically available on every machine. Therefore it is the need of the hour to device a method in which the administrator is able to give commands to a remote machine without being physically present on the machine. In our work we make an effort to provide a solution to this problem.

Voice Enabled Remote Administration (VBRA) tool enables an administrator to be able to give voice commands over a microphone from his computer to a remote computer connected over a LAN network [8]. Next, these voice commands are converted to text commands. To invoke the command module on the remote computer we use the converted text commands. The command module is responsible for executing the commands on remote machine. This tool develops software that would enable an administrator to administer a remote machine connected over the LAN, from his machine by giving voice commands.

V.   RESULTS

Following are the various operations performed by the application and the results obtained for each operation:
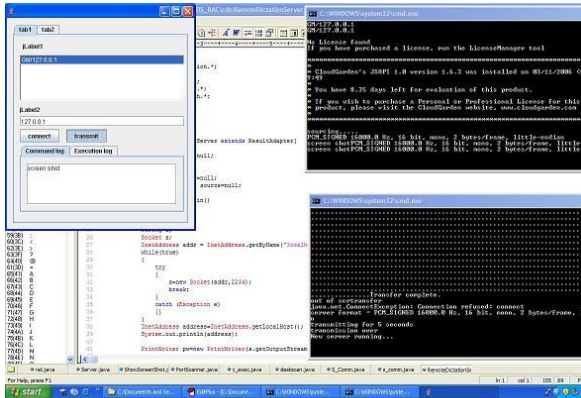
1.   Connection Establishment

Figure 1. Connection Establishment

*   The software is installed on remote machine as well as on administrators.
*   Now the first task, which our software performs, is that it searches for active computers connected to the Administrator Machine.
*   All the active machines' IP addresses are shown in the GUI.
*   The Administrator then chooses the remote machine's IP address where it wants to establish a connection and presses the connect button
*   Now as the connection has been established between the chosen machine and the remote, the remote presses the transmit button to sends voice commands and perform operations.
*   The result of the operations can be seen on the remote machine.
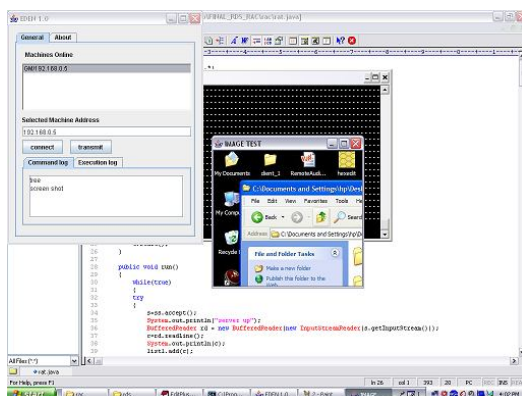
2.   Screenshot

Figure 2. Screenshot

*   Once the connection has been established then the remote machine transmits voice commands.
*   In this case the keyword said is SCREENSHOT.
*   On saying this keyword the remote computer recognizes this keyword and the respective operation are performed.
*   As a result a screenshot of the current screen of the remote machine is sent back to the remote machine.
*   An applet viewer opens automatically and shows the captured desktop of the remote machine.
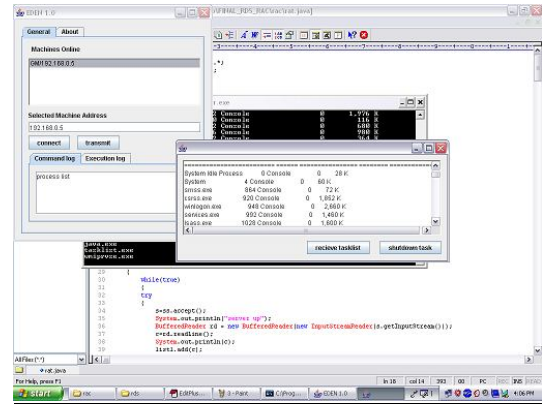
3.   KILL TASK

Figure 3. Snapshot for kill task

*   Once the connection has been established then the remote machine transmits voice commands.
*   In this case the keyword said is PROCESS LIST.
*   On saying this keyword the remote computer recognizes this keyword and the respective operation is performed.
*   As a result a list of all the processes running on the remote machine is displayed on the remote machine.
*   Now we can choose any process and kill it.
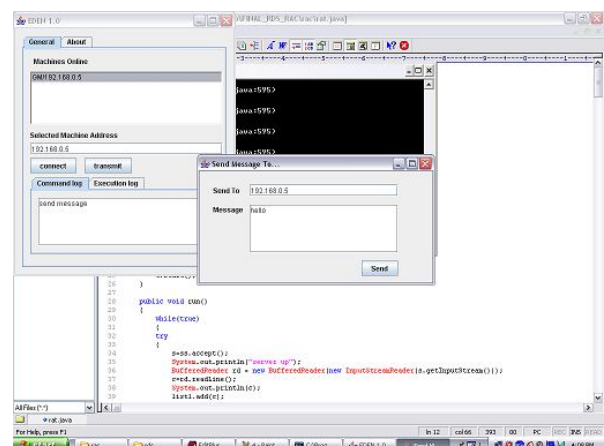
4.   SEND MESSAGE

Figure 4. Snapshot for sending a message

- As the connection has been established then the remote machine transmits voice commands.
- In this case the keyword said is SEND MESSAGE
- On saying this keyword the remote computer recognizes this keyword and the respective operation are performed.
- As a result a message window appears on the remote machine.
- We write a message in this screen and send it to the selected machine.
- The sent message can be seen on the remote machine.

VI. APPLICATIONS

This tool is primarily designed to provide a simple yet efficient tool in the hands of administrator, wherever administrator has to manage a large number of users over a LAN. Since whole world is getting networked the need for such software is long felt which helps monitoring an intranet. Various areas where this tool can be incorporated are:

1. In large organizations, there is large number of computers connected over the LAN and it becomes essential to monitor and control the working of these computers.
2. In universities, where each student is given his/her own computer and they are all connected to the LAN. Thus to ensure legitimate use of computers by students and to exercise proper control on them, it can be helpful.
3. In BPO's, large number of employees use LAN and Internet. So to ensure that only legitimate work is done by the employees during office hours, we can use it.
4. In Cyber cafes, to monitor the usage of machines, thus ensuring legal usage.

VII. CONCLUSION AND FUTURE SCOPE

Using Remote Administrator Tool, administrators can access the servers from anywhere, be it inside the computer room or from halfway around the world over a WAN, VPN, or dial-up connection. In this paper we proposed an overall remote management and control system by making use of voice for computer network administration. With more effort, time and greater expertise it can further be channelized into the mainstream.

Here we are enlisting a number of points, which hold the future developments in this and allied products as well:
1. One of the elaborate uses of our product is that it can be integrated with the Standard remote Operating System as an inbuilt feature. Doing this will reduce the administration management time.

2. Coverage & expansion to multiple computer administration by a single administrator on the Internet.
3. Coverage of different platforms eg. Microsoft Vista, Mac OS, Linux etc.
4. Increasing the number of functions that can be performed on the remote machine.
5. Secure Data transmission using Java's Cryptographic architecture so as to exterminate any chances of data packet sniffing and spoofing.

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