

Lab Tracer- The Remote Desktop Technology

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www.ijcaonline.org

Received: 25 Sep 2014

Revised: 10 Oct 2014

Accepted: 24 Oct 2014

Published: 31 Oct 2014

Abstract— Lab Tracer is a remote desktop technology that serves as the future of computer applications. The main objective is to develop an application that can control a computer remotely. Remote desktop technology makes it possible to view another computer's desktop on our computer. The person sitting on the server can view and control the client's computer. With fast, reliable, easy-to-use pc from remote control software, it helps us to save hours of running up and down the stairs between computers. The basic idea behind this work is to capture the screenshot of the client and send to the server. In response, mouse events and key events are captured from the server and exchanged those events between the Server and the Client via network.

Keywords— Lab tracer, Remote desktop technology, Remote desktop administration, Remote server, Remote client, Remote access, Remote Method Invocation.

I. INTRODUCTION

Today computers have become a major part of everyone's life. Use of computers is not only restricted for corporate use but also for personal use and inter communication purpose [1]. For all these different purposes networking has become the magical word [1]. Remote administration refers to any method of controlling a computer from a remote location. A remote location may refer to a computer in the next room or one on the other side of the world. Remote desktop technology makes it possible to view another computer's desktop on your computer. We can open folders, move files and even run programs on the remote computer, right from your own desktop.

Remote control software provides businesses the ability to login and access computers remotely [5]. 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 [5].

The core components of remote desktop technology include a remote server and remote client. Remote server is the server part which waits for the client's connections. Each connected client, a new frame appears showing the current client screen. The core function of remote client is sending a screen shot of the client's desktop every predefined amount of time. The server keeps listening to any incoming connection for the client to connect.

The client module is then run on the computer which acts as client. The client is then started and captures the screen-shot and sends to the server over TCP through

network. The server then gets the client screen-shot, captures the keyboard and mouse event and sends them back to the client over TCP through network for the same event to take place on the client side. All the handling of mouse and keyboard event on the client side is done by "Robot Class". The server and client the process of viewing and controlling the remote desktop is termed as "Remote Access". Remote Desktop Administration includes view remote desktop, mouse movement control, keyboard control, mouse button control, file operations, restart and shutdown.

In this application the lab administrator can monitor and also control functioning of remote machine irrespective of the operating system with that running. Lab tracer have two specific module one as Administrator Utilities and a Connection utilities. Java language is used as the front end here. Java is an object oriented language which is neural in architecture and portable. Lab tracer can be implemented in any system supporting any operating system. The purpose of the operating system is to simplify device programming through resource abstraction. It can be called as operating system independent.

Lab tracer is close platform open source software. Net bean applications for the network using JAVA S 6.7 is the tool used. Here it refers to both a platform for the development of applications for the network using java.

A. Remote Method Invocation and Java:

Lab Tracer uses RMI, Remote Method Invocation with SSL/TLS to establish a secured connection between the viewer (client) and the server. Details of communication

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between remote objects are handled by RMI. The Java Remote Method Invocation API, or Java RMI, is a Java application programming interface that performs the object-oriented equivalent of remote procedure calls, RPC. RMI applications often comprise two separate programs, a server and a client. A typical server program creates some remote objects, makes references to these objects accessible, and waits for clients to invoke methods on these objects.

A typical client program obtains a remote reference to one or more remote objects on a server and then invokes methods on them. It provides the mechanism by which the server and the client communicate and pass information back and forth. Such an application is sometimes referred as a distributed object application. An application can register its remote objects with RMI's simple naming facility, the RMI registry. RMI treats a remote object differently from a non-remote object when the object is passed from one Java virtual machine to another Java virtual machine.

II. EXISTING SYSTEM

The current existing systems are potentially good systems, which do not allow us to remotely connect to the remote machines and access their respective desktops. But most of the existing systems are quite difficult to use and implement by a common man. In the present generation systems, there is a need for the administrator has to go all around the network in order to terminate any system that is left non-terminated. In order to get the system configuration details of any particular system, the administrator has to take the trouble of going to that system for obtaining the information. There are several disadvantages for the existing systems. It includes:

- (a) Remote Desktop Protocol (RDP) is a multi-channel protocol that allows a user to connect to a computer running Microsoft Terminal Services [1].
- (b) The user working on the remote machine is aware with the fact that someone else is remotely viewing his/her desktop.
- (c) When a user access the desktop of the remote machine, then the display terminal of that remote machine is disabled. It prohibits the original user of the remote machine to carry out his/her tasks which is a major limitation.
- (d) The captured desktop image has poor quality.

III. PROPOSED SYSTEM

The labtracer will allow the system administrator to use through a simple application. This will intends to solve the problems of existing technologies and to utilize

them in a better way. Our proposed system will remove all the limitations of existing systems. Using Remote Desktop Technology, the administrator can control the operations of the remote system from his system itself. The administrator can get the configuration of the remote system from the server system itself.

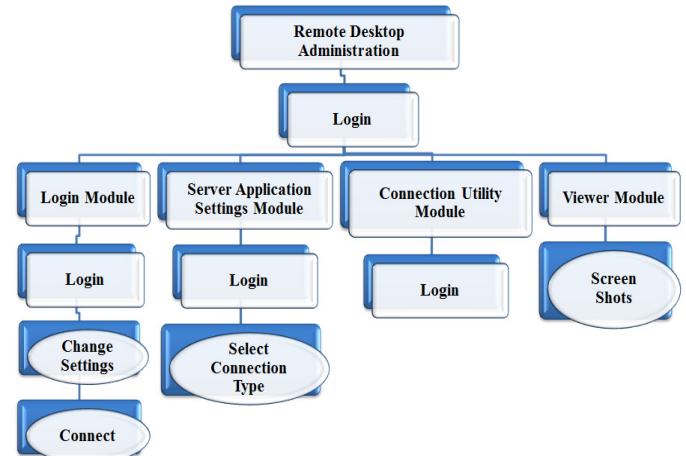


Fig 1: Block diagram of proposed system

MODULES OF LAB TRACER

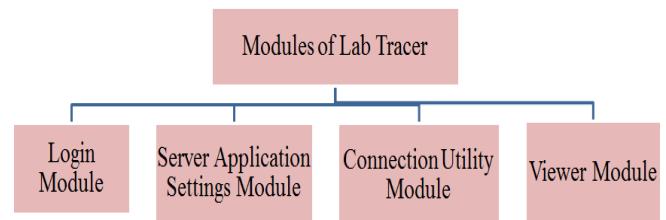


Fig 2: Modules in labtracer

A. Login Module

The Lab Tracer is initiated by using a password and a username. The user has to type the specified username and the password for accessing the remote systems.



Fig 3: Login form

B. Server Application settings Module

This module includes configuration and settings for the connection. This Configurations of Connection include Authentication settings, Connection Mode settings, IP Address, Port Address etc. RMI, Remote Method Invocation is a way that a programmer, using the Java programming language and development environment. In this module the Administrator forms are created. It gives the notion about the connection details of the administrator system, active connection of the server system.

The setting provides with display option for the server system and the client system to provide secured connection and transferring of files. The server can hide the main window from the client systems. The settings of the client system can be changed by the server by using the system tray icon. The proxy menu is used for specifying the port and server IP address by which the connection is made. The file transfer is also done in Lab Tracer. The specified location is provided by down load location.



Fig 4: Server application settings form

C. Connection Utility Module

Lab Tracer provides secured configuration for the connection established among the remote systems. The connection between the client and server can be done in three ways such as manual, automatic, default connection. The desired connection can be selected from the form. The specified port address and the HTTP address are specified and then the connections are preceded.

The project extends authentication mechanism by providing the user name and the password. The reverse and the secured connections are established. The connection between the client and the server system are provided in this module. The properties of the system being connected can be viewed in the Text area. The client can disconnect the server connection and vice versa. The refreshing facility is also provided.

D. Viewer module

This is one of the biggest module. It consists of the actions that are performed in the lab tracer such as the screen capturing, file utility, clipboard, image viewing, and password functions .It helps in the viewing of the remote machines. It contains much feature like multiple viewing of the client screen. We can adjust the screen resolution so that the administrator can decrease the size of the screen and can view more number of client screenshots.

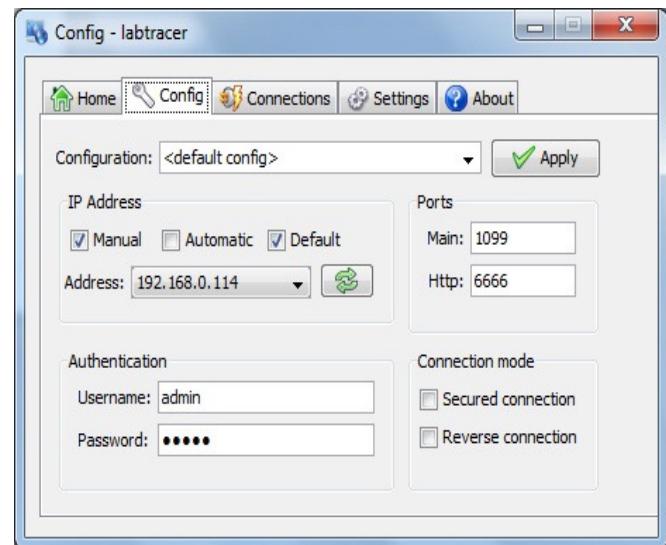


Fig 5: Configuration Form

IV. HARDWARE AND SOFTWARE REQUIREMENTS

Table 1: Hardware and software requirements

Processor	Pentium 4
Operating System	Windows XP/7/8 or LINUX
Programming Language	JAVA
Platform	NetBeans/ Eclipse

V. SCOPE

Anything cannot be ended in a single step. It is the fact that nothing is permanent in this world. So this utility also has some future enhancements in the evergreen and booming IT industry. Change is inevitable. Almost every project is subjected to change depending on the client's requirements. Since Remote Desktop Administration is subjected to change, there is always a scope for further enhancement.

Labtracer holds good future scope. There will not be any client interaction to execute the client side program. The administration work will be minimized. The system and the architecture of the proposed system is a compatible one, so addition of new modules can be done without much difficulty. Since this module has its unique properties it can extend further to make this system a complete one.

VI. CONCLUSION AND FUTURE WORK

In the present generation systems, there is a need for the administrator has to go around the network in order to terminate any system that is left non-terminated. The administrator has to take all the trouble of going to a particular system to access a file that is needed by him. In order to get the system configuration details of any particular system, the administrator has to take the trouble of going to that system for obtaining the information. The processes that are running in a particular system can be viewed only in that system itself by using the present generation software's. So, by using this technology, we can avoid all problems.

Our labtracer addresses conflicts and non-interface problems in an efficient manner in terms of computer resources. Our experimentations show that a secured and scalable remote desktop infrastructure can be deployed as an alternative to the current classical desktop models. Our model will reduce the physical strain of the administrator.

Labtracer is easy to use and understand, and the code of the system is simple and easy to understand. The system also provides maximum flexibility. Efforts to be put on future includes install software remotely, provide more security, and to control the computers even when the power is off.

ACKNOWLEDGMENT

We express our gratitude and thank to our Head of our Department Ms. Divya M Menon who have helped us a lot in the successful completion of initial phase of our project. We extend our gratitude and sincere thanks to our project coordinator Ms. Sabna AB who has always given her valuable time for us and also for her moral support. We remember the invaluable support offered by Mr Bineesh M, our project guide and for his good suggestions and constant encouragement.

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