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Research paper

Internet based remote desktop using INDY and socket component

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Abstract

Remote Desktop is now a very necessary thing for many companies who want to control or know all the activities happen-ing on the client computer both office employees, as well as computer clients that are very far away as local server (client) that exist in large companies, to control the computer distance can be done by making an application by using Delphi pro-gramming language by using component of INDY and Socket Component, based on testing done by remote process can be done well and remote speed depends on internet network connectivity.

Keywords: *Remote Desktop; Control; Server; Client.*

1. Introduction

Hardware that serves to serve the network and workstations (clients) can connect to a network[1], [2]. In general, resources such as printers, scanner and so on that are shared by users on the workstation are located and working on servers based on the type of service known disk server, file server, print server and a server can also have some service functions[3]–[5]. Server usually using to develop management the information system [6], [7].

Client is a computer that receives or uses the facilities provided by the server[8], the client server is a network model that uses one or more computers as a server that provides its resource to other computers (clients) in the network and the server will set the access resource mechanism that may be used, between communications within the network[9]. With the advancement of computer network technology, it is necessary to have a good network management system[10]. Network management can monitor conditions on the network so as to avoid or minimize errors that can occur. Modern network management systems offer TCP/IP support for most of their network traffic. TCP/IP is perfectly developed and offers many utilities that enhance the use, performance and security of accessing and transferring data[11], [12].

In an illustration, business or organization already uses a computer connected in a network, it will be a bit difficult and inconvenient, especially for Administrators and Clients in term of work or even communication, who also want to communicate with other Client. Therefore, it takes a software that is useful to facilitate this, the software designed to run on the Internet network built using INDY and Socket Network so that the communication between server and client better and faster due to the SSL function as an encrypted security function[13]–[18].

2. Methodology

Computer network is a collection of computers, printers and other equipment connected in one unit. Information and data move through cables or wirelessly allowing computer network users to exchange documents and data, print on the same printer and together using hardware/software connected to the network. Any computer, printer or peripheral connected to a network is called a node. A computer network can have two, tens, thousands or even millions of nodes[19], [20].

Communication between server and client is done on network with internet connection, to connect server and client designed application by using Delphi 7 [21], [22] using INDY and Socket

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network, besides also on applying Socket Parser technique and search algorithm[23]–[29] to know condition of client in active state or not.
Socket Parsing is a process of sharing data in a network commonly used on a socket. This entity is responsible for listening to data on the socket set. Sockets and functions parse them accordingly, registered with the socket parser at runtime. The parser socket uses a system call to detect when data is available on each socket in the socket set.

3. Results and discussion

The client IP number is adjusted to the number of clients and most importantly is the default gateway must be the same as the IP Server number, remote process can be done if the IP number is appropriate, for remote process that can be done is as follows:

3.1. Screen capture

Screen capture is an application that is done to retrieve the results of the desktop on the client computer, the following is the screen capture process analysis is made.

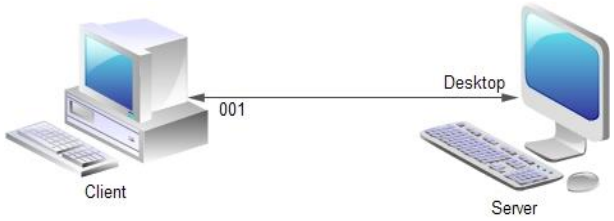


Fig. 1: Screen Capture.

The screen capture process in the remote application is done by sending an input string with '001' and the client will parse the value sent from the server and process the client capture based on that value.

3.2. Keylogger

Keylogger are used to retrieve information from clients that the user performs when typing with the keyboard, including username and password or even account number and PIN, here is the keylogger process analysis made.

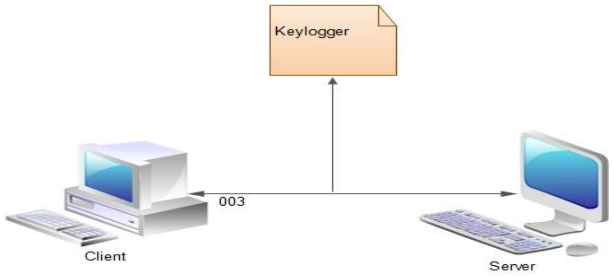


Fig. 2: Keylogger.

The keylogger process in the remote application is done by sending an input string with value '003' and the client will parse the value sent from the server and provide output in the form of all typing information performed on the client.

3.3. Process thread

The client computer that is accessed certainly cannot be separated from the name of the application process running behind the scenes, using the tool thread process can display a list of processes that run on the client computer, here is the process thread analysis is made.

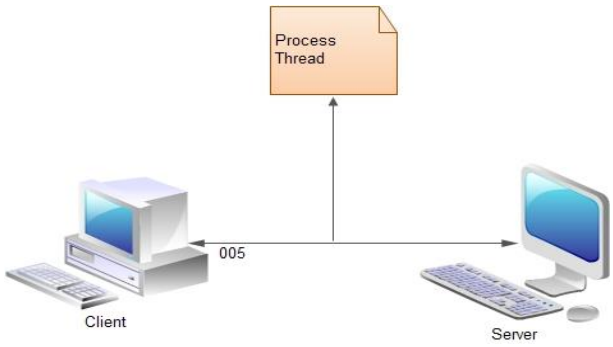


Fig. 3: Process Thread.

The thread process on the remote application is done by sending an input string with the value '005' and the client will parse the value that is sent from the server and provide output in the form of program information that runs on the client computer.

3.4. Registry

Registry is used to display the contents of the existing registry on the client computer, by displaying the contents of the client computer registry can be free to set or modified by the user server computer, here is the design process.

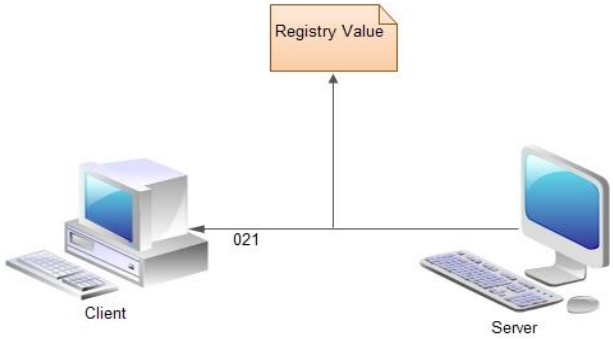


Fig. 4: Process Thread.

Registry on remote application is done by sending an input string with value '021', on client computer will process the input and process the information transmitted.

3.5. Desktop tool

Desktop tool used to control desktop client whether active and non-active so that user cannot do activity on his computer, here is analysis process tool designed.

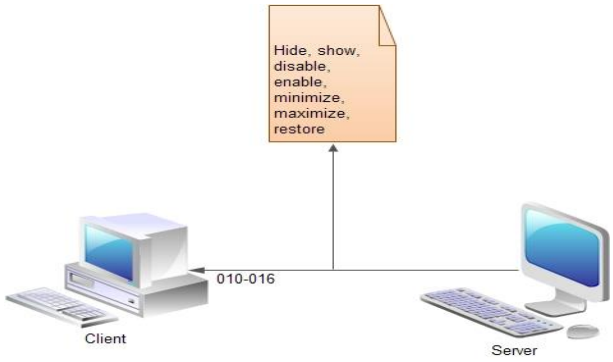


Fig. 5: Tool Desktop.

Here are some test results done on remote desktop process using internet network.

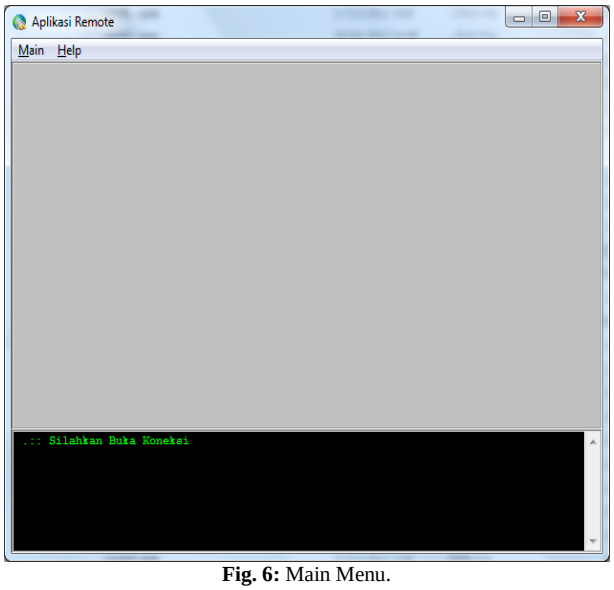


Fig. 6: Main Menu.

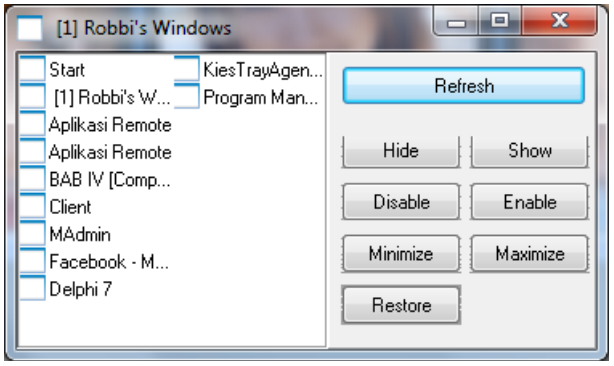


Fig. 7: Desktop.

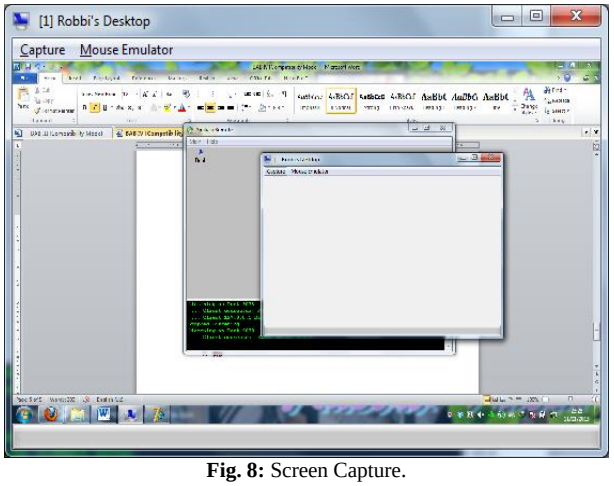


Fig. 8: Screen Capture.



Fig. 9: DOS Emulator.

Figures 6 until 9 are some of the processes performed on the client side by the server.

4. Conclusion

After the discussion and implementation, it can be concluded that other applications can be used for monitoring can also be used for remote clients such as DOS Command, display the process windows, take the screen on the client, enable and disable the desktop and other screens and the use of INDY and Socket Component makes it easy remote control process is done.

References

[1] S. J. Lee, Y. H. Kim, S. S. Kim, and K. S. Ahn, "A Remote Monitoring and Control of Home Appliances on Ubiquitous Smart Homes," *Network*, pp. 1–6, 2008.

[2] E. Otero-muras, "Pose-corrected Face Processing on Video Sequences for Webcam-based Remote Biometric Authentication," *Network*, pp. 1–22, 2007.

[3] C. Gilmore, D. Kormann, and A. D. Rubin, "Secure remote access to an internal Web server," *IEEE Netw.*, vol. 13, no. 6, pp. 31–37, 1999.

[4] M. Dowling, "Enabling remote working: Protecting the network," *Netw. Secur*, vol. 2012, no. 3, pp. 18–20, 2012.

[5] K. Bager, "Remote access: Don't be a victim," *Netw. Secur*, vol. 2012, no. 6, pp. 11–14, 2012.

[6] D. Lazim et al., "Information Management and PSM Evaluation System*," Int. J. Eng. Technol.*, vol. 7, no. 1.6, pp. 17–19, 2018.

[7] F. A. A. Fauzy et al., "Registration System and UTM Games Decision Using the Website Application," *Int. J. Eng. Technol.*, vol. 7, no. 2.2, pp. 45–47, 2018.

[8] R. Rahim, H. Nurdiyanto, A. S. Ahmar, D. Abdullah, D. Hartama, and D. Napitupulu, "Keylogger Application to Monitoring Users Activity with Exact String Matching Algorithm," *J. Phys. Conf. Ser.*, vol. 954, no. 1, 2018.

[9] T. Listyorini and R. Rahim, "A prototype fire detection implemented using the Internet of Things and fuzzy logic," *World Trans. Eng. Technol. Educ.*, vol. 16, no. 1, pp. 42–46, 2018.

[10] S. Network and M. Protocol, "Simple Network Management Protocol," *RFC 1157*, vol. 3, no. 1098, pp. 69–150, 2006.

[11] M. Alizadeh et al., "Data center TCP (DCTCP)," ACM *SIGCOMM Comput. Commun. Rev.*, vol. 40, no. 4, p. 63, 2010.

[12] R. Yadav, "Client / Server Programming with TCP/IP Sockets," *Client / Serv. Program. with TCP/IP Sockets*, p. 24, 2007.

[13] R. Rahim, "Man-in-the-middle-attack prevention using interlock protocol method," *ARPN J. Eng. Appl. Sci.*, vol. 12, no. 22, pp. 6483–6487, 2017.

[14] A. Putera, U. Siahaan, and R. Rahim, "Dynamic Key Matrix of Hill Cipher Using Genetic Algorithm," *Int. J. Secur. Its Appl.*, vol. 10, no. 8, pp. 173–180, Aug. 2016.

[15] R. Rahim, M. Dahria, M. Syahril, and B. Anwar, "Combination of the Blowfish and Lempel-Ziv-Welch algorithms for text compression," *World Trans. Eng. Technol. Educ.*, vol. 15, no. 3, pp. 292–297, 2017.

[16] H. Nurdiyanto, R. Rahim, and N. Wulan, "Symmetric Stream Cipher using Triple Transposition Key Method and Base64 Algorithm for Security Improvement," *J. Phys. Conf. Ser.*, vol. 930, no. 1, p. 012005, Dec. 2017.

[17] H. Nurdiyanto and R. Rahim, "Enhanced pixel value differencing steganography with government standard algorithm," in *2017 3rd International Conference on Science in Information Technology (ICSITech)*, 2017, pp. 366–371.

[18] E. Kartikadarma, T. Listyorini, and R. Rahim, "An Android mobile RC4 simulation for education," *World Trans. Eng. Technol. Educ.*, vol. 16, no. 1, pp. 75–79, 2018.

[19] Dhanamma et al., "Classification of TCP Variants inside Wireless Networks," *Classif. TCP Var. Insid. Wirel. Networks*, vol. 4, no. 4, pp. 340–347, 2014.

[20] K. R. Fall and R. W. Stevens, "TCP: The Transmission Control Protocol (Preliminaries)," in *TCP/IP Illustrated, Volume 1: The Protocols*, 2011.

[21] M. Fairuzabadi, "Implementasi Kriptografi Klasik Menggunakan Borland Delphi," *J. Din. Inform.* vol. 4, no. 2, pp. 65–78, 2010.

[22] B. Delphi, "Sistem Monitoring Kendali Pintu Air Jarak Jauh Berbasis," *Sist. Monit. Kendali Pintu Air Jarak Jauh Berbas*, No. X, Pp. 1–6, 2008.

[23] R. Rahim, I. Zulkarnain, and H. Jaya, "A review: search visualization with Knuth Morris Pratt algorithm," *in IOP Conference Series: Materials Science and Engineering*, 2017, vol. 237, no. 1, p. 012026.
[24] R. Rahim et al., "Searching Process with Raita Algorithm and its Application," *J. Phys. Conf. Ser.*, vol. 1007, no. 1, p. 012004, Apr. 2018.
[25] R. Rahim, S. Nurarif, M. Ramadhan, S. Aisyah, and W. Purba, "Comparison Searching Process of Linear, Binary and Interpolation Algorithm," *J. Phys. Conf. Ser.*, vol. 930, no. 1, p. 012007, Dec. 2017.
[26] R. Rahim, I. Zulkarnain, and H. Jaya, "Double hashing technique in closed hashing search process," *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 237, no. 1, p. 012027, Sep. 2017.
[27] R. Rahim et al., "Block Architecture Problem with Depth First Search Solution and Its Application," *J. Phys. Conf. Ser.*, vol. 954, no. 1, p. 012006, 2018.
[28] R. Rahim, Nurjamiyah, and A. R. Dewi, "Data Collision Prevention with Overflow Hashing Technique in Closed Hash Searching Process," *J. Phys. Conf. Ser.*, vol. 930, no. 1, p. 012012, Dec. 2017.
[29] R. Rahim, A. S. Ahmar, A. P. Ardyanti, and D. Nofriansyah, "Visual Approach of Searching Process using Boyer-Moore Algorithm," *J. Phys. Conf. Ser.*, vol. 930, no. 1, p. 012001, Dec. 2017.