FREE SOLUTIONS FOR VPN AND COMPUTER REMOTE CONTROL

BILINOVAC, D[ijana] & REZIC, S[njezana]

Abstract: The modern business dynamics imposes more demanding and more flexible communication standards. For the purpose of sharing timely and high-quality information as well as more effective communication in and out of a company, an important segment of business improvement is the targeted use of computer and network technologies. There is a growing need to connect to the computers within the company or to use different computer resources.

In the text below, will be presented the tools which, through the Internet, enable an efficient and fast connection, remote control and sharing of resources between the computers, which, besides that, are free. These tools enable the creation of VPN (Virtual Private Network) or simple remote control through the web browser.

Key words: VPN, Virtual Private Network, remote access, remote control, remote desktop

1. INTRODUCTION

Virtual Private Network is a relatively new communication model which enables more flexible and economic communication among the corporate employees or within a complementary business system. "While it is only since late 1997 or early 1998 that the term VPN has gained widespread use and begun to attract significant attention, VPNs have been in use since the mid 1990s" (Fowler, 1999)..

VPN construction is an extremely useful way to connect the remote and mobile users to the corporate network. It enables networking and connecting of a number of locations within one user network, no matter how remote departments, subsidiaries, virtual offices or at-home employees are.

VPN is the technology used for connection of dislocated networks into a virtual private network, functioning through public or shared network infrastructure (mostly the Internet). VPN is a service which leaves the user with the impression that he is connected to a private network; however, the service is accomplished through a public network, such as X.25, ISDN or the Internet. VPN can be created between separate computers and private network (client-to-server) or the computer network on a remote location which is connected to the central office (server-to-server). Security measures to apply can be different, but they definitely include tunneling, encryption, package authorization, user authorization, and access control to the virtual private network.

The purpose of this type of connection is to reduce the expenses of connection between physically remote users of the same network. Traditionally, private networks are created through rented links, X.25, Frame Relay or ATM networks. With the Internet advancement, the creation of private networks using IP protocol becomes more frequent.

As the Internet is an open global network without quality of service assurance, private networks must have protection and assurance for the quality of their service. VPN is a network of secured connections between the remote users created within a public or private network.

Such networks are called private, as the resources of these connections can be used only by corporations which are their owners. They are considered private form the aspect of routing and address plan, i.e. routing algorithms and address plan are completely independent of other networks. The network is virtual, as the connections are formed through one part of the installed resources of public network for data transmission.

Remote control / remote desktop / are software applications make thinks a lot easier for both: the users and for the Administrators. It's not only a great way to supply technical support to users, but it's also a fabulous way to share data and collaborate with others remotely quickly and easily.

"Remote control is software-based solution for remotely accessing another computer. In a typical scenario, there are two types of computers-the remote system and the host system. The remote system can be a branch office PC, a PC located at home, or a portable computer whose location varies on a daily bases. The host system can be any computer that a remote user wishes to access, including LAN-attached workstations and standalone PCs equipped with a modem. Both the remote and host computers must be equipped with the same remote control software and the user must be authorized to access a particular host" (Muller, 2002).

The term remote control tools refers to the tools which enable connection with another computer and complete control over its desktop, i.e. work on the remote computer as if you are physically in front of it. "All data from the LAN (Local Area Network) is not transferred to the remote user's PC. The remote user does not get the data files from the LAN PC, but just sees the results of the processing on the screen of his or her computer" (Cowley, 2007).

The Internet offers plenty of free tools for VPN and remote control installation. Most of these tools are free for non-commercial use. Among the most popular services for VPN and remote control installations are: LogMeIn Hamachi[2] and TeamViewer 5.

2. LOGMEIN HAMACHI[2]

Hamachi is a program for installation of private local network (VPN). It simulates the local network to which other users can connect without difficulties. Free version can be downloaded from the link http://hamachi.en.softonic.com/ and allows up to 16 users per one network, whereas a commercial version allows the creation of network of up to 256 members. The same company offers LogMeIn tools for remote control which functions on the principle of tunnelling control protocol through HTTPS and standard port 443 and it is available to almost all networks which enable web access. Easily access remote PC's by installing client software onto each machine. Installation of LogMeIn is very simple. LogMeIn is installed on the computer to which we want to connect. On the web-site www.logmein.com a free user account is created, during the installation the computer sets up a server component and client units which work within the browser as Java applications or ActiveX plug-in. After LogMeIn is installed on the computer

which we would like to remote control, it is enough to sign in on LogMeIn web pages, and choose from the list of available computers the one we want to control. Web browser opens the desktop of the selected remote computer which we completely control from the remote location. The free version allows you to view your screen, open files, and do pretty much anything you ordinarily do when you're sitting in front of your computer. A paid version allows you to transfer files, hear audio, and print remotely. I've used LogMeIn Free for almost a year now, and I've never had a problem connecting to a remote computer through routers or firewalls or other internet obstacles.
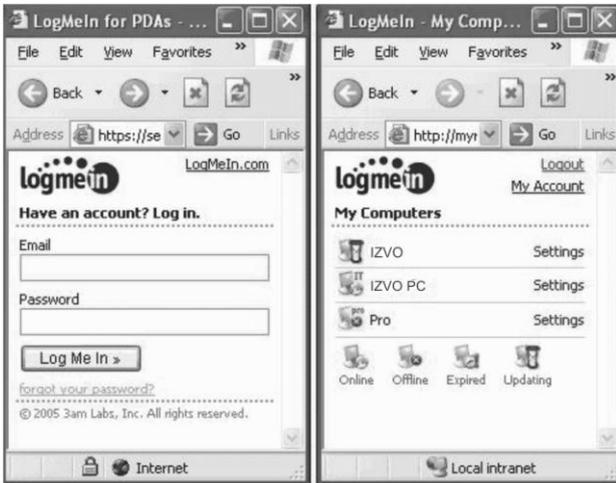

Fig. 1. LogMeIn interface

Quality of display can be optimized ranging from the most simple and fastest one to the top-quality one, which is slower. Basically, regardless of the network in which the computers work, if the Internet access is allowed, it is possible to access the remote computer over the LogMeIn service. This service is supported for Windows PCs and Mac OS X. Beside many advantages of this service, its big disadvantage is that you can access a remote computer only if it is switched on. This problem is solved with commercial versions of the program through WOL (Wake-on-LAN) which is enabled through BIOS.

3. TEAM VIEWER 5

TeamViewer, similarly to LogMeIn, enables the connection to a remote computer through the Internet or a local network. There is a simple installation on www.TeamViewer.com. Two ways of installation are possible: a classic installation, in which the program installs necessary modules which are started simultaneously with the system, whereas the other installation starts the application without any additional recording on the hard disc.
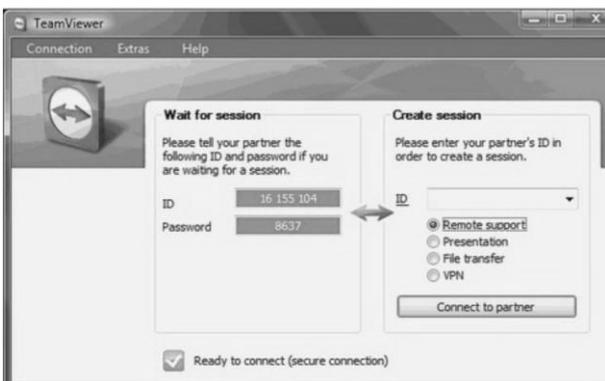

Fig. 2. TeamViewer interface

Connection to a remote computer is done when you write in the ID session number and a password, after which a secure connection is established, and the computer from which we connect opens the window showing the desktop of the remote computer. TeamViewer offers administrator authorization during connection to the remote computer; therefore it is possible to complete any task on the remote computer. Besides connecting to the remote computer, transmission of data from and to the remote computer, this service offers a possibility of VPN installation. The connection to the remote computer which is a part of the local network is possible only if its IP address is known. For this type of authorization, the option must be confirmed on the remote computer. For safety reasons, the program, whenever started, generates a password which stays active by the next start up. Additionally, there is the option of permanent generation of password. Free versions of the program are available for Windows, Mac, Linux and iPhone.

4. CONCLUSION

General requirements for these services are: security, reliability, affordability, QoS (Quality of Service) and, finally, the price of its installation and maintenance. As we speak here about non-commercial versions of the service, this last category is insignificant. TeamViewer in non-commercial version supports some options which LogMeIn does not support (Remote Sound, file-sharing between two connected computers). The speed of TeamViewer5 connection is higher than LogMeIn FREE. Both services can be simply installed and used and are highly secured.

Commercial versions offer many other options. If the price is a crucial factor, then TeamViewer is the right choice, and if the top control over the remote computer is more important, then LogMeIn is to be chosen. LogMeIn is paid annually and with regard to the number of used licences, whereas the TeamViewer has the payment options lifetime and unlimited (number of users). Each service has its advantages and disadvantages; it is therefore recommended to consider the options that you really need.

5. REFERENCES

Cowley, J.; (2007). *Communications and Networking,* Springer, ISBN-10: 1-84628-488-0, London, UK.

Available from: http://www.springerlink.com/content/978-1-84628-488-5 *Accessed:* 2010-08-12

Fowler, D.; (1999). *Virtual Private Networks: making the right connection,* Morgan Kaufmann Publishers Inc, ISBN: 1-55860-575-4, San Francisco, USA.

Muller, N. J. (2002). *Desktop Encyclopedia of Telecommunications,* McGraw-Hill, ISBN: 0-07-1381-1, New York, USA.

***http://compnetworking.about.com/od/vpn/1/ aa010701a.htm - VPN Tutorial, An introduction to VPN software, VPN Hardware and protocol solutions. *Accessed on: 2010-07-13*

*** http://www.teamviewer.com - Access any remote computer via Internet just like sitting in front of it - even through firewalls. *Accessed on: 2010-07-10*

***https://secure.logmein.com/ - flexibility to access and control your computers from anywhere. *Accessed on: 2010-07-10*

***http://www.findvpn.com/news/cis111003.php - VPN News and Reviews, SSL, VPN, Virtual Private Network. *Accessed on: 2010-07-13*

***http://computer.howstuffworks.com/vpn.htm - explanations, reviews, opinions and prices for the Internet, home networking, hardware, and software. *Accessed on: 2010-07-13*