

Remote Network Administration for the Home and Small Office User

Remote network administration is a fast growing and widely used technology in the IT field today. It gives system and network administrators as well as home users the ability to fix problems, allow or deny access to websites, download information directly from another computer, and give program permissions for different users from the office that they are at or from anywhere in the world that has an internet connection. With this very powerful technology, come some very significant problems such as securing remote access sessions via data encryption, the use of Virtual Private Networks (VPN's) and a vast amount of networking and connection problems that can occur. There are very useful tools and articles that have been written and programmed to help the network administrator or the savvy user that wants to connect to his computer at home. This paper will focus on network administration for small business and home users using a VPN, Remote Desktop Connection and Symantec's PC Anywhere for Microsoft Windows XP Professional.

Personal experience has shown that working remotely is very difficult to set up. This tends to discourage many users from using this kind of technology because it requires a large amount of know-how and patience. A SOHO user must have at least a

basic knowledge about home and office networking. Microsoft has put together a wealth of information about not only their operating systems, but networking using windows as well. The Microsoft knowledge base is a fantastic source for information. It covers everything from error codes to troubleshooting internet connectivity problems. Microsoft TechNet (<http://technet.microsoft.com/default.aspx>) is a collection of information about slightly older content. Lastly, the Microsoft Developers Network (<http://msdn.microsoft.com>) is a collection of articles, forums and journals straight from IT professionals that develop for windows applications. Almost any SOHO user can get the information that they need about any problem from these websites. XP Pro is now the industry standard for an operating system with advanced networking features. Working remotely for the SOHO user starts with the configuration of the network in the home or office. The small business users need to access all of their data at all times. This is most efficiently done by having all computers in the office connected to a central server, having the server host all of the other computers and have all of the computers connected via a workgroup. After that is accomplished, the SOHO user can then attempt to establish a connection remotely.

A VPN is one of the most secure ways to connect to the home or small office to date. The SOHO user can dial-in through a modem or connect through a broadband connection to the network at home through a public network, such as the Internet². This creates a direct virtual connection to the network at home that is more secure. This allows the user to manipulate the computer from wherever they are in the world. A VPN can use 3 different protocols: point-to-point tunneling protocol (PPTP), the newer layer-two tunneling protocol (L2TP) and IP Security Protocol (IPSec). Tunneling provides a secure

² Bott, Ed & Siechert, Carl *Windows XP: Inside Out* Redmond, Washington: Microsoft Press

and cost-effective way to connect two computers that are both connected to the internet¹. Tunneling protocols bypass the protocols of the internet and make a virtual, direct path to the other computer.

Remote Desktop Connection is very similar to a VPN. It creates a direct connection to the home or office computer. Unlike the limitations of a VPN, the RDC feature is built into the XP Pro shell. Using RDC the user can completely manipulate the computers at the office as if the user was right there in front of it because it only transmits the images of the desktop to the client computer. This allows for very fast transmission when working from a remote location because everything is run from the host computer unlike with a VPN connection where the client computer becomes another node on the network and all programs are run on the client computer.

Symantec has also come out with software to help the SOHO user work remotely. PC Anywhere is essentially a combination of a VPN and RDC. The user can manipulate the computer completely like they were in an RDC session but it creates a VPN while you are connected so it gives added security to the users.

As with any kind of technology, something new and better will always come out that is faster, more secure and more reliable. This article published by IEEE Computer Society discusses *Private-to-Private Communications Over the Internet*³. The article discusses security concerns and the subsequent workarounds with the growing number of the population getting connected to the internet and staying that way 24/7. This article also discusses the research project that was developed for monitoring quadriplegic patients in real time through the

³ <http://csdl2.computer.org/dl/mags/co/2004/05/r5053.htm> Private-to-Private Communications Over the Internet

implementation of VPN and NAT devices to be able to distinguish between the global IP and the private IP of all of the computers and devices connected to the network².

The next article describes how the European Patent Office (EPO) uses network architecture to combine and distribute data, have discussions and have virtual meetings using terminals and having the sessions hosted by a web server service enabled on the computers. The article also discusses the main differences between hosting the meetings internally or externally and which is more cost effective. They discovered that hosting internally would have the most up-front cost (which can be very expensive) or implement an internal server which in the long run is more cost effective. It also gives the user more control over availability and reliability⁴

The last article covers network administration through vehicular mobile commerce. The article covers Bluetooth connectivity and how car manufacturers are trying to put wireless technology in more than 20 million cars by 2008. BMW for example is trying to use Wi-Fi technology in their vehicles to make them “hotspots” so that the users can connect to the internet from anywhere that the car is. This will be a huge advancement and advantage for network administrators. NA could then work anywhere their car is because they have the internet connectivity to do so. Drivers of the new vehicles could download company data and not have to wait until the next time that they reach an internet access point⁵.

Years from now, SOHO users will have more connectivity than ever when it comes to business. Everything from the technology of now like RDC and the technology of the future like vehicular Wi-Fi, Users will have unlimited potential and will virtually never leave their home PC.

⁴ <http://csdl2.computer.org/dl/mags/co/2004/11/ry106.htm> Online Collaboration Products

⁵ <http://csdl2.computer.org/dl/mags/co/2004/12/rz116.htm> Vehicular Mobile Commerce

References:

Bott, Ed & Siechert, Carl *Windows XP: Inside Out* Redmond, Washington: Microsoft Press

All websites were pulled from IEEE...

<http://csdl2.computer.org/dl/mags/co/2004/05/r5053.htm> Private-to-Private Communications

Over the Internet

<http://csdl2.computer.org/dl/mags/co/2004/11/ry106.htm> Online Collaboration Products

<http://csdl2.computer.org/dl/mags/co/2004/12/rz116.htm> Vehicular Mobile Commerce