Beyond Remote Control

Features that Take Remote Control Capabilities to the Next Level of Network Management

Remote control technologies can enable a system administrator to connect directly to the desktop of an end users computer for support call resolutions. There are a large number of remote control applications and services available today that all claim to have different, unique capabilities. The following white paper analyzes current trends in the remote control industry and identifies features that will not only allow users to control another computer, but can also enable them to manage an entire network from a centralized location.

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Networking improves communication and file sharing within a company by placing large amounts of information a simple mouse click away to allow for more time efficient work to be accomplished. However, like a mechanic without the right tools, a network will not reach the potential return on investment without the proper software.

Remote control software is one way in which a company can expand usability and centrally administer their network. Remote control software links your keyboard, mouse, and screen to any PC you need to control, whether it's across the hall or on the other side of the globe. Administrators can keep surveillance over employee computers to ensure productivity while having the power to immediately access and fix computer problems. This helps keep the network and company operating at maximum potential as employees can access technical support in a matter of seconds without picking up their phone or filling out paperwork. The right remote control product makes all this possible while creating a barricade of security against would be attackers.

There are two modules that must be present in order to conduct a remote control session:

- The Administrator (The Control)
- The Controlled Machine (The Client), which grants the Control access to the machine

From running applications to installing software on the hard drive, a Control should be able to do every task except reformat the PC of the Client. The Client computer simply allows the Control to control or access it.

1. Types of Remote Control

Currently, there are two primary ways to conduct a remote control session:

- ***Browser-Based Remote Sessions*** function through an Internet browser that generally requires the temporary download of client software for a connection to be made
- ***Software-Based Remote Sessions*** operate using individual Control and Client applications installed separately on each machine.

Both offer advantages and disadvantages that will ultimately determine which type of remote control solution is best for your environment.

A. Browser-Based Remote Control

Browser-based remote control sessions are conducted through a website that utilizes an ActiveX version of a Control application with a downloadable Client application that is usually required for the remote control session to take place. These browser based remote control solutions typically "piggy-back" over HTTP or HTTPS ports 80 and 443 (TCP), and must connect to a third party website to establish a connection. An application/web server can be configured to require

authentication before allowing access to the page where the ActiveX Control component is loaded and roles for users can be created from within the management console.

With ActiveX Remote Sessions, the majority of the security will come from the Client being able to disconnect the Control whenever they'd like and the flexibility is almost unparalleled. Because the Control application is pre-configured on the server side, there will be no Control configuration or installation necessary by the administrator, a huge advantage if administrators move around and connect from any box they happen to be working with or if Clients are typically "on the road" and need support over the Internet. This type of remote control allows the Control piece to connect directly to the desired Client from anywhere on the Internet.

Browser-based remote control solutions are typically priced differently as they generally charge a monthly or annual fee for the use of their services, while software-based solutions usually have a set purchase price, once the software has been purchased it is the property of the customer to use without any monthly charges.

B. Software-Based Remote Control

Quality software-based remote control solutions provide enterprises with more features, security and configuration options than web-based or ActiveX solutions for a private network environment. With software-based remote control, both Control and Client applications are present and the Control can securely connect directly to the desktop of the Client machine within the private network.

Software-based remote control solutions differ from browser-based or ActiveX solutions because the Client and Control applications are installed on both machines allowing a remote session to take place. A good software-based remote control product will enable an administrator to deploy, install, and configure Controls and Clients from a centralized location. Such a feature saves IT employee's valuable time and money as this can be done in a matter of minutes.

The ability to remote control distant computers is no new technology. Since its development almost three decades ago, several products have evolved beyond simple remote control capabilities to offer feature-rich applications that simplify helpdesk environments. By providing IT employees with a number of extremely powerful utilities, a good remote control product will enable system administrators to take complete control of their entire network without having to leave their office.

2. Cross Platforms and Protocols

It is important to provide cross-platform and protocol support for different operating systems used throughout the network. Windows, Linux, Solaris, Pocket PC and Mac* systems with TCP/IP, IPX, HTTP and NetBIOS protocols are examples of different systems used throughout the world, and seamless Remote Control connections between multiple PCs located behind different firewalls will enhance the usability and effectiveness of the remote control system. This will provide a stable and secure method to communicate over the Internet or on a private network. Some non-Windows Clients now feature full Hardware and Software Inventory reporting capabilities, graphical support and HTTP communications to maximize productivity across the network.

3. Control Privileges

Upgrading software is a relatively quick and simple procedure on one machine. However, for the IT employee of a large organization who is responsible for upgrading hundreds of computers, it can take days or sometimes weeks to update the network. A file transfer feature in a remote control product can shorten this process to a number of hours by enabling the Control to send out files remotely to Client PCs from a centralized location. Software deployment is a more advanced function of some Enterprise Management Systems (EMS) not necessarily a remote control function but most EMS solutions will allow integration of remote control applications.

Additionally, a scripting utility can save a system administrator time by enabling them to schedule routine network maintenance whenever necessary. Whether defragmenting all the machines on a network or performing routine file transfers, a scripting utility eliminates these monotonous tasks from an IT employee's work week.

File synchronization features compliment scripting and file-transfer capabilities. If two or more computers are storing different files, synchronization will enable the selected files to be automatically copied and distributed between the desired computers.

Other products implement remote management consoles as well. With a remote management console, an administrator can conduct remote maintenance without actually remote controlling the Client's desktop or interrupting the end user at the remote machine.

4. Client Restrictions

The ability to restrict specific Control privileges when accessing the Client PC is a very important feature. While the Control has the majority of the privileges in the Control/Client relationship, it is important that the Client is configured properly; limiting the access of specific Controls to protect private and/or classified information on the PC.

Using an authentication feature, the Client can restrict which Controls have access to the Client PC and to what information each Control has access. For example, some IT personnel may only need to access and repair computers on the network, but an administrator may want full access to everyone's computer to ensure business continuity.

Also, the ability for a Client to accept multiple Control sessions at the same time can be very beneficial. This capability makes it easy to invite a help desk supervisor to view a problem or to demo a single screen to multiple users. Such a feature enables remote training or presentations as an instructor or speaker can lead discussions while controlling the Client computer for a visual example in real-time. Utilizing chat functions, an employee at a Client computer can contact their IT department at a Control computer to request help without picking up the phone. The IT person can then access their computer to assist with any problems from a central location.

Administrators that do not work from a specific location can utilize a USB Thumb Drive for further mobility. The Control to be copied to a USB for remote access and can allow a connection to Clients from any PC connected to the Internet. The USB Control can even store personal data, such AVP Client Transmissions as phonebook entries for example.

5. Security

Encryption protects against third parties being able to decipher information using a combination of WAN data-streams. Some products provide an option where the developers can embed a security token or password into the Client and Control modules that are purchased by a specific customer. Unique to every purchase, this Security Key must be present on both ends for a connection to be established. Such a feature prevents without the embedded security token from connecting to a Client on a private network, and the Government rated AES Encryption up to 256-bit can allocate individual profiles for different types of users while providing settings for customized security levels, privileges, and capabilities. However, encryption and passwords are just the tip of the iceberg with security.

6. Gateway Servers

Some applications extend beyond passwords and encryptions to offer several different levels of security. Additional ports provide hackers with multiple back-door entry-points into a network. The more ports that are opened in a firewall, the more susceptible networks are to attack. Having a single port of entry through the firewall insures that hackers will not have numerous back doors or points of entry into your network. A gateway server functions like a traffic patrol officer, directing all in/out-bound data streams through a single port in a firewall. This assures that no additional ports are opened in a firewall each time a new remote control session is initiated.

Some software can deter hackers and minimize the threat of malicious actions to improve organization, communication, and file sharing within a company to allow more productive and efficient work accomplished. However, hackers generally try to erase all activity logs in order to destroy any evidence or footprints that will expose them, so a good remote control application will enable all remote control activity logs to be stored in Windows Event Viewer or a centralized location. Therefore, any intrusions or tampering of company information is automatically recorded and logged for the network administrator to investigate.

7. Summary

Remote control technology has been around since DOS and OS/2 dominated the computer industry. However, since its inception in the 1980's, remote control software has come a long way - evolving into sophisticated, resourceful tools that provide much more than just simple remote control. Enterprises worldwide have saved thousands of dollars and countless hours of wasted time by enabling IT employees to be in two places at once. With a number of remote control products on the market, it is important to know what features are truly beneficial in order to separate the good from the bad. Usability, security, platform support, and speed should all be taken into consideration when purchasing remote control software. A good remote control application will combine all these features to enable system administrators to monitor, address, and resolve all network related issues from a single desktop to provide superior network management.

When deciding which application to purchase, a sufficient amount of research is needed to make sure the selected applications meet all of the technical needs of the company. Testing a product for 30 days will usually give an idea of how it will handle the network demands for end user support. After researching and testing each candidate, administrators should have a clearer picture to decide

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