

## Remote Access Solutions

*This white paper introduces several technologies used for Remote Access Services. Selecting the appropriate services can greatly enhance the working environment for organizations, and can improve how organizations fulfill their aims.*

Information technologies help organizations collaborate and share, which lets them achieve their missions more effectively. Remote Access Services extend those advantages outside the formal office setting, which can give organizations and their staff more flexibility to work at the most convenient locations and times. Remote Access Services can also reduce office space costs, and can provide great opportunities for organizations to gather the best people for a project no matter where they are located – anywhere in the country, or even across the globe.

At the most basic level, all computer networks provide remote access. For example, storing files on network drives means those files could be considered “remote”, and they can easily be used from different computers than the ones where they were created. When we talk about Remote Access Services, we’re usually describing ways to extend the same capabilities to people who are working from home, or who are on travel, or who may be working in a different office, or in the community.

There are several Remote Access Services that are in common use today. Some services compliment each other well, while others can provide full capabilities on their own.

### Options and benefits

- **Web Mail Services** give people the ability to communicate using email and to manage schedules without using the full service mail client typically installed on an office computer (e.g. Microsoft Outlook). The same technologies often enable email communications to mobile devices such as cell phones and PDAs (Personal Digital Assistants, such as Palm Pilots). Full access to Web Mail Services works best when an organization operates its own mail servers.
- **Virtual Private Networking, or VPN**, allows people to remotely access shared files kept on a server, similarly to how they might use shared drives from within an office. Some software requires a VPN connection in order to use information kept on an organization's servers when it is installed on remote computers.
- **Virtual desktop solutions, such as Microsoft Terminal Services or Citrix**, can deliver the full suite of office software and file access to a wide variety of computers. After installing the virtual desktop software, all the applications and settings that have been configured for remote use are automatically available at the remote computer without any further effort.

### Challenges

While some advantages of offering these services are easy to understand, there are trade-offs to each selection that may not be as readily apparent:

- Enabling Web Mail Services adds several security considerations, such as enforcing password policies and encryption requirements. Security is usually configured at the same time that Web Mail Services are initially set up, if they aren't already a part of an

organization's networking best practices.

- VPN connections can be difficult to configure at remote computers. Well written take-home instructions can help, but the initial setup may require extra assistance or home visits. Setting up a VPN connection might not be allowed on some remote networks (for examples, at other offices or some hotels).
- Once a VPN connection is up and running, the remote computer is essentially a part of the office network. It's very important that the remote computer is protected from computer viruses and other attack software, because such "malware" can travel from the remote computer to the office network as easily as any other information.
- The performance of VPN connections is limited by the Internet connection speed of the remote computer. Some home broadband connections have fast download speeds (for bringing information down to the computer) but don't offer good upload speeds (for sending information up to the server). VPN can be demanding in both directions.
- Virtual desktop solutions require per-connection licensing fees, both for the virtual desktop connections and also for any software that is used.
- The current generation of virtual desktop solutions are very efficient in using Internet bandwidth, however, the number of sessions connecting to the server can quickly impact Internet availability at the main office.

#### Case studies:

- At a large philanthropic organization, a well configured VPN service allows staff and consultants to work remotely through a web browser with a complex Constituent Relationship Management (CRM) software package. The software is used to record and look up contact information, track issue interests, and maximize donation potential for 20,000 individuals and businesses. By selecting VPN services and using a web browser to deliver the information, the organization is able to reduce the cost of licensing the client software and can offer access to the database from many more locations.
- At a legal services membership association, Microsoft's Terminal Services allow the organization to extend use of its database resources to provide collaboration opportunities at dozens of training and networking events throughout the year. By using a virtual desktop solution, staff in the office can assist with registration and data gathering tasks without requiring them to be physically present at the events.
- Community IT Innovators' own workforce, the technicians, consultants, engineers and developers who serve more than 300 organizations, operates with a virtual desktop environment. CITI staff can have access to client files, time and billing databases, email, and everything one would expect in a traditional office environment, at any location where their work takes them. CITI's physical office space also doesn't need to provide dedicated workspaces for the 25 of 40 staff who primarily work on location at client sites.

#### Conclusion:

By including appropriate Remote Access Services in an organization's networking plans, it may



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be able to increase efficiencies at lower costs, with greater freedom for staff. Remote Access Services don't need to be complicated or expensive, if wise choices are made based on planning tied to organizational current and future needs.