

Going Remote: What You Need To Know

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We will discuss

- What is Remote Access for applications?
- What are the different types of applications you should know about?
- What are the security implications and standards to look at?
- What Remote Access technologies are available?
- How do you begin a Remote Access project?



What is Remote Access?



Remote Access for Applications

- Remote access allows staff to access and use the functionality of an application without the need to be tied to specific physical location



What are the types of applications?



Why is this section important?

- Not all applications types can be remoted using the same technology
- Security and compliance implementations may be different depending on the application type



Client / Database Applications

- Larger installed client on user's desktop ("fat client")
 - Connects directly to a database
- Example : Recipe storage application in MSFT Access



Client / Server

- Larger installed client on user's desktop ("fat client")
 - Connects to a server over the network
 - Server applies additional logic before and after interacting with a database
- Example : MSFT Outlook w/ Exchange



Web-Based

- Uses a web browser as a client
 - Connects over network or internet to a web server
 - No software installed locally on the client
- Example : Online banking



What Remote Access technologies are available?



Why is this section important?

- Not all applications types can be remoted using the same technology
- Each technology has its own pros and cons as well as cost to use and implement



Tunnel in: Virtual Private Network (VPN)

- Point-to-point “tunnel” between the users computer and your firewall
 - Encrypted and secured connection
 - Makes the users computer seem like it is directly plugged into your network
 - Bandwidth limited to the smaller of the internet connection on the user’s computer and datacenter
- [MSFT VPN Services](#)
 - [Cisco Firewall / VPN concentrators](#)



A Virtual Window: Remote Desktop

- Client runs on a remote sever
 - “Screen shots” transferred back to the user’s computer
 - Mouse and keyboard input forwarded to the remote server
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- Microsoft Terminal Services
 - Citrix XenApp



Microsoft Terminal Services

- Popular remote desktop technology since NT4
- 2008 version allows you to “publish applications” instead of whole desktops
- Often used with MSFT Application Virtualization tools (App-V)
- Generally cheaper licensing, but less advanced than Citrix XenApp

<http://www.microsoft.com/windowsserver2008/en/us/ts-product-home.aspx>



Citrix XenApp

- Citrix is the original “remote desktop company” and licensed their technology for RDP to MSFT
- Allows publication of Windows and Unix applications
- Allows use of the applications on Windows, Mac and Linux devices
- Robust tools for application virtualization (directories, printers, etc.)
- Generally more expensive than MSFT

<http://www.citrix.com/English/ps2/products/feature.asp?contentID=1684340>



Application Hosting

- Application Service Provider (ASP) installs the application for the user on provider's server
- User accesses the application using Remote desktop
- More on this later



Software as a Service (SaaS)

- SaaS vendor builds an application
- Vendor installs the application for the user on provider's server
- User accesses the application using a web browser
- More on this later



Security and Compliance



Why is this section important?

- Security and compliance issues may rule out some technology choices
- Security is a major concern with accessing application software over the internet



General Security Best Practices

- Properly Configured Firewall
- Anti-virus / spyware
- Intrusion detection / prevention
- Vulnerability testing
- Server configuration and “Hardening”
- Employee security training (“Human Firewall”)



Are you a trusting person?

- Profile of real-life hackers & social engineers
 - [Mitnick Security Consulting](#)
 - [The real Kevin Mitnick](#)
 - [Frank Abagnale](#)



Sarbanes-Oxley (SOX)

- Congressional regulation passed in 2002 as a result of the massive collapse of Enron
- Requires that subjected companies place auditable controls on key points in their process that might affect the accuracy of their financial reporting
- Penalty for execs who are knowingly out of compliance or “cook” the books → Jail time
- Currently mostly pertains to public companies, but watch this space



PCI Compliance

- Payment Card Industry (PCI) Data Security Standard, published in 2004
- Organizations that store credit card data are required by their processors to be PCI-compliant
- Patch your systems regularly, conduct vulnerability scans, and perform an official audit at least annually



HIPAA Compliance

- The Health Insurance Portability and Accountability Act (HIPAA), enacted in 1996
- The privacy rule says that individuals have a right to access their “personal health information”, a right to have that information kept confidential, and the right to request an audit of its use
- The security rule complements the privacy rule as it lays out standards for control and administration of individuals’ “personal health information”
 - Safeguards are identified in the areas of Administration, Physical and Technical.



SAS 70 (Type I and II)

- Statement on Auditing Standards #70 is an auditing standard issued by the American Institute of Certified Public Accountants (AICPA)
- Type I SAS 70 compliance is an auditor's assessment of the effectiveness of the design of the operational policies, procedures and controls that the entity has put in place
- Type II includes the same evaluation as Type I, but additionally adds an audit of whether the policies, procedures and controls were in use at the time of the audit and were effective



IT Skills Required for Remote Access



Key Skills

- Networking design and configuration
- Security principles, design and implementation
- Operating System installation and management
- Application hosting technology installation, and implementation

If you do not have qualified individuals in house with these skills, seek a partner who does!



Finding a Hosting Partner



Vendor Selection Criteria

- Length of time in business
- Proper accreditation (SAS 70 and PCI)
- Service Level Agreement (99+% uptime)
- Customer support reputation
- Avoid lowest bidder or lowest cost providers
- Avoid vendors on the cutting edge of technology
- Look for staff with architect level titles and certifications on technology (MCSE, Cisco, SAIC)
- Look for a company that first strives to understand your needs, rather than prescribes a solution they want to sell you



Types of Hosting Partner Offerings



Co-location

- Your server
 - Located at provider's datacenter
 - Provider's power, network and internet
 - You pay a monthly fee based on usage
 - You maintain and manage your servers, OS's, services and applications
- ✓ Ideal if you have full IT staff, but not a datacenter



Hosting

- **Provider's server**
 - Located at provider's datacenter
 - Provider's power, network and internet
 - You pay a monthly fee based on usage
 - **Provider maintains and manages servers and OS's**
 - You maintain and manage your services and applications
- ✓ Good opportunity to take a load off your existing IT staff, and possibly reduce costs



Managed Service Provider (MSP)

- Provider's server
 - Located at provider's datacenter
 - Provider's power, network and internet
 - You pay a monthly fee based on usage
 - Provider maintains and manages servers, OS's, and **services**
 - You maintain and manage your applications
- ✓ Managed services is an ideal choice for those who have few or inexperienced IT staff, or are looking to reduce IT costs



Application Service Provider (ASP)

- You don't have to think about a server, OS, services, or the application
- An ASP offers you remote access to popular applications, along with hundreds of other customers
- You pay monthly or on contract
- ASPs are not usually the software manufacturer of the application they offer



Software as a Service (SaaS)

- You don't have to think about a server, OS, services, or the application
- SaaS is built specifically to be offered over the web
- You pay monthly or on contract
- SaaS providers **are** usually the software manufacturer of the application they offer.
- SaaS software is generally not offered in stand-alone form



Parting Thoughts



What I most want you to remember!

- How you implement remote access is dependent on what you're trying to access remotely
- If you don't have expertise in-house to properly do remote access, seek professional assistance
 - No OJT!
- Partners can significantly decrease both your rollout time and cost
 - They are worth your consideration
- Security is serious business
 - If you're not thinking about Hackers, they'll be doing more than thinking about you



Q&A

