Remotely and Securely Controlling Other Computers From Your Mac for Administrative or Support Purposes

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Who is this guy?

Why are we doing this?

What we'll learn

- Remote desktop technologies overview
- Concentration on included or free tools
- Server applications
- Client applications
- Secure connections via VPN
- Secure connections via SSH tunnel

Remote Desktop Technologies

Microsoft Remote Desktop Protocol

• Based on ITU-TT.128 (aka T.SHARE)

- Included with Windows 2000 Server and above (**not** Windows 2000 Professional)
- Controls the console or a separate login session
- Unsecured

Virtual Network Computing

Screen-scrubber, bandwidth intensive

- Cross-platform (including Windows 2000 Professional)
- Controls the console, which can be shared among multiple users
- Unsecured

Server Applications

Windows Terminal Services

- Install via Control Panel (Windows 2000 Server)
- Enable in System Properties (Windows Server 2003 and Windows XP)

Terminal Services Install (Windows 2000 Server)

dows Components Wizard	
Terminal Services	×
To add or remove a component, click the check I of the component will be installed. To see what's i	box. A shaded box means that only part included in a component, click Details.
Subcomponents of Terminal Services:	
Client Creator Files	14.3 MB 🛌
🗹 🔷 Enable Terminal Services	0.0 MB
	=1
1	
Description: Enables Terminal Services softwar	e on your computer.
Total disk space required: 0.0 MB	Details
Space available on disk: 1094.6 MB	
	OK Cancel

Terminal Services Install (Windows XP and Server 2003)

System Properties		? ×
General Advanced	Computer Name Automatic Updates	Hardware Remote
Select the way location.	s that this computer can be used	from another
Remote Assistance		
C Turn on <u>Remote</u> computer	Assistance and allow invitations I	to be sent from this
Learn more abou	t <u>Remote Assistance</u> .	
		Ad <u>v</u> anced
Remote Desktop		
Enable Remote D	esktop on this computer	
Important: To allo Select Remote U	w users to connect remotely to the sers.	his computer, click
Full computer nar	ne:	
Learn more abou	t <u>Remote Desktop</u> .	
	Select	Bemote Users
	<u> </u>	ancel <u>Apply</u>

Virtual Network Computing (VNC)

- For Windows: RealVNC, TightVNC, UltraVNC, others.
- For Mac: Apple Remote Desktop, OSXvnc
- For Linux:VNC server included

Apple Remote Desktop

- Comes with Tiger
- Can be used with ARD application or as generic VNC server
- Enable in Sharing System Preference

ARD Install and Setup

UII USEI	Allow user to do the following on this computer
Aaron Adams	
	Generate reports
	Open and quit applications
	Change settings
	Delete and replace items
	Send text messages
	Restart and shut down
	Copy items
	Observe
	Control
	Show when being observed
Personal Web Sha	ring Click Stop to prevent others from accessing this computer using the
Guests may request per	rmission to control screen are Desktop program.
Guests may request per VNC viewers may contro	ol screen with password:
Guests may request per VNC viewers may contro	ol screen with password:
Guests may request per VNC viewers may contro	ol screen with password:
Guests may request per VNC viewers may contro	rmission to control screen ol screen with password: Computer Information
Guests may request per VNC viewers may contro VNC viewers may contro These fiel	ol screen with password: Computer Information Ids are displayed in the System Information Report
Guests may request per VNC viewers may contro These fiel	computer Information Ids are displayed in the System Information Report
Guests may request per VNC viewers may contro These fiel	Info 3:
Guests may request per VNC viewers may contro These fiel Info 1: Info 2:	Info 3:

OSXvnc

- Simple
- Standalone application or startup item
- Secure connection option

OSXvnc options

$\Theta \Theta \Theta$	OSXvnc (1.61)			
(General	System	Sharing	Startup
Display Sharing				
 Always share display between clients Let clients decide 				
Never share display between clients Keep existing client when new client connects				
Disable Remote Keyboard/Pointer				
✓ Only allow local connections (require SSH)				
Advertise Server via Bonjour (10.2+)				
The server is not running.				
View Lo	og	Sto	op Server)	Start Server

Client Applications

Microsoft Remote Desktop Connection

- Use to connect to Terminal Services / Remote Desktop
- Good interface and options
- Connection profiles

MSRDC Negatives

- Cannot connect to more than one server at a time
- Failed connect requires you to re-open the application

RDC Launcher

- Applescript
- Calls up LaunchCFMApp to start an additional copy of MSRDC

RDC Menu

- Lives in the menu bar
- Pull-down menu to start additional copies of MSRDC

RDesktop

- Command-line application
- Runs in XII window system
- Download and compile from source

./configure

make

sudo make install

RDesktop

- Installs to /usr/local/bin
- Add to path (PATH=\$PATH:/usr/local/bin)
 in .profile
- Write shell script to start

#!/bin/bash

/usr/local/bin/rdesktop \ -u you ∖ -d Domain ∖ -g 1024x768 ∖ -x 1 \ -Z \ -a 24 ∖ -T "Windows XP" ∖ winxp

RDesktop

Associate shell script with XII.app
Place folder in Dock

Windows VNC Clients

- RealVNC, TightVNC, UltraVNC, usually include client piece as well as server
- Can control Mac or Windows target machines

Chicken of the VNC

- Connection profiles
- "Listen for Server" connects to VNC servers behind a firewall



Protocols and Ports

- A port is a logical data stream designated by a number
- Microsoft Terminal Services / Remote Desktop listens on port TCP 3389
- VNC listens on port TCP 5900-5903

IPSec VPN

- No need to open firewall ports
- Low overhead
- Very good security

IPSec VPN Diagram



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Secure Shell (SSH) Tunnels

- SSH comes with every Mac
- GUIs available
- Good security
- Requires opening only one firewall port for multiple services
- You must have an account on remote machine

TCP/IP Network Model



Protocol Tunneling



User's VNC data

Enable SSH on a Mac

0 0	Sh	aring
Show All		Q
Computer Name: O O ye Select a service to ch On Service Personal File S	PowerBook Other computers on you our computer at Power Services Fin ange its settings.	ur local subnet can access rBook.local Edit rewall Internet Remote Login On Stop
 Windows Shari Personal Web Remote Login FTP Access Apple Remote Remote Apple Printer Sharing Xgrid 	ing Sharing Desktop Events	Click Stop to prevent users of other computers from accessing this computer using SSH.
To log in to this comput prompt.	er remotely, type "ssh	" at a shell command

Click the lock to prevent further changes.

SSH for Windows

- Not included with Windows, must use third party software
- Cygwin is free command line Unix on top of Windows
- Includes SSH client and server

SSH Tunneling Command Line

ssh -NfL 5900:localhost.:5900 you@remote.machine.net

Command	What it does
ssh	SSH command
-N	Do not return a command prompt
f	Run this command in the background
	Perform the following port redirection
5900:	Local TCP port
localhost.	Remote service host IP / name
:5900	Remote service TCP port
you	SSH login name
@remote.machine.net	IP / name of SSH server

localhost. 127.0.0.1

Connecting to the tunnel

VNC Login
Host: localhost
Display: 0
Password: ••••••
Remember Password
Profile: Default Profile
View only
Allow other clients to connect
Fullscreen display
Connect

A tunnel example graphic



A tunnel example graphic, with firewall

remote.machine.net



A different tunnel example graphic

ssh -NfL 5901:imac.lan.net:5900 you@xserve.lan.net



An example RDP tunnel

ssh -NfL 3389:localhost.:3389 you@windows.machine.net

	Remote Desktop Connection (RDC)	
		_
Computer:	localhost	
	(Examples: MyPC, name.microsoft.com, 192.168.255.255)	
Options —		
	Quit O	Connect

Optional key-based login

- You will have to enter a password each time you establish a tunnel
- To eliminate the password, create a public / private key pair

mkdir ~/.ssh cd ~/.ssh ssh-keygen -b 1024 -t dsa -f id_dsa -P '' touch authorized_keys2 cat id_dsa.pub >> authorized_keys2 chmod 400 id_dsa scp authorized_keys2 you@remote.machine.net:~/.ssh/

In conclusion...