

# Vine Server™

USER MANUAL



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Vine Viewer™ User Manual

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# PREFACE

This preface contains:

- A background and feature list of Vine Server.
- System requirements and installation instructions.
- Information about Vine Viewer, the companion VNC viewer to Vine Server.
- Help resources.
- An Introduction to Virtual Network Computing (VNC).

## Redstone and VNC

*Redstone creates a lot of VNC enthusiasts through Eggplant automation and testing software.*

*To learn how Eggplant uses VNC to automate processes on any computer, please visit [www. redstonesoftware.com/technology](http://www.redstonesoftware.com/technology).*

## About Vine Server

Vine Server, previously released as OSXvnc, is a free, open-source VNC server from Redstone Software, Inc.

- Vine Server offers a rich and unique feature set among Mac OS X VNC servers:
- Flexible port assignment for multiple VNC servers on a single computer.
- System servers that run independently of user accounts.
- Outstanding clipboard sharing; Exchange of rich text, images, files, and applications with Vine Viewer.

## Enhanced Functionality with Vine Viewer

Inspired by over 800,000 downloads of Vine Server, Redstone now offers Vine Viewer, a premium VNC viewer for Mac OS X.

Vine Viewer and Vine Server together bring a new level of control to VNC. Using the Vine combination adds:

- Rich clipboard sharing: Cut and paste exchange of rich text, files, and applications between Vine Server and Vine Viewer.
- Bonjour™ networking technology for effortless local connections.

Other features of Vine Viewer include:

- QuickTime™ movie recording.
- Secure connections through SSH.
- Remote window scaling.
- A simple, highly intuitive interface.
- Clipboard exchange of rich text, images, files, and applications with Vine Server.

To learn more or purchase Vine Viewer, visit [www.redstonesoftware.com/products/vine](http://www.redstonesoftware.com/products/vine).

## System Requirements:

Macintosh computer  
Mac OS X v.10.1 or later

## Installation

- 1 Locate the Vine Server icon on your desktop.
- 2 In the Finder, move Vine Server to the Applications folder.
- 3 Double-click the Vine Server icon.

## Help and Additional Information

There are two ways to locate this document for future reference:

- Go to [www.redstonesoftware.com/docs.manuals](http://www.redstonesoftware.com/docs.manuals). Download Vine Server User Manual.
- In the Vine Server application, choose Help > Vine Help.

For Vine Server updates, news, discussion forums, and all available support resources, please visit [www.redstonesoftware.com/support](http://www.redstonesoftware.com/support).

## Introduction to Virtual Network Computing (VNC)

The foundation of Vine Server is Virtual Network Computing (VNC). VNC is a technology that allows you to use the computer right in front of you to control a computer on the other side of the room, or the other side of the world.

VNC is not limited to a particular computer or operating system. It is available for virtually any computer, as well as devices such as cell phones and PDA's. (This manual discusses computers for the sake of simplicity.)

VNC can provide a wealth of benefits in many areas: Helpdesk, education, remote system administration, telecommuting, and family technical support, to name a few.

## How VNC Works

To use VNC, you need three things:

- 1 **VNC Server.** The computer you intend to control remotely must be running a VNC server. (The VNC server must have granted you permission to use it.)
- 2 **VNC Viewer.** The computer you use to remotely control a VNC server must be running a VNC viewer.
- 3 **A Network Connection.** The VNC server and VNC viewer must be able to exchange information over the Internet or other network.

The VNC viewer initiates a VNC connection with the VNC server. If the VNC server agrees to the connection, it begins to send back an image of its own display.

The VNC viewer opens a window that shows the VNC server display. From this window, you can use your own mouse and keyboard to interact with the VNC server as if you were sitting right in front of it.



# CHAPTER 1: SETTING UP A VNC SERVER (QUICK START)

The Connection tab in the Configuration panel contains the contact information that VNC viewers use to find and connect to a VNC server. This is all you need to start a VNC server on your local network.

(VNC servers that host connections from outside your local network start the same way, but they require a few additional steps.)

## Experienced Users

*If you have previous experience with VNC, launch Vine Server and look at the General configuration before you read this chapter. You might find that you are already familiar with the VNC basics you need to get started.*

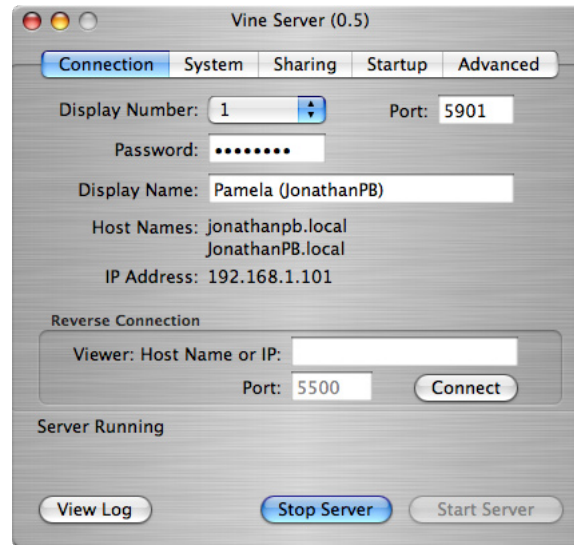
This chapter contains:

- The Quick Start procedure for setting up a VNC server.
- A checklist of the VNC server information you need to set up a VNC viewer.

## Quick Start Procedure

- 1 Launch the Vine Server application.
- 2 In the Configuration panel, select the Connection tab.
- 3 In the Display Number pop-up menu, choose a number. The Port field reflects your choice- 590x, where x is the display number.  
(If you choose Auto, Vine Server starts at 5900 and checks every port until it finds one that is available for the new VNC server. )
- 4 *Optional:* Fill in the Password field. Anyone who attempts to open a connection with the VNC server must provide the password you enter here.  
Passwords are case sensitive, and up to eight characters long.  
Fill in the Display Name field. Type a name that can be recognized by the people who use the VNC server.
- 5 On the bottom of the Configuration panel, click the Start Server button.

When the VNC server is running, it is ready for a VNC connection on your local network. To open a VNC connection from outside your local network, see Chapter 3: Allowing VNC Connections..



## VNC Connection Checklist

VNC viewers require the following information to connect to a VNC server:

**Port.** Computers exchange data through many different kinds of programs, such as email and web browsing. To organize these exchanges, every program has its own line of communication identified by a port number. VNC servers typically use ports 5900-5909.

**Display Number.** Because a VNC server's port number is usually 5900-5909, some VNC servers assume the first three digits and look for only the last digit. The last digit of a port number is called the display number.

**Password.** Anyone who attempts to open a connection to a VNC server must provide the correct password. (The Password field displays eight bullets, even if your password uses fewer than eight characters. Characters beyond the eighth are disregarded.)

**Host Names.** Host names are the "official" names by which your computer can be found on a network. Vine Server takes this information from System Preferences > Sharing, as well as any domain name server you are using.

**IP Address.** An IP Address is a unique series of numbers used to identify your computer on the Internet or other network. Vine Server takes your IP address from System Preferences > Network. 1

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1If your computer is running on a local network, the IP address shown in the Configuration panel is an internal IP address. An internal IP address can only be used to open VNC connections within a local network. Outside connections require an external IP address. For more information, See Using External and Internal IP Addresses with a Router in Chapter 3: Allowing VNC Connections.

## CHAPTER 2: USING VINE SERVER

After you set up a VNC server, Vine Server is a very low-maintenance program. This chapter explains:

- The operation of desktop servers and system servers.
- Multiple desktop sessions from a single computer.
- Reverse VNC connections.

### Desktop Servers and System Servers

This section describes the functional differences between VNC servers that you start from your desktop and VNC servers that automatically start when your computer is booted.

#### Desktop Servers

When you start a VNC server from your desktop, it runs on the active Mac user account, like any other program. If you switch to a different user account, the ViNC server stays with the original user account. It can continue to transmit data from the original account, but it cannot “see” what you are doing on the second account.

#### Starting and Stopping a Desktop Server

To start a desktop server, click the Start Server button on the bottom of the Configuration panel.

To stop a desktop server, click the Stop Server button on the bottom of the Configuration panel.

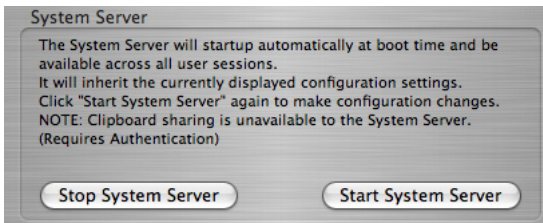
**System Server Tip**

*System servers are particularly useful when you need to connect to a Mac from the login window before any account has been activated. Desktop servers, which belong to specific user accounts, cannot transmit data from the login window.*

## System Servers

A system server is a VNC server that runs independently of Mac user accounts. That is, if you switch from one user account to another on your primary display, the system server switches with you.

When you use a system server, it starts running every time you start up your computer. The server starts silently, without launching the Vine Server application.



### Starting a System Server

- 1 Assign settings for the Connection, System, and Sharing configurations, as you would for a desktop server.  
Note that the system server must use a different port number than any other VNC server on your local network.
- 2 Click the Start System Server button.
- 3 To change system server settings, click the Stop System Server button, adjust the settings, and start the server again.

### Stopping a System Server

Click the Stop System Server button to stop and disable a system server. The system server no longer starts when you turn on your computer.

## Multiple Desktop Sessions with Fast User Switching

One of the great benefits of using Vine Server with Mac OS X is the ability to access multiple user accounts simultaneously.

If you are sharing a Mac with family, roommates, or coworkers, you can now run Vine Server in each user account to make the Mac available to all of you from any computer, PDA, or cell phone with a VNC viewer.

### Setting Up Multiple Desktop Sessions

Before you begin, make sure that Fast User Switching is turned on in Mac OS X System Preferences.

## Turning on Fast User Switching

- 1 Log in with a user account that has Administrator privileges on the Mac.
- 2 Click the System Preferences icon in the Dock.
- 3 Select System > Accounts.
- 4 Select Login Options.
- 5 Select the “Enable fast user switching” checkbox.

## Setting up a VNC Server in Each User Account

- 1 Follow the VNC server set-up procedure explained in Chapter 1: Setting Up a VNC Server.  
Note: Each VNC server on your local network must use a different port. In Connection configurations, choose Display Number > Auto to specify the lowest available port number automatically.
- 2 Start the VNC server. (Click the Start Server button on the bottom of the Configuration panel.)
- 3 Set up Vine Server as a startup item. (Click and hold the Vine Server icon in the Dock. Choose Open at Login.)

## Using Multiple Desktop Sessions

- Each user account that you intend to access through a VNC server must be logged in on the computer.
- The user accounts are sharing a single computer. When several people are operating their user accounts at once, you might notice slower performance.
- Peripheral devices can be used by each user account, one at a time. For instance, the computer’s speakers do not attempt to play music from several user accounts at once.

## Reverse VNC Connections

A standard VNC connection is initiated by a VNC viewer connecting to Vine Server; however, Vine Server can also initiate a reverse connection and connect to a VNC viewer.

When you open a reverse connection with a VNC viewer, the server/viewer relationship does not change. Vine Server is not able to see or control the VNC viewer.

### Reverse Connection Tip

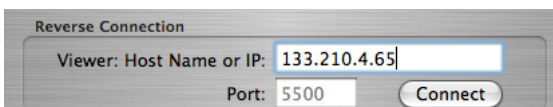
*One benefit of being able to open a reverse connection is that you don't have to make any changes in your VNC server's firewalls or router. (These devices are trying to keep other people out of your network, not prevent you from leaving.)*

## Preparing a VNC Viewer for Reverse Connections

- 1 In the VNC viewer program, turn on reverse connections. (For Vine Viewer, go to Preferences > VNC. Select the Listen for Reverse Connections checkbox.)
- 2 In the VNC viewer program, specify the port number for reverse connections. The standard port for reverse VNC connections is 5500.
- 3 On the computer running the VNC viewer, modify the firewalls and/or router to allow connections on Port 5500.

## Opening a Reverse Connection

- 1 In the Configuration panel, click the Connection tab.
- 2 In the Viewer: Host Name or IP field, type in the host name or IP address of the computer that is running the VNC viewer.
- 3 In the Port field, type the port number on which the VNC viewer receives connections. (The standard port for reverse VNC connections is 5500.)
- 4 Click the Connect button.



## CHAPTER 3: ALLOWING VNC CONNECTIONS

When a VNC viewer outside your local network attempts to connect to your VNC server, it must be able to bypass your regular security measures.

This chapter provides:

- Requirements for allowing VNC connections through a firewall or router.
- Step-by-step instructions for modifying the Mac OS X internal firewall to permit VNC connections.
- General instructions for opening VNC connections through a router; the difference between local connections and outside connections.

### VNC Connections Through a Firewall or Router

When you set up a VNC server, you determine the particular port it uses to host VNC connections. Every port used by a VNC server on your computer must be “opened” in the Mac OS X internal firewall and any external firewall or router on your local network.

To open the VNC ports (5900-5909) in your external devices, consult your specific firewall or router documentation. Opening these ports in the Mac OS X internal firewall is described below.

### Opening VNC Ports in the Mac OS X Internal Firewall

- 1 Be certain that you are logged in to your computer as a system administrator.
- 2 Open System Preferences.
- 3 Under Internet & Network, select Sharing.
- 4 In the Firewall tab, click the New button.

**Port 5900**

*In Mac OS X, port 5900 is assigned to Apple Remote Desktop. If Apple Remote Desktop is turned on in System Preferences, remember that port 5900 is not available to your VNC servers.*

*To turn off Apple Remote Desktop, select System Preferences > Sharing. In the Services tab, deselect Apple Remote Desktop.*

5 Do one of the following:

Open ports 5900-5902. In the Port Name pop-up menu, choose VNC. In the TCP Port Number(s) field, Mac OS X specifies 5900-5902.

Open all VNC ports. In the Port Name pop-up menu, choose Other. In the TCP Port Number(s) field, type 5900-5909. In the Description field, type VNC+.

6 Click OK.

## External and Internal IP Addresses with a Router

When you manage a network with a router, it uses a single external IP address to conduct all of your computers' communication with the outside world. Each computer on the network is then assigned an internal IP address, which the router uses to parcel out incoming data correctly.

### Local VNC Connections with an Internal IP Address

When you open a VNC connection within a local network, the VNC viewer locates the VNC server by its local IP address. (This is why the Quick Start procedure works for local network VNC connections; the IP address shown in the Configuration panel is the internal IP address for the computer running the VNC server.)

### Outside VNC Connections with an External IP Address

When you open a VNC connection from outside a local network, the VNC viewer must first use your router's external IP address to locate the network. For this reason, VNC viewers outside your local network cannot use the internal IP address shown in the Configuration panel. Instead, you must provide the external IP address of your router.

### Finding an External IP Address

Do either of the following:

- From your local network, visit [www.gotomyvnc.com](http://www.gotomyvnc.com). GoToMyVNC is a service that inspects networks for open VNC ports. Whether you perform the inspection or not, the homepage displays your external IP address on the Run Check Now button.
- Check the router configurations. Consult your router documentation for more information.

### Port Forwarding from the Router to the Correct Computer

After a VNC viewer locates your network, it is up to the router to direct it to the VNC server it is looking for. This process is known as port forwarding. For every port that you assign to a VNC server, you must set up your router to send that port's communication to the correct internal IP address.

Consult your router documentation to learn how to set up port forwarding.



## SSH Connections

Secure Shell (SSH) is a network protocol that uses data encryption to transfer information securely.

The standard port number for SSH connections is 22. To allow SSH connections to a VNC server, you must modify the Mac OS X internal firewall and your external security devices to open port 22.

If you are using a router, you must also forward port 22 to the computer that is running the VNC server.

### Opening the Remote Login (SSH) Port in the Mac OS X Internal Firewall

- 1 Be certain that you are logged in to your computer as a system administrator.
- 2 Open System Preferences.
- 3 Under Internet & Network, select Sharing.
- 4 In the Services tab, select the Remote Login checkbox.

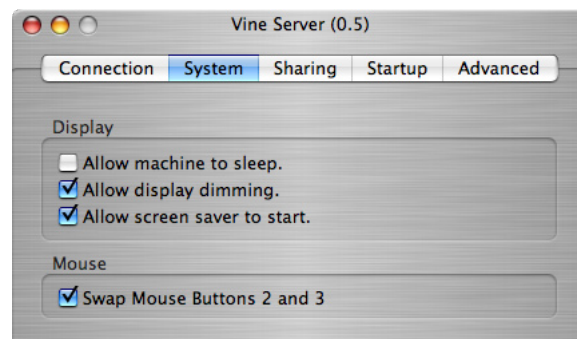
When you turn on Remote Login, the computer automatically selects Remote Login- SSH in the Firewall tab, which opens port 22. You cannot manually select or deselect Remote Login- SSH in the Firewall tab. You must do it through the Services tab.

## CHAPTER 4: SETTING ADDITIONAL CONFIGURATIONS

This chapter describes the Configuration panel settings that can provide more flexible control of your VNC servers.

### System Configurations

System configurations include settings that affect the way the VNC server's display and mouse behave under VNC viewer control.



### Display

These settings allow Vine Server to *override* display System Preferences when a VNC server is running. They do not change the underlying System Preferences.

### Allow Machine to Sleep

Select this checkbox to allow your computer to go to sleep when the VNC server is running. A sleeping computer cannot be awakened through a VNC viewer. Deselect this checkbox to turn off sleep while a VNC server is running.

### Allow Display Dimming

Select this checkbox to allow your display to dim when it normally would. Deselect this checkbox to turn off display dimming when the VNC server is running.

### Allow Screen Saver to Start

Select this checkbox to allow your screen saver to turn on when it normally would. Deselect this checkbox to turn off your screen saver when the VNC server is running.

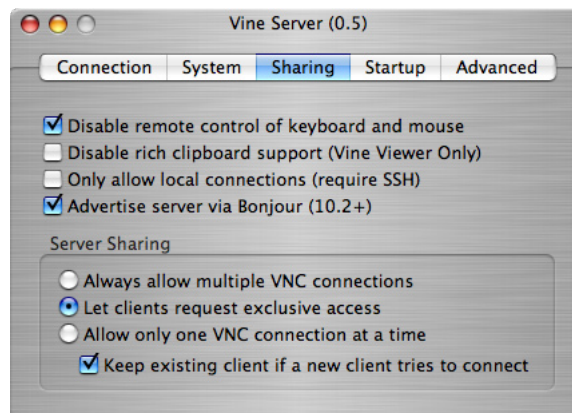
## Swap Mouse Buttons 2 and 3

This checkbox is selected by default. Most VNC viewers consider Mouse Button 2 and Mouse Button 3 to be reversed with respect to the Mac OS X operating system. (This includes most VNC viewers that run on Mac OS X.)

Deselect this checkbox if you are using a VNC viewer that interprets mouse buttons in the same order as Mac OS X. (Apple Remote Desktop is a notable example.)

## Sharing Configurations

Sharing configurations govern the number of simultaneous connections your VNC server allows, and the degree of control you allow VNC viewers.



## Disable Remote Control of Keyboard and Mouse

Select this checkbox to disallow remote control of the VNC server. (VNC viewers are still able to connect to the VNC server and view the VNC server display.) Deselect this checkbox to restore control privileges.

## Disable Rich Clipboard Support (Vine Viewer Only)

The rich clipboard available between Vine Server and Vine Viewer allows the cut and paste exchange of rich text, images, files, and applications. Select this checkbox to allow only a standard plain text clipboard between Vine Server and Vine Viewer. Deselect this checkbox to allow rich clipboard support.

## Only Allow Local Connections (Require SSH)

Select this checkbox to deny any VNC connection that originates outside your local network and does not use Secure Shell data encryption.

If you select this option, you must modify your Mac OS X System Preferences to allow Remote Login, and open port 22 on your firewall or router. For more information, see Allowing SSH Connections in Chapter 3: Allowing VNC Connections.

## Advertise Server via Bonjour.

Select this checkbox to make your VNC server's availability known to VNC viewers on your local network.

The Bonjour networking technology in Mac OS X can offer your VNC server's contact information to VNC viewers on your local network. These VNC viewers automatically receive your VNC server's port and host name or IP address, but they still need to provide your password to open a VNC connection.

## Server Sharing

These settings determine whether you allow single or multiple simultaneous VNC connections.

### Always Share Server Between Clients

Select this option to allow multiple VNC viewers to connect to the VNC server at once.

### Let Clients Request Exclusive Access

Select this option to give VNC viewers the opportunity to request exclusive access to the VNC server. If the VNC server is configured to keep existing clients when a new client connects, the VNC viewer requesting exclusive access is denied. If the VNC server is not configured to keep existing clients when a new client connects, the VNC viewer requesting exclusive access connects to the VNC server and all other connections are closed.

### Allow Only One VNC Connection at a Time

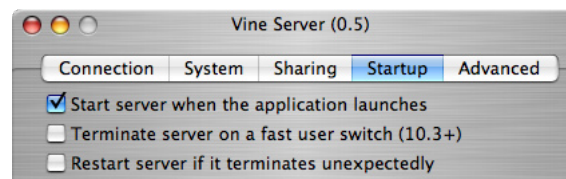
Select this option to allow only one VNC viewer at a time to connect to the VNC server. Deselect this checkbox to allow multiple VNC connections.

### Keep Existing Client If a New Client Tries to Connect

If you configure the VNC server to Never Share Display Between Clients, this setting determines which VNC connection is allowed when multiple VNC viewers attempt to connect. Select this checkbox to maintain the first VNC connection opened and deny subsequent VNC connections. Deselect this checkbox to close the existing VNC connection in favor of any new VNC connection.

## Startup Configurations

Startup Configurations control the conditions under which Vine Server automatically starts or stops the VNC server.



### Start Server When the Application Launches.

Select this checkbox to start running the VNC server automatically whenever you launch the Vine Server application. Deselect this checkbox to launch the Vine Server application without starting your VNC server.

Note: System servers always start running when you start up your computer, whether the Vine Server application is launched or not.

### Terminate Server on A Fast User Switch.

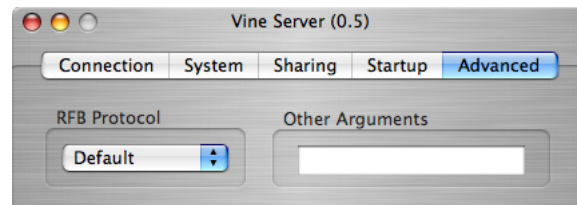
Select this checkbox to stop the server running on your current Mac user account when a different account is activated. For more information on Fast User Switching, see Multiple Desktop Sessions in Chapter 2: Using Vine Server.

## Restart Server if it Terminates Unexpectedly.

Select this checkbox to automatically restart your VNC server if it stops running due to an unexpected error. Deselect this checkbox to turn off automatic restarting.

## Advanced Configurations

Advanced configurations are not required for standard Vine Server activity. They may be useful to advanced users, or in rare troubleshooting situations.



### RFB Protocol

Remote framebuffer (RFB) is a communication protocol used by VNC. Most VNC viewers use the most recent version of RFB, 3.8.

If you are connecting to an older VNC viewer that does not support RFB 3.8, choose 3.7 or 3.3 in the RFB Protocol menu.

### Other Arguments

Other Arguments is a text field in which advanced users can enter certain exceptional commands. For a list of supported commands, see Appendix A: Command Line Arguments.

## Viewing Server Logs

The server log contains a list of a VNC server's technical activity in the Mac OS X Console application.

Standard users do not usually need this information, but it can be useful to system administrators and technical support personnel.

There are two ways to view a VNC server log:

- Click the View Log button on the bottom of the Configuration panel.
- In the File menu, choose File > Show VNC Server Log.

# APPENDIX: COMMAND LINE ARGUMENTS

This appendix contains a list of arguments that can be used in Vine Server's underlying command line application.

Argument	Description
-rfbport port	TCP port for RFB protocol (o=autodetect first open port 5900-5909.)
-rfbwait time	Max time in ms to wait for RFB client.
-rfbauth passwd-file	Use authentication on RFB protocol. (Use 'storepasswd' to create a password file.)
-deferupdate time	Time in ms to defer updates (default 40.)
-desktop name	VNC desktop name (default "MacOS X".)
-alwaysshared	Always treat new clients as shared.
-nevershared	Never treat new clients as shared.
-dontdisconnect	Don't disconnect existing clients when a new non-shared connection comes in (refuse new connection instead.)
-nodimming	Never allow the display to dim. (Default: display can dim, input undims.)
-maxdepth bits	Maximum allowed bit depth for connecting clients. (Default: bit depth of display.)
-allowsleep	Allow machine to sleep. (Default: sleep is disabled.)
-disableScreenSaver	Disable screen saver while users are connected. (Default: no, allow screen saver to engage.)
-swapButtons	Swap mouse buttons 2 & 3. (Default: YES.)
-dontswapButtons	Disable swap mouse buttons 2 & 3. (default: NO.)
-disableRemoteEvents	Ignore remote keyboard, mouse, and clipboard event. (Default: no, process them.)
-connectHost host	Host Name or IP of listening client to establishing a reverse connection.

Argument	Description
-connectPort port	TCP port of listening client to establishing a reverse connection. (Default: 5500.)
-nouupdates	Prevent registering for screen updates, for use with x2vnc or win2vnc.
-protocol <i>protocol</i>	Force a particular protocol version (eg 3.3.) (Default:RFB 003.008.)
-bigEndian	Force Big-Endian mode (PPC.) (Default: detect.)
-littleEndian	Force Little-Endian mode (INTEL.) (Default: detect.)
-localhost	If you use SSH and want to stop non-SSH connections from any other hosts. (Default: no, allow remote connections.)
-restartonuserswitch flag	For use on Panther 10.3 systems; this will cause the server to restart when a Fast User Switch occurs. (Default: no.)
<b>JAGUAR BUNDLE OPTIONS (10.2+):</b>	
-keyboardLoading flag	This BETA feature allows OSXvnc to look at the user's selected keyboard and map keystrokes using it. Disabling this returns OSXvnc to standard (U.S. Keyboard,) which may work better with Dead Keys. (Default: no), 10.2+ ONLY.
-pressModsForKeys flag	If OSXvnc finds the key you want, it will temporarily toggle the modifier keys to produce it.  This flag works well if you have different keyboards on the local and remote machines.  Only works if -keyboardLoading is on. (Default: no), 10.2+ ONLY.
-rendezvous flag	Allow OSXvnc to advertise VNC server using Rendezvous discovery services.  'VNC' will enable the service named VNC (For Eggplant & Chicken 2.02b.)  'Both' or '2' will enable the services named RFB and VNC. (Default: RFB:YES VNC:NO), 10.2+ ONLY.



Argument	Description
-ipv4	Listen for connections on IPv4 ONLY. (Default: Off). 10.2+ ONLY.
-ipv6	Listen for connections on IPv6 ONLY. (Default: Off). 10.2+ ONLY.

