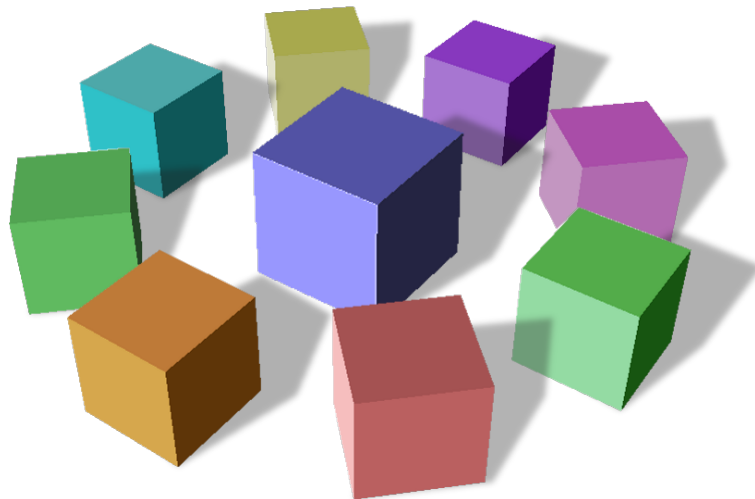


# **RemoteBox**

## **Version 1.6**

**Open Source VirtualBox Client with Remote Management**



# **Documentation**

# Table of Contents

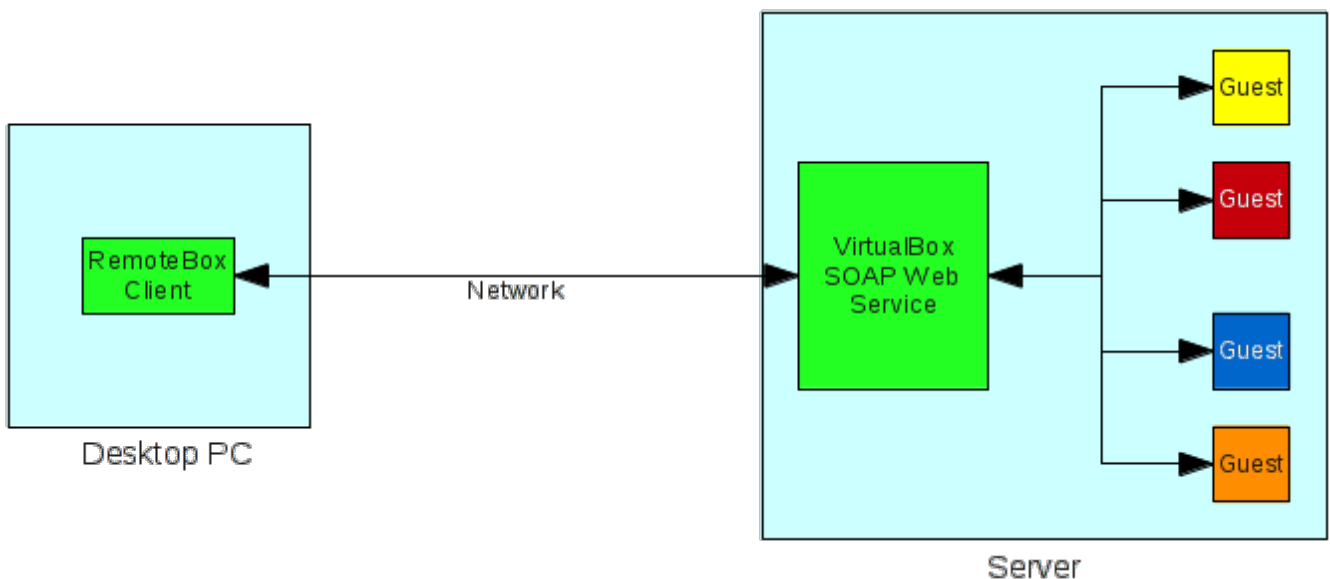
1 Introduction.....	4
2 RemoteBox Requirements.....	4
2.1 Fedora .....	5
2.2 Mandriva / Mageia.....	5
2.3 OpenSUSE.....	5
2.4 Ubuntu / Mint.....	5
2.5 Mac OS X.....	5
2.6 NetBSD.....	6
2.7 FreeBSD.....	6
2.8 Solaris / OpenSolaris / OpenIndiana.....	6
3 RemoteBox Installation.....	6
4 Configuring the Server.....	7
4.1 Linux Server Configuration.....	7
4.1.1 The VirtualBox Web Service.....	7
4.1.2 SSL for the VirtualBox Web Service.....	8
4.2 Windows Server Configuration.....	9
4.2.1 The VirtualBox Web Service.....	9
4.3 Solaris Server Configuration.....	9
4.3.1 The VirtualBox Web Service.....	9
4.4 Mac OS X Server Configuration.....	10
4.4.1 The VirtualBox Web Service.....	10
4.5 Disabling Web Service Authentication.....	11
5 Using RemoteBox.....	11
5.1 RemoteBox Preferences.....	11
5.1.1 Default Stop Action.....	11
5.1.2 Enable Heartbeat.....	11
5.1.3 Automatically Add Guest Additions to VMM.....	11
5.1.4 RDP Client.....	12
5.1.5 RDP Ports for New Guests.....	12
5.1.6 Open Guest's Display on Guest Start.....	12
5.1.7 Auto-Hint Resolution.....	12
5.2 Connecting to Server.....	12
5.2.1 URL.....	13
5.2.2 Username.....	13
5.2.3 Password.....	13
5.3 The Main Window.....	13
5.4 Remote Display.....	13
5.4.1 Remote Display with Sound.....	13
5.4.2 Remote Display with Clipboard Sharing.....	13
5.5 Creating New Guests.....	13
5.6 Virtual Media Manager.....	14
5.7 Installing Guest Additions.....	14
5.8 Hot Plugging and Unplugging vCPUs.....	14
6 FAQ & Troubleshooting.....	15
6.1.1 Does RemoteBox need to be running on the same operating system as VirtualBox?.....	15
6.1.2 Can I use RemoteBox to administer VirtualBox on the same machine?.....	15
6.1.3 Does RemoteBox run on Windows?.....	15
6.1.4 Does RemoteBox run on my favourite flavour of 'UNIX'?.....	15
6.1.5 How can I force set the remote display size for the guest?.....	15
6.1.6 Can I convert a hard disk image to another format?.....	15
6.1.7 Why is RemoteBox restricted to certain versions of VirtualBox?.....	15
6.1.8 Why are the mouse pointers are out of sync when using the Remote Display?.....	15
6.1.9 When I try to open the manual in RemoteBox, nothing is displayed.....	16

6.1.10 I run an older version of VirtualBox, what version of RemoteBox do I need?.....	16
6.1.11 I have a version of GTK older than 2.24. Can I still use RemoteBox?.....	16
6.1.12 I get an error message similar to the following:.....	16
6.1.13 I get an error message on the command line similar to the following "Incorrect parameter at <path>/SOAP/Lite.pm" line xxxx". What can I do?.....	17
6.1.14 I repeatedly get disconnected from the server, what's wrong?.....	17
6.1.15 What is the default port that the VirtualBox web service runs on?.....	17
7 Licence.....	17
8 Disclaimer.....	17
9 Contact.....	17

# 1 Introduction

VirtualBox is traditionally considered to be a virtualisation solution aimed at the desktop contrary to solutions such as KVM, Xen and VMWare ESX which are considered more server orientated. Whilst it is certainly possible to install VirtualBox on a server, it offers few remote management features beyond using the `vboxmanage` command line.

RemoteBox aims to fill this gap by providing a graphical VirtualBox client which is able to communicate with and manage a VirtualBox server installation. RemoteBox achieves this by using the `vboxwebsrv` feature of VirtualBox which allows its API to be accessed using a protocol called SOAP, even across a network. RemoteBox is similar in look and feel to the native VirtualBox interface and allows you to perform most of the same tasks, including accessing the display of guests – completely remotely. In addition, because both VirtualBox and RemoteBox are supported on many platforms you can for example manage a VirtualBox instance running on a Windows server using the RemoteBox client installed on FreeBSD.



## 2 RemoteBox Requirements

Requirements specific to operating systems are provided further in this document.

- Perl v5.8 or newer is recommended.
- `gtk2-perl`
- `SOAP::Lite` perl module v0.710.10 or newer
- An RDP client if you want to connect to the remote display of guests. The `rdesktop` client is enabled by default but other clients can be used
- VirtualBox 4.3.x installed on the server
- The Oracle Extension Pack should also be installed on the server. The pack may be obtained from <http://www.virtualbox.org/wiki/Downloads> Follow the instructions on that page to install them.

## 2.1 Fedora

Use your preferred package management tool to ensure the correct RPM packages are installed. For example, running yum as the root user:

```
yum -y install perl-Gtk2 perl-SOAP-Lite rdesktop
```

## 2.2 Mandriva / Mageia

Use your preferred package management tool to ensure the correct RPM packages are installed. For example, running urpmi as the root user:

```
urpmi perl-Gtk2 perl-SOAP-Lite rdesktop
```

**Warning:** Mandriva seems to ship unstable beta versions of Perl-Gtk2 which cause RemoteBox to behave or fail in unusual ways. Bug reports when running on Mandriva will not be accepted.

## 2.3 OpenSUSE

Use your preferred package management tool to ensure the correct RPM packages are installed. For example, running zypper as the root user:

```
zypper install perl-Gtk2 perl-SOAP-Lite rdesktop
```

## 2.4 Ubuntu / Mint

Use your preferred package management tool to ensure the correct DEB packages are installed. For example, running apt-get:

```
sudo apt-get install libgtk2-perl libsoap-lite-perl rdesktop
```

## 2.5 Mac OS X

Mac OS X typically does not come with the vast majority of dependencies for running complex UNIX graphical apps, so usually a 3<sup>rd</sup> party repository system is required. MacPorts (<http://www.macports.org>) is known to provide everything you need to get RemoteBox up and running. Follow the instructions on the MacPorts web site to get it installed and configured. The rest of these instructions will assume MacPorts is correctly installed.

You will also need to ensure that the X11 and XCode packages are installed on your Mac. If not, they can be found on your operating system DVD or downloaded for free from the Apple store.

Install the required MacPorts as follows from the command line:

```
sudo port install p5-gtk2 p5-soap-lite rdesktop
```

**Important:** You will need to modify the very first line in the remotebox file so that it uses the MacPorts implementation of Perl. Open the file in a text editor and replace the first line as follows:

```
#!/usr/bin/perl
```

**replace with**

```
#!/opt/local/bin/perl
```

## 2.6 NetBSD

Use your preferred package management tool to ensure the correct packages are installed. For example, running `pkgin` as root:

```
pkgin install p5-gtk2 p5-SOAP-Lite p5-libwww rdesktop
```

**Important:** You will need to modify the very first line in the `remotebox` file so that it uses NetBSD's implementation of Perl. Open the file in a text editor and replace the first line as follows:

```
#!/usr/bin/perl
```

**replace with**

```
#!/usr/pkg/bin/perl
```

## 2.7 FreeBSD

Use your preferred package management tool to ensure the correct packages are installed. For example with `pkg_add` as root:

```
pkg_add -r p5-Gtk2 p5-SOAP-Lite rdesktop
```

Alternatively, you can of course use the FreeBSD ports system.

## 2.8 Solaris / OpenSolaris / OpenIndiana

**Before** installing any dependencies, **you must** ensure you have the 'SUNWm1ib' standard Solaris package installed. If your edition of Solaris is new enough, this can be installed directly through Package Manager, otherwise it should be available on your install DVDs or downloadable from Oracle.

Solaris doesn't provide all of the required dependencies out of the box, so it is recommended that you use the OpenCSW (<http://www.opencsw.org>) repository to supply those dependencies. It is quite trivial to set up, especially on recent editions of Solaris. As OpenCSW uses a separate tree for installing its packages, it does not interfere or conflict with the standard system files and packages. Once OpenCSW is configured, please install the following packages as root using `pkgutil`, for example:

```
/opt/csw/bin/pkgutil -U
```

```
/opt/csw/bin/pkgutil -i pm_gtk2 pm_soaplite rdesktop
```

**Important:** You will need to modify the very first line in the `remotebox` file so that it uses OpenCSW's implementation of Perl. Open the file in a text editor and replace the first line as follows:

```
#!/usr/bin/perl
```

**replace with**

```
#!/opt/csw/bin/perl
```

## 3 RemoteBox Installation

Please ensure you have installed the dependencies mentioned in chapter 2 RemoteBox Requirements and consulted the relevant section for your operating system. Assuming you have unpacked the tarball, simply change into the directory and run `remotebox` as follows:

```
./remotebox
```

You should be presented with the RemoteBox window. If not, examine the error messages and ensure you have the relevant dependencies installed. The RemoteBox directory can be placed anywhere you prefer or renamed providing you retain its structure.

## 4 Configuring the Server

VirtualBox and the Oracle Extension Pack should be installed on the server. Instructions are available on the VirtualBox website if you are not sure how to do this. The extension pack provides features such as remote desktop display which RemoteBox requires in order to be fully functional.

You are not required to have VirtualBox installed on the client machine. The client and server are not required to be running the same operating system. For example, RemoteBox could be running on a Linux client, connecting to VirtualBox on a Windows server.

Configuring the server primarily involves setting up the VirtualBox Web Service which provides a means for communication with VirtualBox. It's not a service that is intended to be accessed via a web browser, but a service for use by VirtualBox clients such as RemoteBox. The underlying protocol is called SOAP, which is built upon HTTP but familiarity with these protocols is not required.

You should decide which user the web service should run as and if necessary create a new user on the server specifically for this purpose. This is important because whatever user the web service runs as, decides whose virtual machines will be accessible through the web service. For example, if the user 'john' and the user 'mark' have virtual machines, then only john's virtual machines will be accessible if you run the web service as 'john', **regardless of who you authenticate as.**

For the purposes of this documentation, we will assume that you have created a user on your server called *virtual* and their primary group is *vboxusers*. If you do not know how to correctly create a new user for your operating system, consult its documentation. We will assume the name of the server is *'myserver.example.com'* and it has an IP address of *192.168.1.10*. If your server is running a firewall, then you will need to permit incoming connections to the default port of 18083.

### 4.1 Linux Server Configuration

#### 4.1.1 The VirtualBox Web Service

Please read the section 4. Configuring the Server, before continuing. Unless stated otherwise, these steps should be performed as the *root* user on the server.

- Edit or create the following configuration file using your preferred text editor  
`/etc/default/virtualbox`
- Add the following contents to the text file, adjusting the parameters as appropriate for your server. You may also use the IP address instead of the hostname if so desired.

```
VBOXWEB_USER="virtual"
VBOXWEB_TIMEOUT=0
VBOXWEB_LOGFILE="/var/log/vboxweb-service.log"
VBOXWEB_HOST="myserver.example.com"
```

- Initialise and set the ownership of the log file. **If the log file is missing or has incorrect ownership, the web service will fail to start.**

```
touch /var/log/vboxweb-service.log
chown virtual:vboxusers /var/log/vboxweb-service.log
```

- Enable the service to automatically start on boot. This step varies between Linux distributions but for Fedora you would use:

```
systemctl enable vboxweb-service
```

- Either reboot your server or manually start the service by doing:

```
systemctl start vboxweb-service
```

If the service fails to start, revisit the configuration steps to ensure nothing is missing or reboot the server to ensure all required services are started. Checking the contents of `/var/log/vboxweb.service.log` may provide you with additional information. You should now be able to connect to the server using RemoteBox on the client.

### 4.1.2 SSL for the VirtualBox Web Service

Configuring the server to accept SSL connections is an optional feature to improve security. The connection is encrypted so that passwords are not sent in the clear across the network. Using SSL however is **significantly slower** because of the encryption overhead and you will notice an increase in lag with RemoteBox.

The example which follows uses a self-signed certificate which should be sufficient for most people's needs.

- Make a directory where you wish the certificates and server keys to be stored. In these examples, as we're running the web service as the user *virtual*, we will create a directory in that user's homespace.

```
mkdir /home/virtual/vboxwebcerts
```

- Generate the server's RSA private key for use with the web service. You will be prompted for a password for the key. Our example will assume *mypassword* as the password.

```
cd /home/virtual/vboxwebcerts
```

```
openssl genrsa -des3 -out vboxweb.key 1024
```

- Generate the certificate signing request. You will be prompted for various X.509 attributes for the certificate. Most of them are purely informational, so fill them out as accurately as you see fit, however you should ensure that the '*Common Name*' attribute is set to either the fully-qualified hostname of your server, or its IP address. You can the '*Challenge Password*' empty unless you feel you need it.

```
cd /home/virtual/vboxwebcerts
```

```
openssl req -new -key vboxweb.key -out vboxweb.csr
```

- Generate the self-signed certificate. This example will generate a certificate which is valid for 365 days but you can set this value as you see fit. You will be prompted for the password you used to generate the key.

```
cd /home/virtual/vboxwebcerts
```

```
openssl x509 -req -days 365 -in vboxweb.csr -signkey vboxweb.key -out vboxweb.crt
```

- The VirtualBox web service expects both the private key and the certificate to be in the same file. So combine them as follows:

```
cd /home/virtual/vboxwebcerts
```

```
cat vboxweb.key vboxweb.crt > vboxweb-both.crt
```

- Create a text file using your preferred text editor and enter the password you chose and save the file at `/home/virtual/vboxweb.pwd`. This file should contain nothing but the password on the first line and will be use by the web service to unlock the private key.

- Fix up the permissions so that the files are more secure and less prone to prying eyes.

```
chown virtual:vboxusers /home/virtual/vboxwebcerts/*
chmod 0600 /home/virtual/vboxwebcerts/*
```

- Edit the web service configuration file located in `/etc/default/virtualbox` and add the following parameters:

```
VBOXWEB_SSL_PASSWORDFILE="/home/virtual/vboxwebcerts/vboxweb.pwd"
VBOXWEB_SSL_KEYFILE="/home/virtual/vboxwebcerts/vboxweb-both.crt"
```

- Finally, restart the web service. On most distributions, this is done as follows:

```
systemctl restart vboxweb-service
```

When connecting to the server from RemoteBox, you should now prefix the URL with `https://`. Also note that non-SSL connections will not be available.

## 4.2 Windows Server Configuration

### 4.2.1 The VirtualBox Web Service

Please read the section 4. Configuring the Server, before continuing. Unfortunately the VirtualBox web service does not integrate with Windows as a standard system service, unlike the other supported operating systems. It must be manually started each time the server is booted. Assuming you are using a specific user called *'virtual'* then log into the server as *virtual* and perform the following commands from the DOS or PowerShell.

Change to your VirtualBox box installation directory. The default location is:

```
cd "C:\Program Files\Oracle\VirtualBox"
```

Then run the VirtualBox web service

```
vboxwebsrv -t0 -H myserver.example.com
```

You can also use the IP address of your server instead of the hostname. You should now be able to connect to the server using the RemoteBox client.

## 4.3 Solaris Server Configuration

### 4.3.1 The VirtualBox Web Service

Please read the section 4. Configuring the Server, before continuing. Unless stated otherwise, these steps should be performed as the *root* user.

- Configure the web service to run as the user *virtual*.

```
svccfg -s svc:/application/virtualbox/web-service:default setprop config/user=virtual
```

- Add the timeout property to the web service.

```
svccfg -s svc:/application/virtualbox/web-service:default setprop config/timeout=integer: 0
```

- Add the log file property to the web service

```
svccfg -s webservice:default setprop config/logfile=asString: /var/log/vboxwebservice.log
```

- Set the hostname. The IP address may also be used instead.

```
svccfg -s svc:/application/virtualbox/webservice:default setprop config/host=myserver.example.com
```

- Tell SMF to commit the changes to the service

```
svcadm refresh svc:/application/virtualbox/webservice:default
```

- Initialise and set the ownership of the log file. **If the log file is missing or incorrectly owned then the web service may not start**

```
touch /var/log/vboxwebservice.log
```

```
chown virtual:vboxusers /var/log/vboxwebservice.log
```

- Start the web service and enable it on boot

```
svcadm enable svc:/application/virtualbox/webservice:default
```

If the service fails to start, revisit the configuration steps to ensure nothing is missing. Checking the contents of `/var/log/vboxwebservice.log` or the output of `svcs -x svc:/application/virtualbox/webservice:default` may provide you with additional information. You should now be able to connect to the server using RemoteBox on the client.

## 4.4 Mac OS X Server Configuration

### 4.4.1 The VirtualBox Web Service

Please read the section 4. Configuring the Server, before continuing. A standard plist file is included with VirtualBox which is usually located in:

```
$HOME/Library/LaunchAgents/org.virtualbox.vboxwebsrv.plist
```

Edit the file with a text editor and change the Disabled key from true to false. The service can then be started by typing:

```
launchctl load ~/Library/LaunchAgents/org.virtualbox.vboxwebsrv.plist
```

## 4.5 Disabling Web Service Authentication

Disabling authentication to the web service is not recommended because it will effectively allow anybody to access the virtual machines, however it may be useful for debugging purposes particularly if you are experiencing trouble logging in. To disable authentication, execute the following command on the server as the user that the web service runs as:

```
vboxmanage setproperty webservauthlibrary null
```

When connecting with RemoteBox simply leave the username and password options blank.

## 5 Using RemoteBox

This section describes some basic principles of using RemoteBox, with emphasis on where RemoteBox differs significantly from VirtualBox. This section does not go into great depth because using RemoteBox should be reasonably familiar to anybody that has used VirtualBox's native interface. RemoteBox makes heavy use of tool-tips to describe what the options are and do so you're highly encouraged to read them.

RemoteBox is essentially a web client application. Almost everything you do with RemoteBox requires communicating with the server, over the network. If your network is poorly configured and unreliable then RemoteBox will not perform well either.

### 5.1 RemoteBox Preferences

Accessible from the '*File->RemoteBox Preferences*' menu. These preferences should not to be confused with the VirtualBox preferences as this dialog configures settings specifically for the RemoteBox client.

#### 5.1.1 Default Stop Action

This defines what action RemoteBox takes when the “*Stop*” button is pressed. Please note that whatever option you choose, all actions are still available in the sub-menu next to the “*Stop*” button. The options are described as follows:

**Instant Power Off:** Equivalent to removing the power from virtual machine. Use with care.

**ACPI Shutdown:** An ACPI request is sent to the guest to power it off cleanly. Exact behaviour is operating system dependent.

**Save Guest State:** Saves the execution state of the guest. This is approximately equivalent to “Hibernating” but does not require any operating system support.

The default is 'Instant Power Off'. Please note, the recommended way to shutdown a guest is from within the guest's operating system itself.

#### 5.1.2 Enable Heartbeat

If enabled, then RemoteBox will send a heartbeat to the VirtualBox web service every 60 seconds to monitor the connection status and keep the connection alive. **Disabling this option is not recommended** without fully understanding the consequences. The default is enabled.

#### 5.1.3 Automatically Add Guest Additions to VMM

If enabled, when RemoteBox connects to a server it will automatically add the guest additions ISO to the Virtual Media Manager so that it's available for attaching to guests. The default is enabled.

### 5.1.4 RDP Client

Configures the RDP client that RemoteBox should use when opening the remote display of a guest. By default, RemoteBox uses rdesktop which should be installed on the client machine.

You can also use alternative clients such as freerdp/xfreerdp or any other client which accepts command line parameters.

RemoteBox uses special variables which are substituted when the RDP client is launched and these should be used where your RDP client expects to see options such as the hostname or port number.

The supported variables are:

%h	Will be substituted with the hostname of the VirtualBox server
%n	Will be substituted with the guest's name (useful for setting the rdesktop window title)
%o	Will be substituted with the guest's operating system
%p	Will be substituted with the RDP port number
%P	Will be substituted with the user's password used to connect to VirtualBox
%U	Will be substituted with the username used to connect to VirtualBox

The default value is:

```
rdesktop -r sound:local -r clipboard:PRIMARYCLIPBOARD -T "%n - RemoteBox" %h:%p
```

If you do not want to enable sound support or your version of rdesktop is not compiled with sound support, then remove the option '-r sound:local'. Likewise, if you want to remove clipboard support then remove the option '-r clipboard:PRIMARYCLIPBOARD'

### 5.1.5 RDP Ports for New Guests

When RemoteBox creates a new guest, it automatically enables the RDP functionality for the guest and assigns a range of RDP ports that the guest can use. The reason why a range should be specified is because when each guest starts it must use a unique port number for its RDP service. If a port number is already in use by another process or guest, then VirtualBox will automatically assign the next available port in the range. If your server is running a firewall then these ports should be open as appropriate. The default value is:

3389-4389

### 5.1.6 Open Guest's Display on Guest Start

If enabled, then RemoteBox will automatically open the remote display of the guest when you power on or resume a guest. If disabled then you will manually need to open the remote display by pressing the 'Remote Display' button. The default is enabled.

### 5.1.7 Auto-Hint Resolution

When a guest's display is opened, automatically send the requested display resolution hint. A display hint tries to keep the guest's display at the specified resolution.

## 5.2 Connecting to Server

In order to administer the virtual machines and guests, you should connect to the server running the VirtualBox web service. If you experience problems logging on, consider disabling authentication to the web server for testing purposes. Details on how to do this are described elsewhere in this document. Pressing the 'Connect' button will open a dialog window.

### 5.2.1 URL

The URL of the server to connect to. This is generally of the form `http://<server>:<port>`. If the port number is omitted it will assume the default of 18083. For example:

`http://myserver.home.lan:18083`

or

`http://192.168.1.5:18083`

### 5.2.2 Username

The username that the VirtualBox web service is running as. If you have authentication disabled, then you can leave it empty.

### 5.2.3 Password

The password of the user that the VirtualBox web service is running as. If you have authentication disabled you can leave it empty.

## 5.3 The Main Window

The main window should be familiar to users of VirtualBox. It's worth mentioning however that the status of the guests are not updated in real-time. To see changes in a guest's status which has occurred outside of RemoteBox (e.g. another process powered on a guest) you can use the *'Refresh'* button.

## 5.4 Remote Display

RemoteBox uses the RDP feature of VirtualBox to show the guest's display. To use this option, each guest should be configured with the RDP server enabled. If a guest was created through RemoteBox it will automatically have this feature enabled. Several aspects of how RDP is used can be configured in the RemoteBox preferences.

### 5.4.1 Remote Display with Sound

Remote sound support is also possible and is enabled by default in RemoteBox with the `rdesktop` client. In other words, when opening the remote display of a guest you can also hear its audio.

For this to work, the guest must have audio support enabled in its settings. When enabling audio support in the guest is enabled, its recommended that you set the *'Host Audio Driver'* to be *'Dummy Audio Driver'* otherwise the guest will try to output the sound through the server's own sound device.

### 5.4.2 Remote Display with Clipboard Sharing

Clipboard sharing (ie copy and paste with the guest and the client) is also possible and is enabled by default in RemoteBox with the `rdesktop` client.

For this to work fully, the guest must have *'Shared Clipboard'* set to *'Bidirectional'* in its settings. The guest must also have the Guest Additions installed and running.

## 5.5 Creating New Guests

Creating guests is similar to VirtualBox except that RemoteBox will automatically enable the RDP server of the guest. This also allows the *'Remote Display'* option to work in RemoteBox.

## 5.6 Virtual Media Manager

All media is from the reference point of the server and not the RemoteBox client, so when adding additional media such as CD/DVD images, expect to see the file system layout of the server and not your client machine.

## 5.7 Installing Guest Additions

RemoteBox will automatically add the `VBoxGuestAdditions.iso` to the Virtual Media Manager (VMM) when it connects to the server. To install the guest additions, just attach this ISO to the virtual CD/DVD drive of the guest as you would with any other ISO and install as normal.

## 5.8 Hot Plugging and Unplugging vCPUs

RemoteBox has the ability to hot plug and unplug vCPUs from a guest, even while it is running. This should be considered an experimental feature for the moment. There are a number of pre-requisites which must be met in order for this to work correctly. They are listed as follows:

- The guest must be using hardware virtualisation which is usually the default anyway.  
*Edit Settings->System->Acceleration->Enable VT-x/AMD-V*
- The guest must have CPU hot plugging enabled.  
*Edit Settings->System->Processor->Allow CPU Hot Plugging*
- Most operating systems will require I/O APIC to be enabled. Due to the limitations of Windows, this option should not be changed for a guest running Windows. Windows requires this option to be set, **before** installation. Other operating systems are not affected.  
*Edit Settings->System->Motherboard->Enable IO APIC*
- Lastly, the guest operating system itself must support CPU hot plugging and/or hot unplugging.

The exact process for hot plugging and unplugging a CPU is operating system dependant. Many versions of UNIX, including Linux support hot plugging and unplugging CPUs. Windows has very limited support for CPU hot plugging and no version of Windows supports CPU hot unplugging. You should consult the documentation for the guest operating system to find the exact procedure and its support status. A general set of guidelines follows.

The general process for hot plugging a vCPU is:

- Enable the vCPU in RemoteBox
- At this point, some operating systems may automatically detect it and bring it online, others will require you to bring the CPU online manually.

The generally process for hot unplugging a vCPU is:

- Disable or offline the vCPU in the guest **first**.
- Disable the vCPU in RemoteBox

## 6 FAQ & Troubleshooting

When troubleshooting problems with RemoteBox, launching it from the command line may provide additional debugging information. Consulting the web service logs and the guest logs is also useful.

### **6.1.1 Does RemoteBox need to be running on the same operating system as VirtualBox?**

No, RemoteBox and VirtualBox can run on different operating systems. For example, one can install RemoteBox on Linux but administer a Windows installation of VirtualBox.

### **6.1.2 Can I use RemoteBox to administer VirtualBox on the same machine?**

Yes. Just ensure the VirtualBox web service is running on the same machine and by default connect to <http://localhost:18083> with RemoteBox

### **6.1.3 Does RemoteBox run on Windows?**

The short answer is no. I'm not aware of any Perl distribution for Windows that supports all of the modules required to run RemoteBox. If you do get RemoteBox to run on Windows, please let me know.

### **6.1.4 Does RemoteBox run on my favourite flavour of 'UNIX'?**

It should be possible to get RemoteBox to run on any reasonably modern flavour or UNIX. However you may need to manually compile and install the required dependencies yourself.

### **6.1.5 How can I force set the remote display size for the guest?**

Use the “Set Video Hint” option in the machine menu and choose a pre-defined resolution or choose your own. Providing the guest has the guest additions installed and enough Video RAM configured to support the resolution it should switch resolution. This may also depend somewhat on how compliant your RDP client is but it works fine with rdesktop

### **6.1.6 Can I convert a hard disk image to another format?**

Yes. Open the VMM and ensure the “Hard Disk” tab is select. Choose the hard disk to want to copy and convert. Select the “Copy & Convert” option and select the format you require. You will be prompted where you would like to save the new image. This operation will not alter the source image.

### **6.1.7 Why is RemoteBox restricted to certain versions of VirtualBox?**

VirtualBox versions are generally of the form Major.Minor.Micro (e.g. 4.2.1). VirtualBox only guarantees API compatibility between versions if it is the Micro suffix which has changed. For example 4.2.1 is compatible with 4.2.0, but 4.2.1 is not entirely compatible with 4.1.0. In order to reduce code complexity RemoteBox only targets the latest version of the API at the time of release. It will warn you, if you use an incompatible version but you may experience problems if you choose to continue.

### **6.1.8 Why are the mouse pointers are out of sync when using the Remote Display?**

To enable mouse synchronisation, guest additions should be installed and running within the guest. If there are no guest additions available for the operating system, then try changing the mouse type to “USB Tablet” and ensure USB support is enabled.

### 6.1.9 When I try to open the manual in RemoteBox, nothing is displayed...

RemoteBox requires the `xdg-open` command which is part of the `xdg-utils` package. This package is usually installed by default on most distributions, however if it is not installed, please install it along with an appropriate PDF viewer.

### 6.1.10 I run an older version of VirtualBox, what version of RemoteBox do I need?

Old versions of RemoteBox are downloadable from the website but are no longer supported or maintained. See the table below for reference.

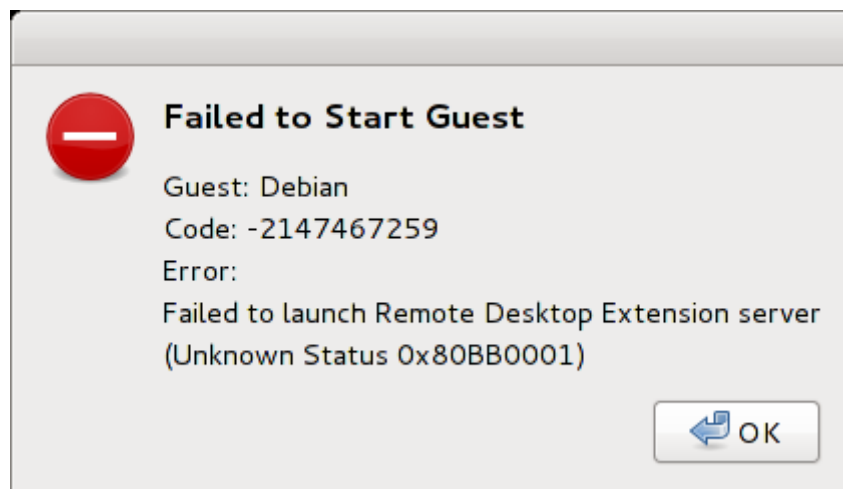
RemoteBox Version	Required VirtualBox Version
v1.6	v4.3.x
v1.4 to v1.5	v4.2.x
v1.0 to v1.3	v4.1.x
v0.6 to v0.9	v4.0.x
v0.1 to v0.5	v3.2.x
NONE	v3.1.x and earlier editions

### 6.1.11 I have a version of GTK older than 2.24. Can I still use RemoteBox?

Old versions of RemoteBox are downloadable from the website but are no longer supported or maintained. See the table below for reference.

RemoteBox Version	Minimum GTK Version
v1.6 +	v2.24
v1.2 - v1.5	v2.22
v1.1 (and earlier)	v2.16

### 6.1.12 I get an error message similar to the following:



You do not have the Oracle Extension Pack installed or you have an old version of the pack installed. Please download the appropriate Oracle Extension Pack for your version of VirtualBox.

### **6.1.13 I get an error message on the command line similar to the following “Incorrect parameter at <path>/SOAP/Lite.pm” line xxxx”. What can I do?**

This seems to be a bug in your particular perl-Gtk2 implementation. If possible upgrade your version of perl-Gtk2. You can also work around this by editing the SOAP/Lite.pm file and changing the line from:

```
die "Incorrect parameter" unless $itself =~/^\d$/;

replace with

die "Incorrect parameter" unless $itself =~/^\d*$/;
```

(Note the addition of the asterisk \*)

### **6.1.14 I repeatedly get disconnected from the server, what's wrong?**

Unless you have a particularly bad network, you probably either have a low timeout configured on the web service, or you have disabled the heartbeat in RemoteBox. Please ensure the heartbeat is enabled in RemoteBox (*File->Preferences->Heartbeat*). Ensure that the web service has timeouts disabled or is not configured lower than 60 seconds.

### **6.1.15 What is the default port that the VirtualBox web service runs on?**

The VirtualBox web service runs on port 18083 unless configured otherwise

## **7 Licence**

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## **8 Disclaimer**

For the full details, please see the “NO WARRANTY” section of the GPL. In short, you are entirely and wholly responsible for all consequences resulting from your use, or misuse of RemoteBox. This includes, but is not limited to, loss or damage to data, hardware, money and all consequences that arise as a result.

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## **9 Contact**

If you have any queries or bug reports regarding RemoteBox, please send an email to:

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