

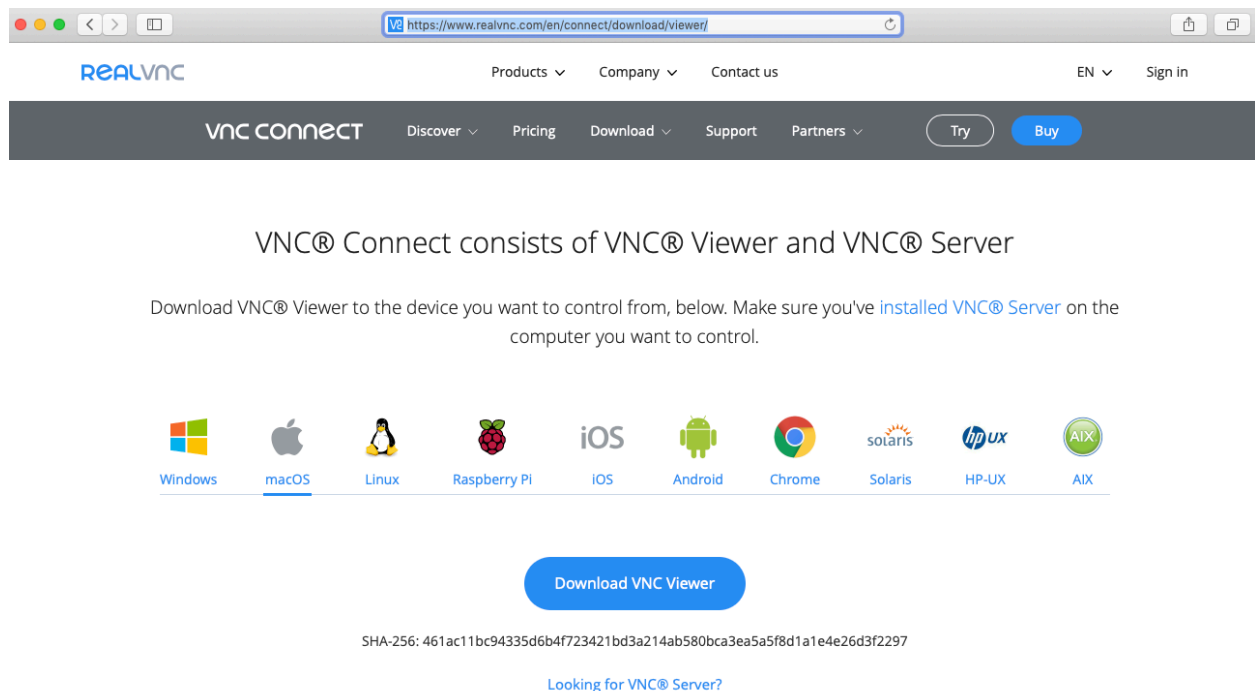
Downloading and Installation of VNC Viewer

Below are instructions for downloading and installing the VNC Viewer (for use with NMRBox) for both Apple (MacOs) and LINUX operating systems.

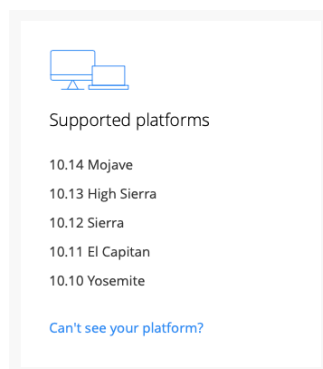
MacOs

The link for the download site for the VNC viewer is below:

<https://www.realvnc.com/en/connect/download/viewer/>



Choose 'macOS', then click the 'Download VNC Viewer' button. **Put the downloaded file ("VNC-Viewer-X.XX.XXXX-MacOSX-x86_64.dmg") on your desktop.**



At the bottom of the VNC download page, on the left, you'll see a list of MacOs operating systems that this version of the VNC viewer is compatible with. If your operating system is older, you can find an older version of the VNC viewer that is compatible with it at the following link:

<https://help.realvnc.com/hc/en-us/articles/360002317877>

*****UNIX TIP*****

You'll notice on the download page a long character string beginning with 'SHA-256';

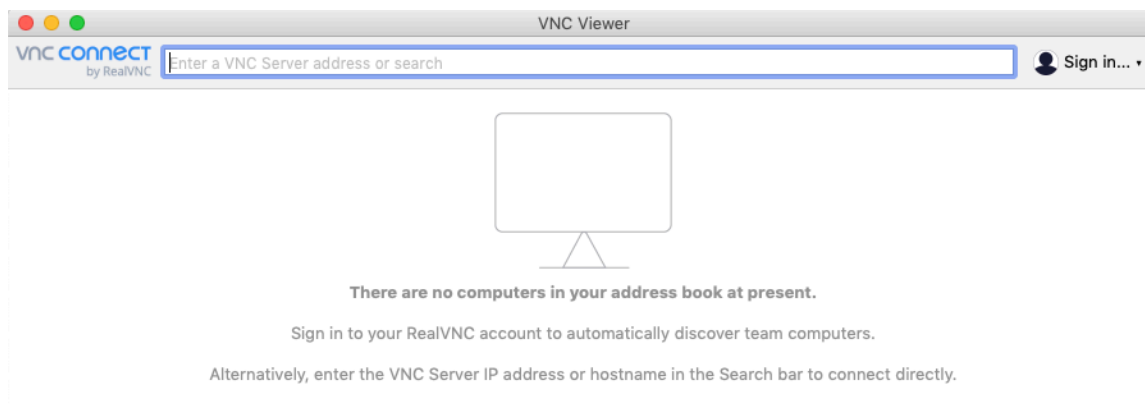
SHA-256: 461ac11bc94335d6b4f723421bd3a214ab580bca3ea5a5f8d1a1e4e26d3f2297

This is known as a "SHA256 checksum". It allows you to check the authenticity and integrity of the file you just downloaded. It is generally a good idea to do this if you have the checksum string. In order to do this, first open a 'terminal' window, use 'cd' to go to the Desktop directory. Then enter the 'shasum' command as shown below for the user 'harvey'. If the command returns the identical number as shown above (as it does in the example below), then the file is (probably) authentic, and it has (most likely) not been altered by downloading.

```
Desktop — -bash — 127x31
Last login: Tue Jan  7 09:03:21 on ttys001
roadrunners-MacBook-Pro:~ harvey$ pwd
/Users/harvey
roadrunners-MacBook-Pro:~ harvey$ cd /Users/harvey/Desktop
roadrunners-MacBook-Pro:Desktop harvey$ pwd
/Users/harvey/Desktop
roadrunners-MacBook-Pro:Desktop harvey$ shasum -a 256 /Users/harvey/Desktop/VNC-Viewer-6.19.1115-MacOSX-x86_64.dmg
461ac11bc94335d6b4f723421bd3a214ab580bca3ea5a5f8d1a1e4e26d3f2297  /Users/harvey/Desktop/VNC-Viewer-6.19.1115-MacOSX-x86_64.dmg
roadrunners-MacBook-Pro:Desktop harvey$
```

Double-click the "VNC-Viewer-X.XX.XXXX-MacOSX-x86_64.dmg" file on your desktop. You will be prompted to move the 'VNC Viewer.app' into the 'Applications' folder. You can do that if you are the administrator of the computer or have administrator privileges. However, you do not need to install it in 'Applications'. You can simply move 'VNC Viewer.app' onto the desktop. Or you can put it in any other folder. You can then move the icon to your 'Dock' if you like.

To run VNC viewer, double-click on the 'VNC Viewer.app' (or click the icon on your Dock, if you put it there). You should see the window below:

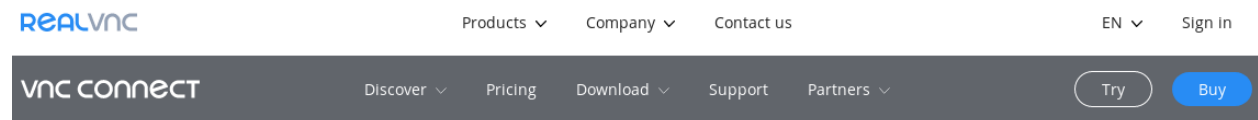


You can enter the 'NMRBox' server address in the window (once your account is approved and you know the address), which will allow you to login to the NMRBox server.

LINUX

The link for the download site for the VNC viewer is below:

<https://www.realvnc.com/en/connect/download/viewer/>



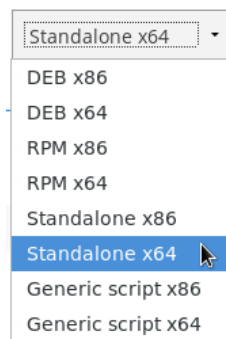
VNC® Connect consists of VNC® Viewer and VNC® Server

Download VNC® Viewer to the device you want to control from, below. Make sure you've [installed VNC® Server](#) on the computer you want to control.

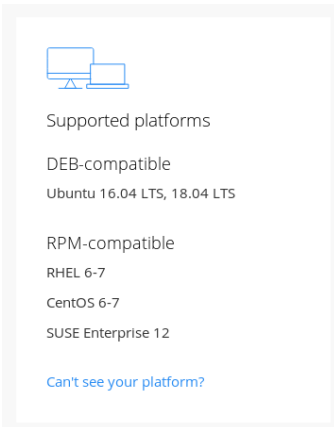


Download VNC Viewer

SHA-256: 0a4476bd8d531a5b62c3d839b43ba85b1edad447a1ab9392b8115a7cdd21d378



Choose the 'Linux' option. At the bottom of the screen you'll see a dropdown menu. Click on this and you'll see a variety of options. The 'x86' and 'x64' options are for 32-bit and 64-bit operating systems, respectively. The DEB and RPM options are for Debian compatible operating systems (Debian, Ubuntu), whereas the RPM options are for RPM compatible operating systems (RHEL, i.e. RedHat, CentOS, SUSE). If you are the computer administrator, or have administrator privileges, then may want to install one of the DEB or RPM options (for all users on the computer). If not, you'll want to select a 'Standalone' option. For this tutorial, we are using a 64 bit system (CentOS 6.7), and we'll use the 'Standalone x64' option. Select this option and click the 'Download' button. If you get an option to 'save' or 'open' the file, choose 'save'. **Once you download the file (VNC-Viewer-X.XX.XXXX-Linux-X64), put it on your desktop.**



At the bottom of the VNC download page, on the left, you'll see a list of LINUX operating systems that this version of the VNC viewer is compatible with. If your operating system is older, you can find an older version of the VNC viewer that is compatible with it at the following link:

<https://help.realvnc.com/hc/en-us/articles/360002317877>

*****UNIX TIP*****

You'll notice on the download page a long character string beginning with 'SHA-256';

SHA-256: 0a4476bd8d531a5b62c3d839b43ba85b1edad447a1ab9392b8115a7cdd21d378

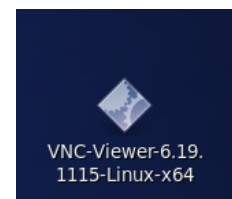
This is known as a "SHA256 checksum". It allows you to check the authenticity and integrity of the file you just downloaded. It is generally a good idea to do this if you have the checksum string. In order to do this, first open a 'terminal' window, use 'cd' to go to the Desktop directory. Then enter the 'shasum' command as shown below for the user 'ragnar'. If the command returns the identical number as shown above (as it does in the example below), then the file is (probably) authentic, and it has (most likely) not been altered by downloading.

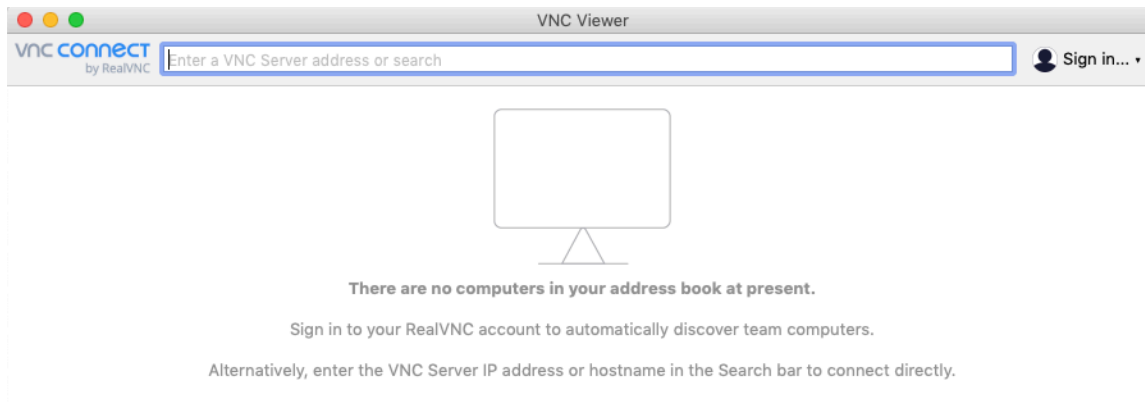
```

ragnar@viking:~/Desktop
File Edit View Search Terminal Help
[ragnar@viking ~]$ pwd
/home/ragnar
[ragnar@viking ~]$ cd Desktop
[ragnar@viking Desktop]$ pwd
/home/ragnar/Desktop
[ragnar@viking Desktop]$ ls V*
VNC-Viewer-6.19.1115-Linux-x64
[ragnar@viking Desktop]$ sha256sum /home/ragnar/Desktop/VNC-Viewer-6.19.1115-Linux-x64
0a4476bd8d531a5b62c3d839b43ba85b1edad447a1ab9392b8115a7cdd21d378 /home/ragnar/Desktop/VNC-Viewer-6.19.1115-Linux-x64
[ragnar@viking Desktop]$

```

The 'Standalone' file 'VNC-Viewer-X.XX.XXXX-Linux-X64' that you downloaded and is on your desktop is an executable program. You should be able to double-click the icon, and the program should start. You should see the window below. You can enter the 'NMRBox' server address in the window (once your account is approved and you know the address).





However, it is not uncommon for the file “permissions” to be set incorrectly, so that the program will not start when you double-click the icon (and you’ll get some sort of error message).

In this case, it is necessary to set the file permissions correctly. Below, this is done with the ‘chmod’ command. With the ‘VNC-Viewer-X.XX.XXXX-Linux-X64’ file on your desktop, use ‘cd’ to go to the desktop folder/directory. Use the ‘ls -al V*’ to show the permissions (the string of r, w, x, and dash characters). Notice in the example below there are no ‘x’ characters in the string. This means that the file cannot be ‘executed’ (i.e. the program cannot be run). In order to change that, you will need to enter the ‘chmod’ command, with the ‘755’ option, as shown below. Using ‘ls -al V*’ again shows that there are now ‘x’ characters in the string, so the file is now ‘executable’.

```
ragnar@vikings:~/Desktop
File Edit View Search Terminal Help
[ragnar@vikings ~]$ pwd
/home/ragnar
[ragnar@vikings ~]$ cd /home/ragnar/Desktop
[ragnar@vikings Desktop]$ pwd
/home/ragnar/Desktop
[ragnar@vikings Desktop]$ ls V*
VNC-Viewer-6.19.1115-Linux-x64
[ragnar@vikings Desktop]$ ls -al V*
-rw-r--r--. 1 ragnar jlugrp 7885312 Jan  7 16:57 VNC-Viewer-6.19.1115-Linux-x64
[ragnar@vikings Desktop]$ chmod 755 VNC-Viewer-6.19.1115-Linux-x64
[ragnar@vikings Desktop]$ ls -al V*
-rwxr-xr-x. 1 ragnar jlugrp 7885312 Jan  7 16:57 VNC-Viewer-6.19.1115-Linux-x64
[ragnar@vikings Desktop]$
```

Now, Double-click the VNC icon on your desktop and it should run.

Then, you can enter the ‘NMRBox’ server address in the VNC window (once your account is approved and you know the address), which will allow you to login to the NMRBox server.