Lick Remote Observing Virtual Machine

1 Introduction

For an introduction and overview of the Lick Remote software see:

https://mthamilton.ucolick.org/techdocs/remoteObs/homeobserving/intro/

The Lick Remote Observing software runs on MacOS or Linux. Some of our observers may not have access to machines running either of these OS, but the remote observing software does not run natively on Windows. Some teams have had success using e.g. Windows Subsystem for Linux, but we are not aware of the details behind their setups.

Instead, as a fallback option this virtual machine was created by Jon Rees to allow people to run the Lick Remote software on Windows machines. The virtual machine runs Ubuntu (23.04), and has the Lick Remote software pre-installed and ready to run.

2 Pre-requisites

Most of the software pre-requisites exist within the virtual machine.

You will need software to run the virtual machine. Some examples include:

- VMWare Workstation (https://www.vmware.com/products/workstation-player.html).
- VirtualBox(https://www.virtualbox.org/wiki/Downloads)

Note that some users have had issues with VirtualBox not working if Hyper-V was running on Windows 10. VMWare Workstation does not have these issues.

Finally you'll need to download a copy of the virtual machine. You can find the virtual machine here

3 Using the Virtual Machine

After downloading the virtual machine file to somewhere sensible you'll need to import it in to you virtualisation software of choice. In VMWare this is done by going to File->Open and selecting the LickHomeObserving.ova file you downloaded.

After importing the virtual machine file (this may take some time) you may want to change the settings. The virtual machine was created with 4GB of RAM, and a 30GB hard drive size. This should be plenty for the remote observing software. If your Windows host has a decent amount of RAM you can increase the amount for the virtual machine (but you're typically advised to keep it to ~50% of your host RAM) which will allow you to do more in the virtual machine.

When you're ready, start the virtual machine (VMWare has a 'Power on this virtual machine' option). After starting up you should be presented with the login page. The default username is: user To obtain the password, please reach out to the Support Astronomers.

You should now see the Ubuntu desktop. You can open a Terminal window by clicking the shortcut at the left.

Now you need to connect to the Lick VPN. Note that the remote observing software checks for a VPN connection, so the connection will need to be made here in the virtual machine, not from your Windows host.

3.1 Connecting to Lick

You should have already requested a VPN config file in advance of your observing night. You then need to import this VPN config and connect to the Lick VPN.

3.1.1 Connecting to the VPN inside the virtual machine

You'll need to make sure you've downloaded the VPN config file to the virtual machine, instead of your Windows host. The easiest way to do this is to simply launch a web browser in the virtual machine, log in to your email, and download the VPN file directly (Firefox is installed).

By default we'll want the VPN file in the downloads folder (~/Downloads), but you can place it anywhere as long as you update the VPN_DIR variable in ~/.bashrc to point to the location.

Once you have the VPN file downloaded, in a Konsole window run the command:

vpn_add.sh *filename*

where *filename* is the name of the VPN file you want to add, WITHOUT the .ovpn extension (e.g. Nickel20210325--P1D)

This will import the VPN file into the Network Manager. You will then be able to connect to the VPN using the command:

vpn_connect.sh *filename*

Note that there are also vpn_disconnect.sh and vpn_delete.sh scripts, which will disconnect/delete the VPN configs. All of these scripts live in the ~/Scripts directory, feel free to take a look at them to see the underlying commands that manipulate the Linux nmcli interface.

3.2 Launching the Remote Observing Software

Once you're connected to the Lick VPN, you're ready to launch the Remote Observing software. In a Konsole window do:

start_nickel_viewer

(or start_shane_viewer if you're using the Shane telescope).

6 separate VNC windows should start popping up, each of them asking you for the password. Enter the VNC password (6 times), and the VNC windows should all appear.

3.2.1 Updating the Lick Remote Observing Software

Occasionally the remote observing software will get updated. If this happens you may notice a message telling you that the software is outdated when you launch the VNC viewers (things will probably still work fine). Because the software has been installed from github, updating the software is straightforward. The command:

update_lick_software.sh

will check if you're running the latest version, and pull from the github repository if an update is available.