DASL

Drones and Autonomous Systems Lab @ UNLV

Teleoperating DARWIN-OP with VNC - Setup (Practical Report) (#002)

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Teleoperating DARWIN-OP with VNC - Setup

DARWIN-OP (Summer 2017)

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1 INTRODUCTION

1.1 PURPOSE OF THIS DOCUMENT

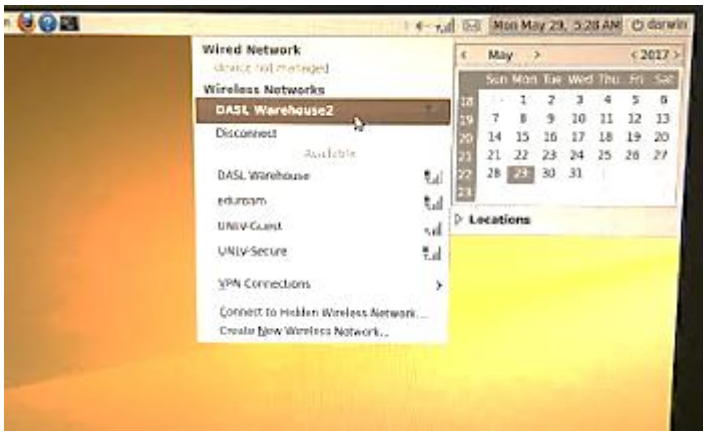
The purpose of this document is to allow lab members to familiarize with how to set up the VNC connection between a Windows 10 laptop -or- a Ubuntu laptop with the PC inside DARwIn-OP. The goal of this document is also to avoid using jargons to help the readers understand better.

2 BEFORE SETTING UP

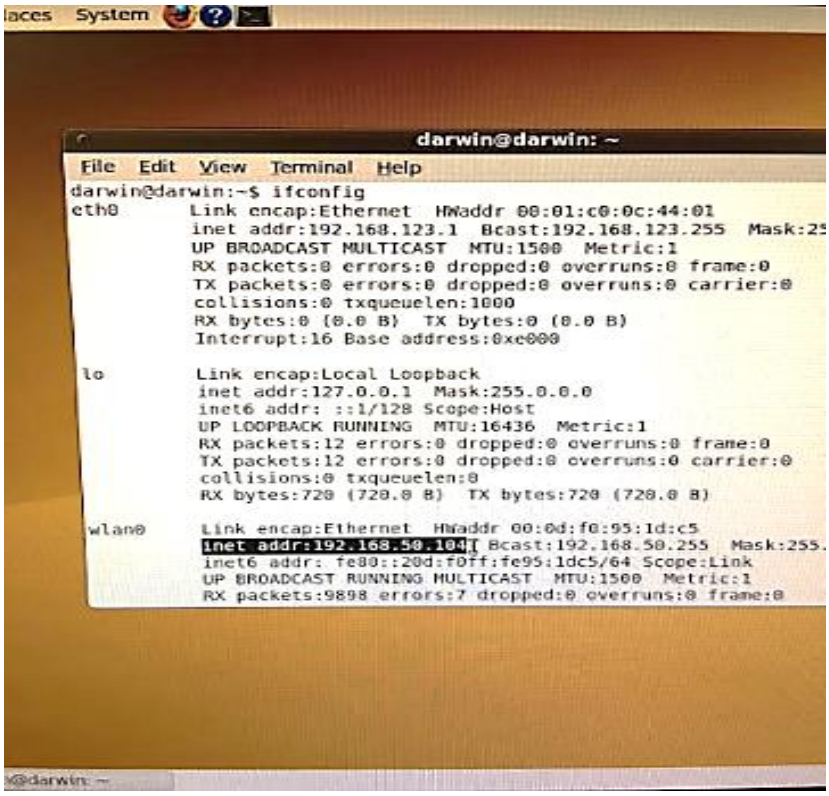
2.1 WIRELESS CONNECTIONS

Make sure DARwIn-OP is connected to the DC power supply and is also connected to the monitor and keypad. Turn on the DARwIn-OP, then the monitor that is connected to DARwIn-OP will show the system inside DARwIn-OP.

Make sure the DARwIn-OP is connected to the wireless network “DASL Warehouse2.”

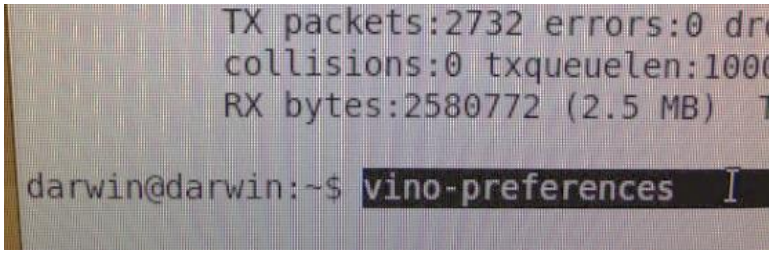


Now that the operating system of DARwIn-OP is connected to the wifi, open the terminal on DARWIN-OP, then type in “ifconfig” to the command line and scroll down to “wlan0” section to find the “inet addr” as shown.

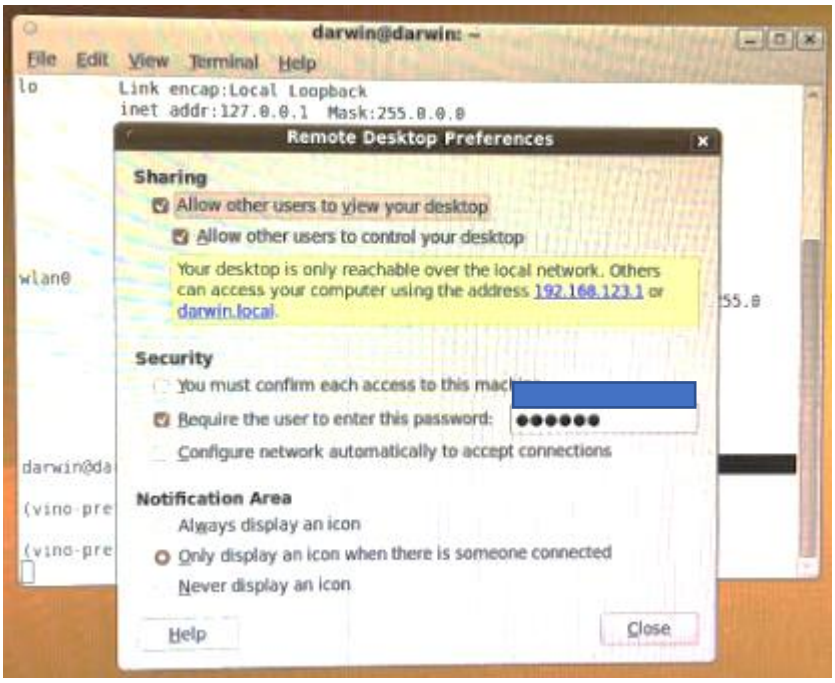


Take note of this address, which will be used later.

To make sure that DARWIN-OP can indeed able to allow VNC communication, on the command line, type in “vino-preferences” then wait for a configuration window to pop up.



When the configuration window pops up, ensure that the following check marks are made as shown (the password has been blocked out for privacy purposes):



3 TUTORIAL ON SETTING UP VNC ON UBUNTU

3.1 PREREQUISITES AND NOTES

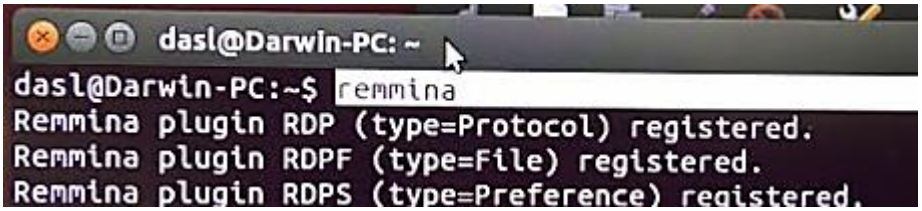
In this tutorial, the an **Ubuntu 14.04 LTS** laptop in the lab, labeled "DARWIN PC" was used. Please ask a lab member for the password to this laptop.

Connect this laptop also to "DASL Warehouse2." The goal is to make sure that the laptop and the DARWIN-OP system are connected to the same wireless network.

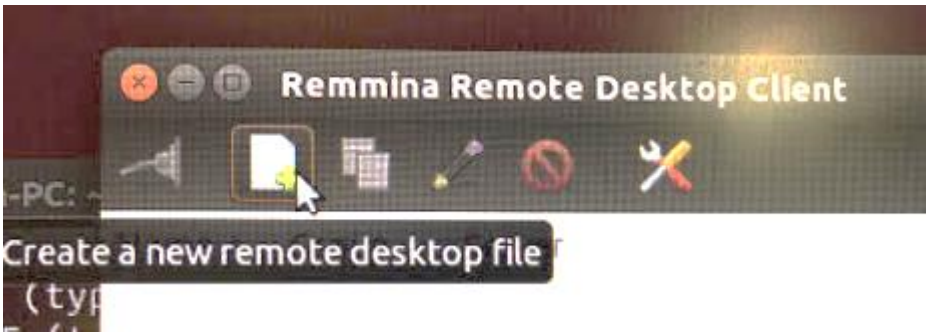
On your laptop, make sure that **Remmina** (a program that enables VNC connection) is installed. (You can check this by typing "remmina" on the command line on your terminal and see if a GUI of Remmina will pop up).

3.2 SETTING UP REMMINA

After ensuring that Remmina has been installed on Ubuntu, type in “remmina” on the command line.



When Remmina opens, click on “create a new remote desktop file.”



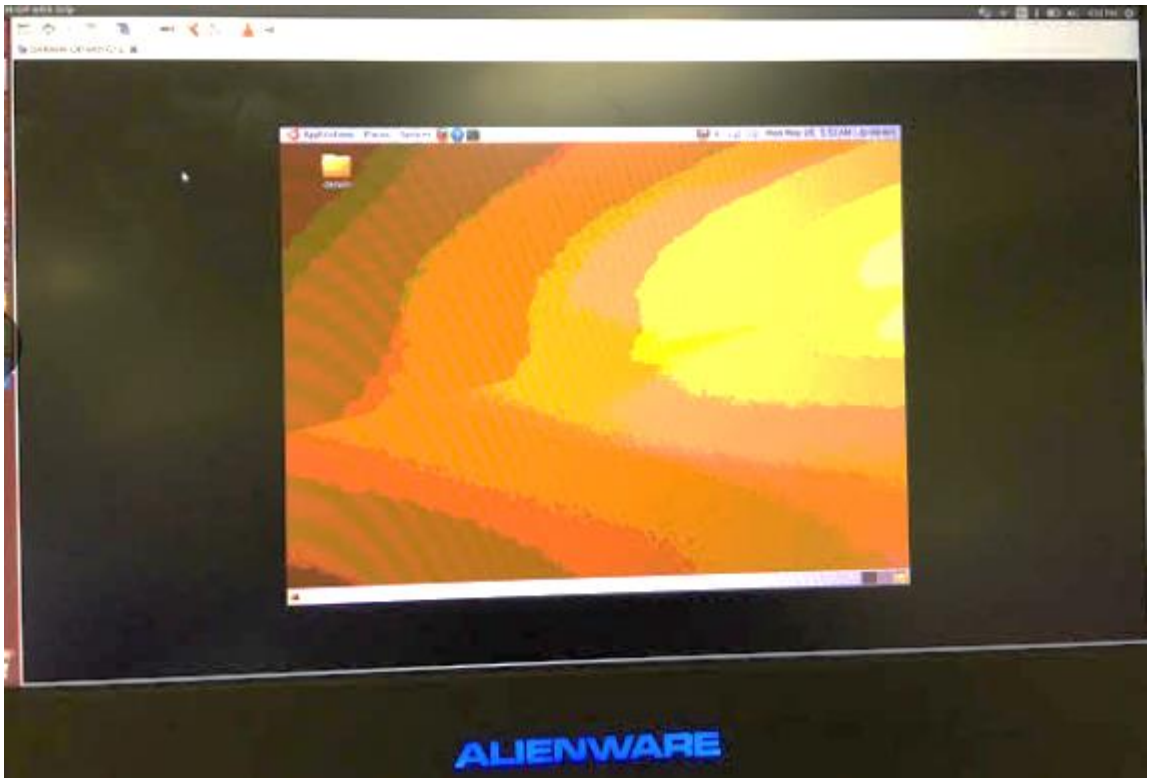
Then, a set up page will pop up, please enter the following

- **Name**: [choose a name that distinguish the Darwin that you're using]
- **Protocol**: VNC
- **Server**: the number under the "wlan0" section (please see **Sec 2.1**)
- **User name**: darwin
- **Password**: 111111
- **Color depth**: 256 colors
- **Quality**: Poor (fastest)

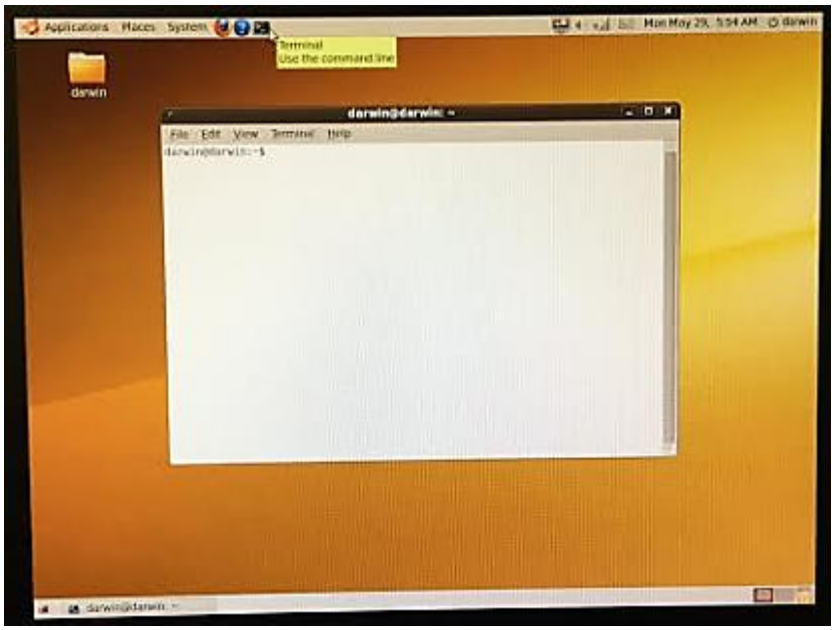
Then, click "Connect."

Then, you will see the following window:

Then, on the Ubuntu laptop, you will be able to see the window of DARWIN-OP in a new window.



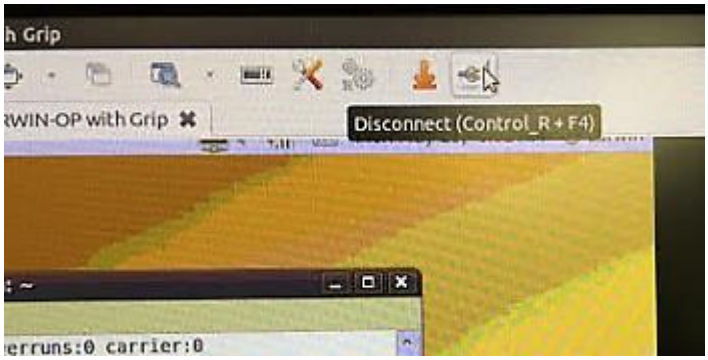
Where, the actual monitor display of the DARWIN-OP system is:



Now, the Ubuntu is able to control DARWIN-OP remotely.

3.3 TURN OFF REMMINA

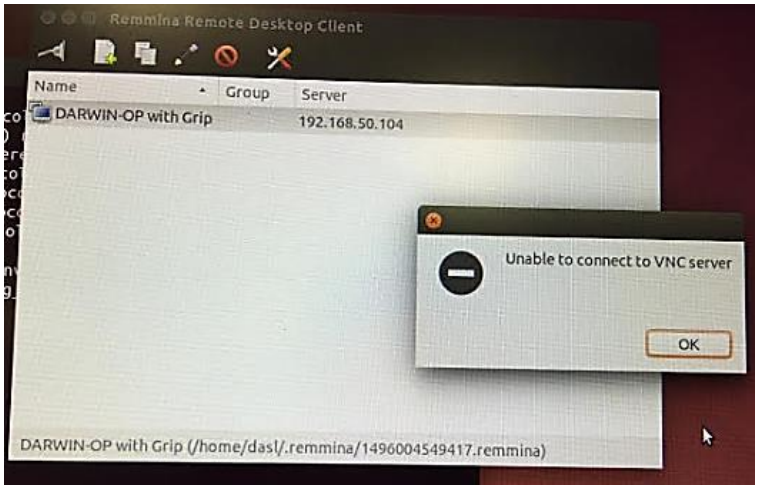
Please disconnect Remmina using the following button shown (or RightCtrl+F4):



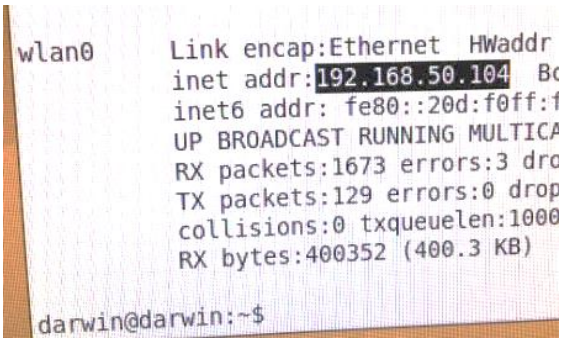
3.4 TURN OFF DARWIN-OP

To ensure that the address of 192.168.50.104 still works, make sure the shut down DARWIN-OP through either (1)the button on DARWIN-OP's chest or (2)using the shut down button on DARWIN-OP's PC:

After Darwin has shut down, you should see that when you try to connect to DARWIN-OP again, you will get an error message:



To make sure that the address of 192.168.50.104 still works (which should work if you turn off DARWIN-OP the proper way to allow DARWIN-OP to save changes), you can turn on DARWIN-OP again and use "ifconfig" again to check the same IP address is shown.



3.5 POST-SETUP

After setup (steps in **Sec 2.1-2.3** has been done), you can connect to DARWIN-OP quicker from your Ubuntu laptop by

(1) Access Remmina

(2) Double click on the saved VNC

4 TUTORIAL ON SETTING UP VNC ON WINDOWS 10

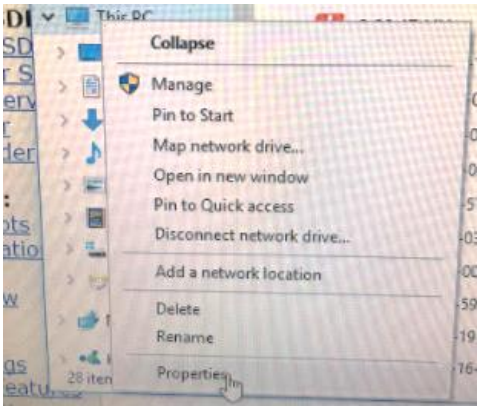
4.1 PREREQUISITES

A software that help you connect to another device through VNC need to be installed.

A popular software is TightVNC.

Link: *http://www.tightvnc.com/download.php*

There are two different versions of TightVNC to choose from based on your machine (64-bit or 32-bit). To check what kind of machine you have, open a file explorer then right click on “This PC.”

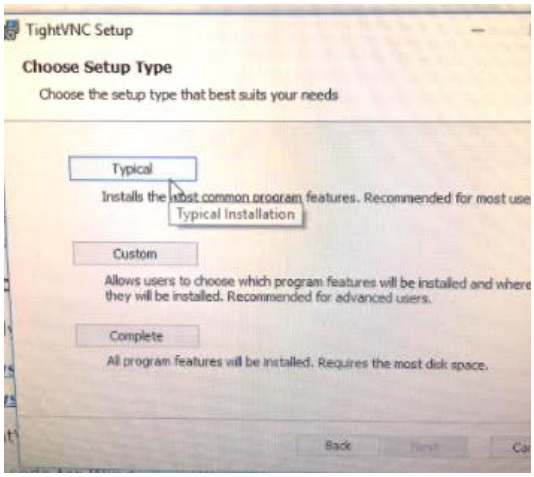


On the window that pops up, you can check whether your operating system is 64-bit or 32-bit (as shown below at where the mouse is pointing at):

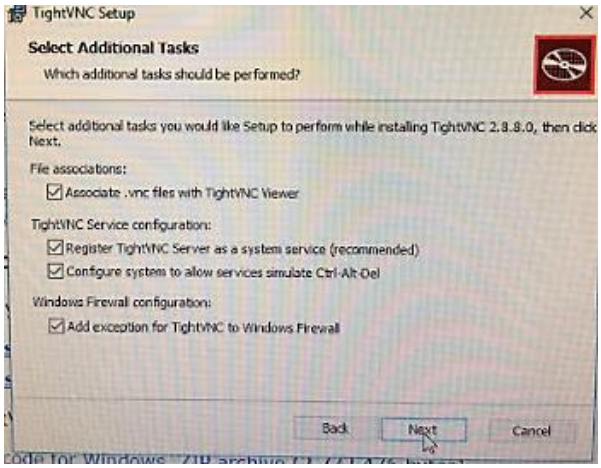
With a 64-bit operating system, the 64-bit version of TightVNC installer will be downloaded:

Open the installer.

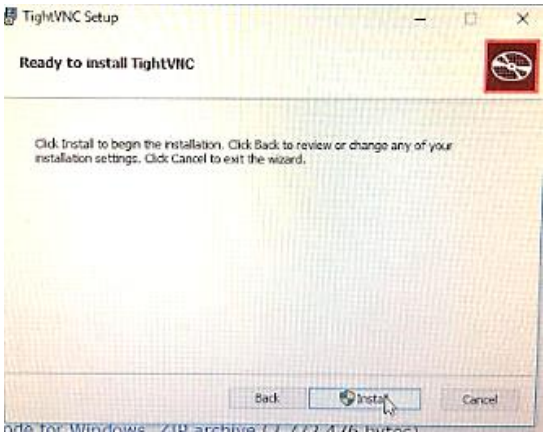
Select typical as “Setup Type.”

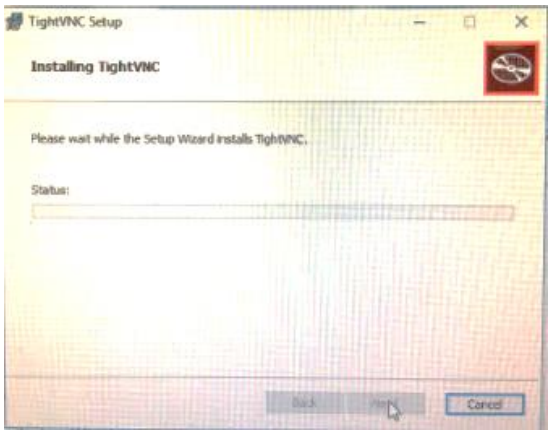


Then, with all of the default options checked, click “Next.”

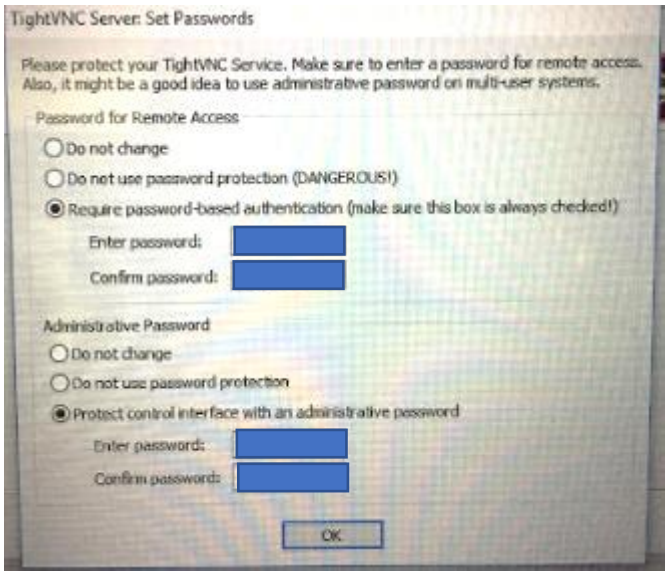


Then, install TightVNC.

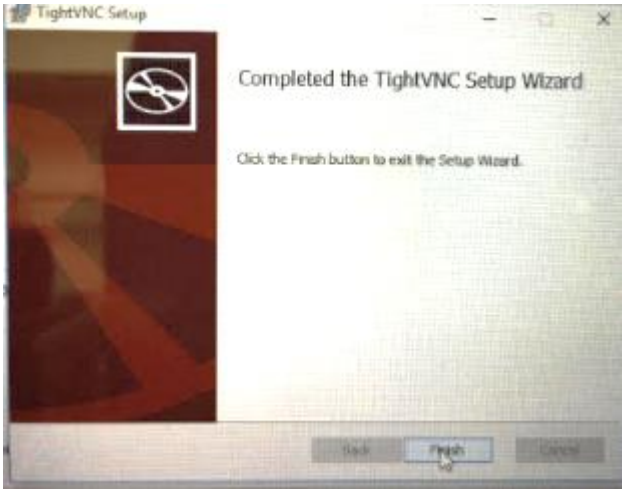




During the installation, two different passwords need to be set (where the passwords are blocked for privacy purposes):



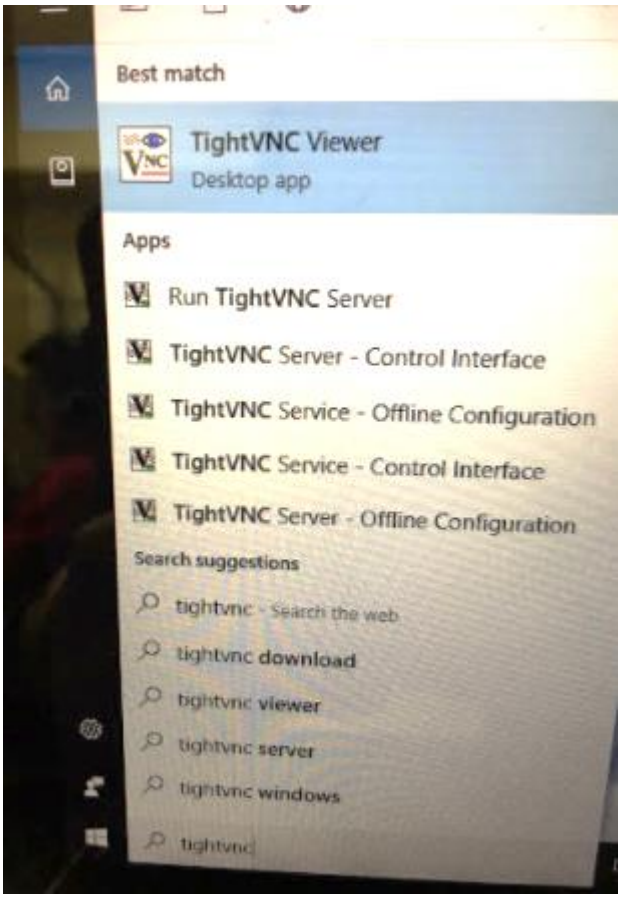
Then, the setup process is done:



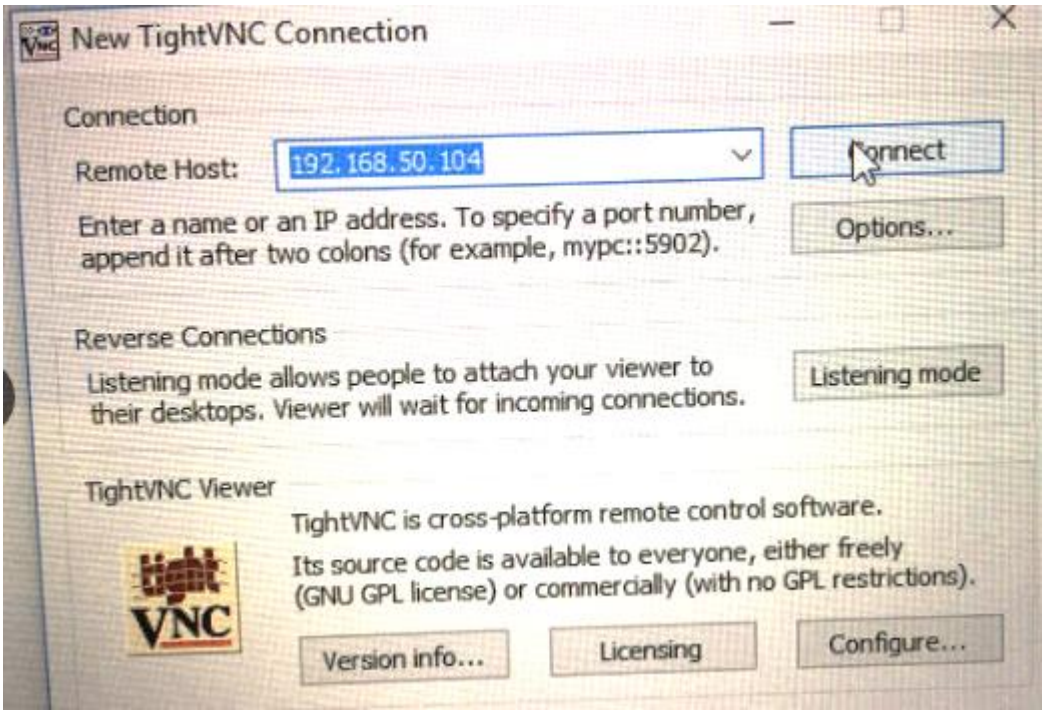
4.2 SETTING UP ON TIGHTVNC FOR VNC

Make sure you are connected to “DASL Warehouse2” on the windows laptop.

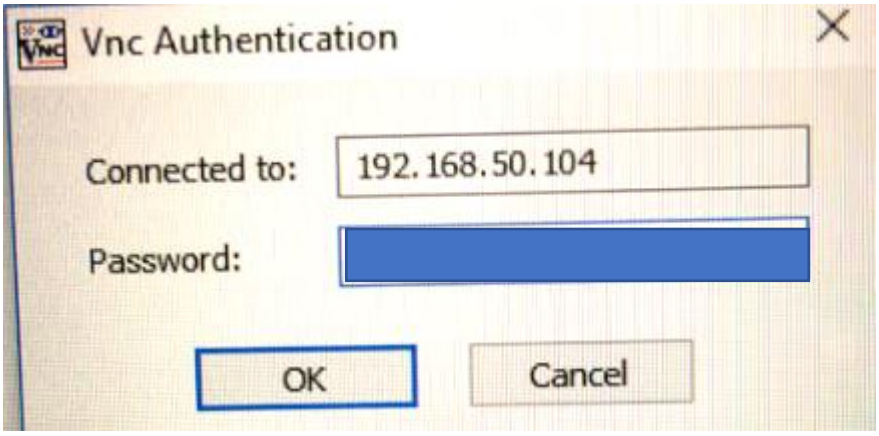
Open up the TightVNC Viewer on Windows.



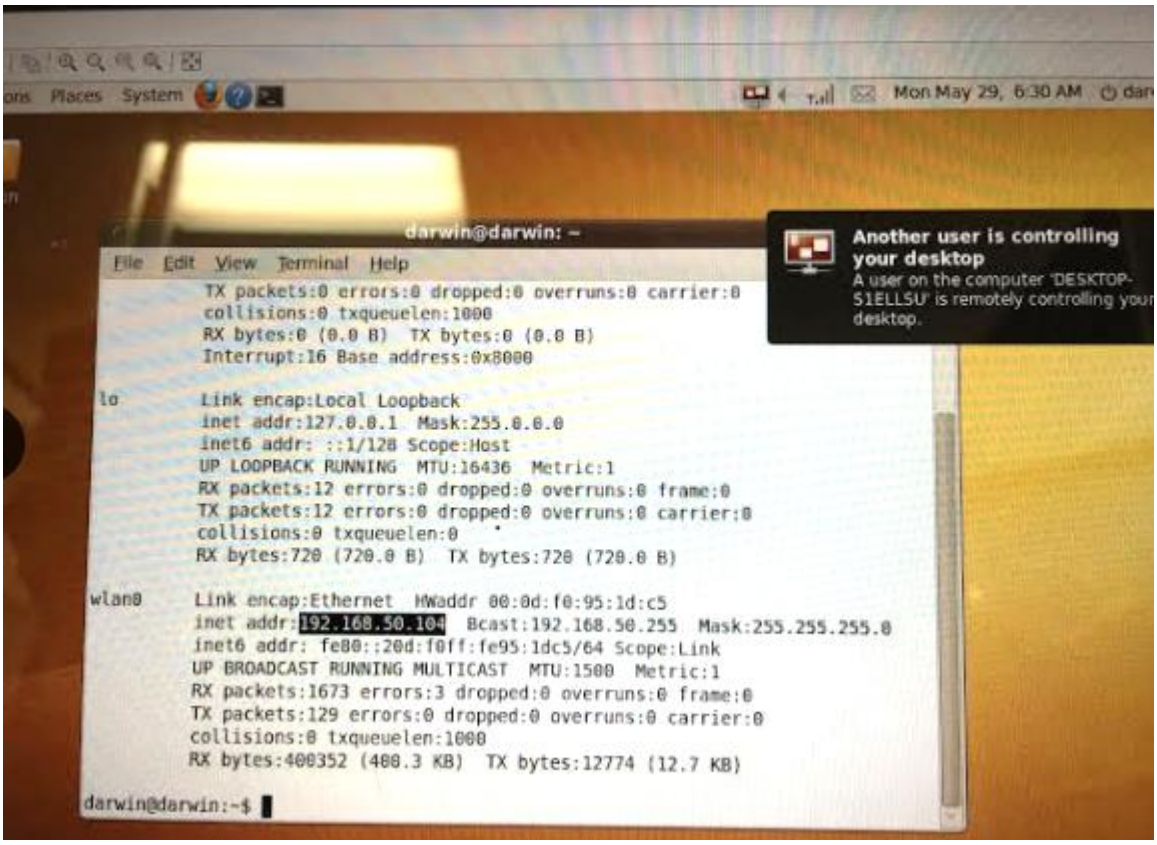
On the setup page, enter the IP address of the remote host (which is DARWIN-OP). This number is the same IP address used on Ubuntu Remmina.



Enter passoword to finish setup.



Now, the GUI of DARWIN-OP will open up in a new window on your Windows laptop.


Places System
Mon May 29, 6:30 AM
darwin@darwin: ~
File Edit View Terminal Help
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)
Interrupt:16 Base address:0x8000
lo Link encap:Local Loopback
inet addr:127.0.0.1 Mask:255.0.0.0
inet6 addr: ::1/128 Scope:Host
UP LOOPBACK RUNNING MTU:16436 Metric:1
RX packets:12 errors:0 dropped:0 overruns:0 frame:0
TX packets:12 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:720 (720.0 B) TX bytes:720 (720.0 B)
wlan0 Link encap:Ethernet HWaddr 00:0d:f0:95:1d:c5
inet addr:192.168.50.104 Bcast:192.168.50.255 Mask:255.255.255.0
inet6 addr: fe80::20d:f0ff:fe95:1dc5/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:1673 errors:3 dropped:0 overruns:0 frame:0
TX packets:129 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:400352 (400.3 KB) TX bytes:12774 (12.7 KB)
darwin@darwin:~$
Another user is controlling your desktop
A user on the computer 'DESKTOP-51ELL5U' is remotely controlling your desktop.

DOCUMENT CONTROL

Title: Teleoperating DARWIN-OP wit VNC - Setup (Practical Report)

Issue: VNC Connection

Date: 29 March 2017

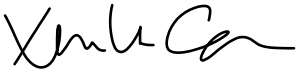
Author: Xinke (Rebecca) Cao

Supervisor Jean Chagas Vaz

Distribution: Drones and Autonomous Systems Lab (DASL)

Filename: Report 2 – VNC Configuration

DOCUMENT SIGNOFF

Nature of Signoff	Person	Signature	Date	Role
Author	Xinke (Rebecca) Cao		05/28/2017	Writer
Reviewers	Jean Chagas Vaz		05/29/2017	Supervisor

DOCUMENT CHANGE RECORD

Date	Version	Author	Change Details
28 May 2017	Draft 1	Rebecca	First complete draft
			Review and update
			Updating format
			Apply review comment and issue