TEMASEK POLYTECHNIC
SCHOOL OF INFORMATICS & IT
VIRTUAL DESKTOP TECHNOLOGY
Practical 2

Dear students,

- Please ensure to complete these Labs as they will be part of your final project report and POC.
- Please remember to take all **important screen shots** of each Lab to build up your final project report and POC.
- Please also remember to use virtual box **clone feature** to back up your Ravada VM after each Lab to prevent any corruption.
- Please copy all Linux commands in these Labs to **notepad** first, **ensure all syntax is correct** before copying to Linux Command prompt.

Setting up and run Ravada VDI

Step 1
Install all the pre-requisite software

Install database (MySQL Database)
$ sudo apt-get install mysql-server mysql-common wget debconf adduser net-tools

Install kvm packages (Hypervisor)
$ sudo apt-get install qemu-utils qemu-kvm libvirt-clients libvirt-daemon-system bridge-utils virt-manager virtinst

Install perl packages
$ sudo apt-get install perl libmojolicious-perl libauthen-passphrase-perl libdbd-mysql-perl libdbi-perl libdbix-connector-perl libipc-run3-perl libnet-ldap-perl libproc-pid-file-perl libsys-virt-perl libxml-libxml-perl libconfig-yaml-perl libmoose-perl libjson-xs-perl perlmagick libmoosex-types-netaddr-ip-perl libsys-statistics-linux-perl libio-interface-perl libiptables-chainmgr-perl libnet-dns-perl liblocale-maketext-lexicon-perl libmojolicious-plugin-i18n-perl libdbd-sqlite3-perl libdigest-sha-perl libnet-ssh2-perl libfile-rsync-perl libdate-calc-perl libparallel-forkmanager-perl libmojolicious-plugin-renderfile-perl libdatetime-perl

Install complier packages that are required to build some dependencies from source:
$ sudo apt-get install gcc make libssh2-1-dev libnet-ssh2-perl libssh2-1 libdate-calc-perl zlib1g-dev libpcre3-dev zlib1g-dev libpcre3-dev

Compile Perl Module
Some Perl modules must be compiled from source:
$ sudo perl -MCPAN -we 'install "Net::SSH2"'

Step 2
Download and install Ravada
wget http://infoteleco.upc.edu/img/debian/ravada_1.8.4_ubuntu-20.04_all.deb
sudo apt-get update
sudo apt install ./ravada_1.8.4_ubuntu-20.04_all.deb

Step 3
Configure MySQL Database
Pre-set database
$ sudo mysql
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password by 'cisco123';
mysql> \q
$ sudo mysql_secure_installation

Create database
$ sudo mysqladmin -u root -p create ravada

Login to database
$ sudo mysql -u root -p ravada

Create database admin user for ravada
mysql> create user 'rvd_user'@'localhost' identified by 'Pword12345*';
mysql> grant all on ravada.* to rvd_user@'localhost';
mysql> \q

Create Ravada web portal Admin
sudo /usr/sbin/rvd_back --add-user admin
When asked if this user is admin answer: Yes

Configure Windows 10 VDI Tablet integration
cd /var/lib/ravada/xml/
sudo nano windows_10.xml
Replace <input type='mouse' bus='ps2'/> with <input type='tablet' bus='usb'/>
ctrl + o to save and ctrl + x to exit

Install and configure ssh (To allow ISO images upload to Ravada VM)
sudo apt-get install openssh-server
sudo nano /etc/ssh/sshd_config
PermitRootLogin yes
PasswordAuthentication yes
sudo systemctl enable ssh
sudo systemctl start ssh
sudo chmod 777 /var/lib/libvirt/images

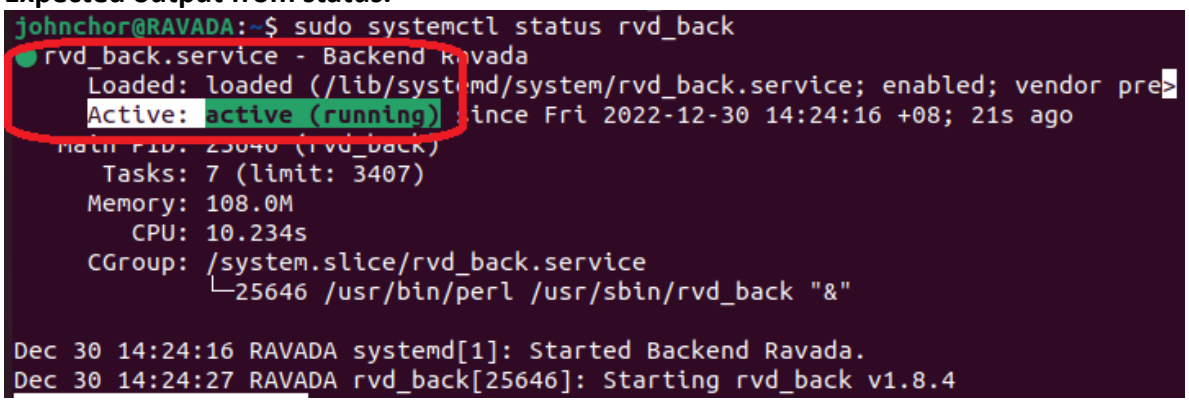
Step 4
After install or upgrade, you must refresh the systemd service units
$ sudo systemctl daemon-reload

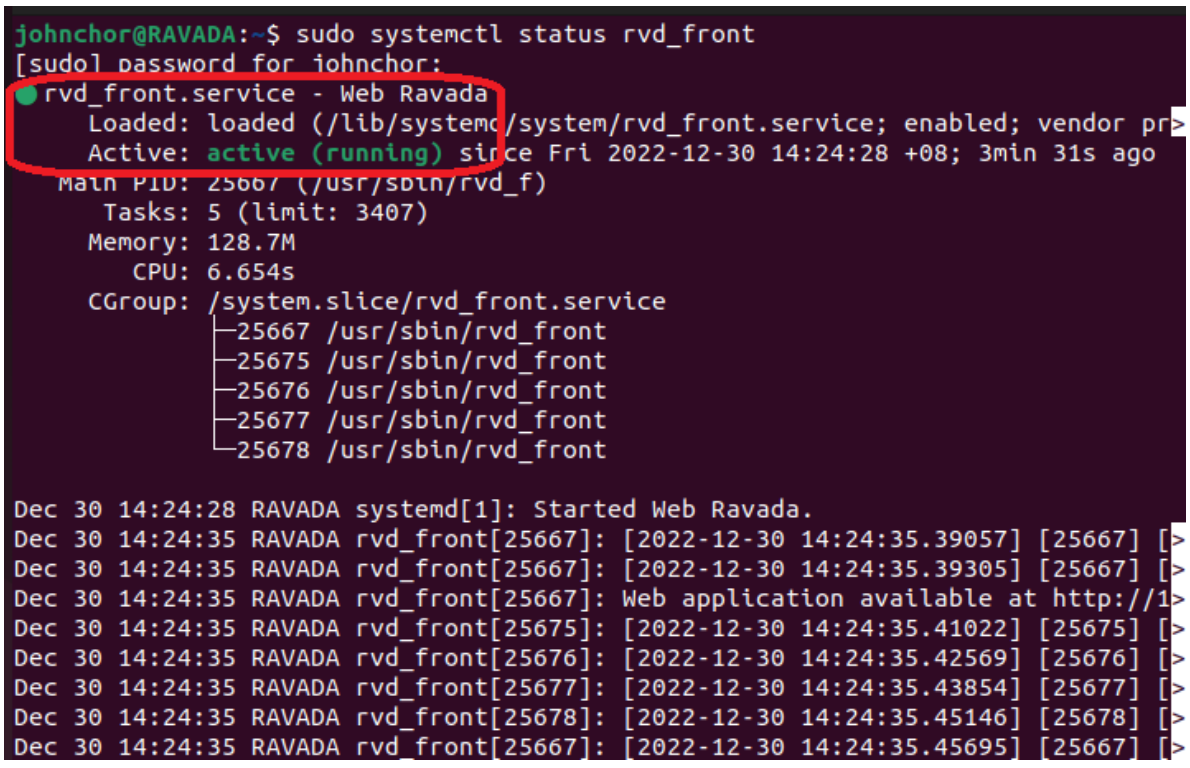
Check the services are enabled to run at startup
$ sudo systemctl enable rvd_back
$ sudo systemctl enable rvd_front

Start
$ sudo systemctl start rvd_back
$ sudo systemctl start rvd_front

Status
$ sudo systemctl status rvd_back
$ sudo systemctl status rvd_front

Expected output from status.



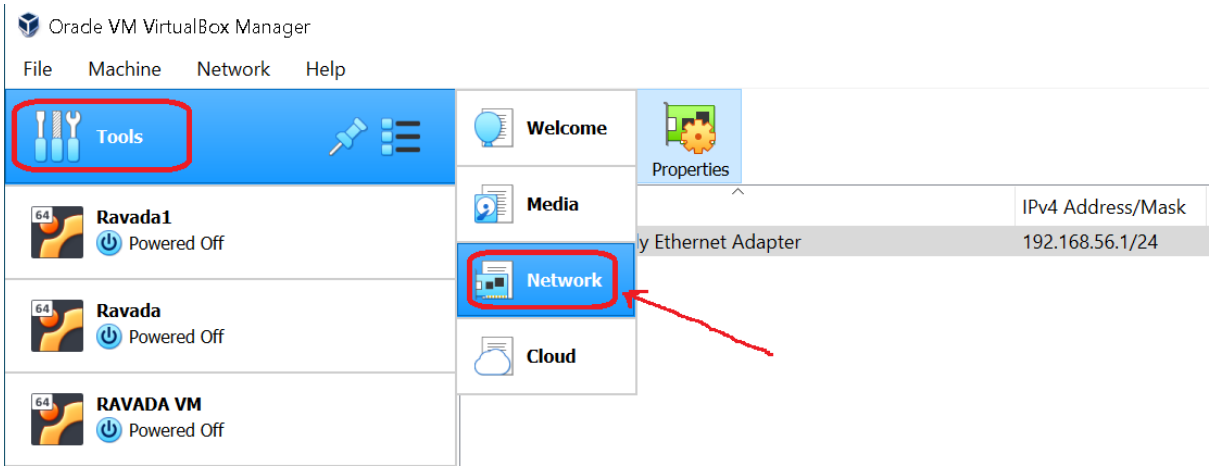


Step 5

Configure Host Only Adapter

Shutdown the Ravada VM

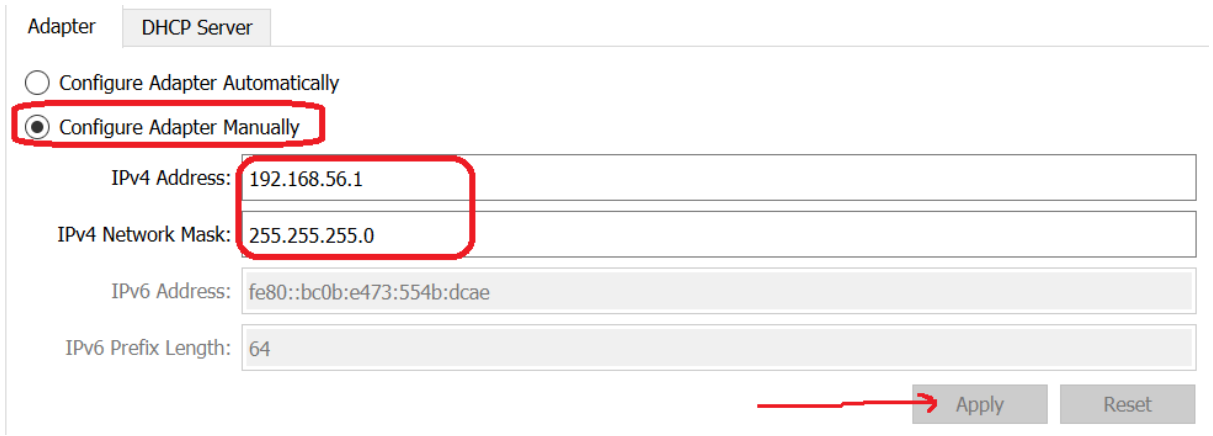
Go to Virtual Box → Tools → Network



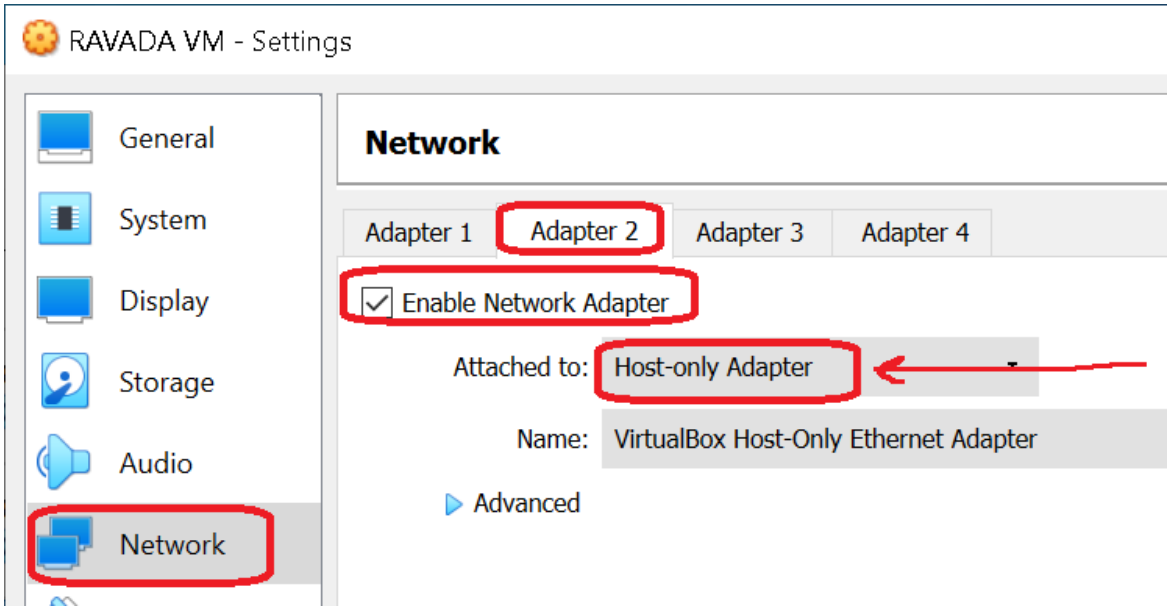
Configure Host Only Adapter Settings Manually as below

IP address 192.168.56.1

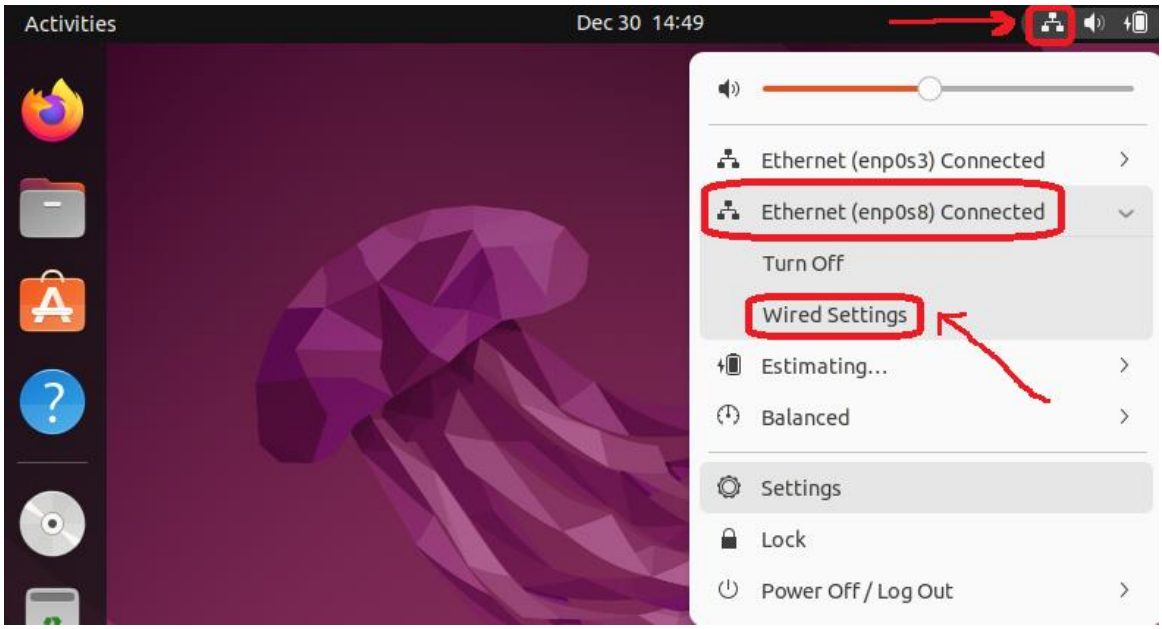
Subnet mask 255.255.255.0



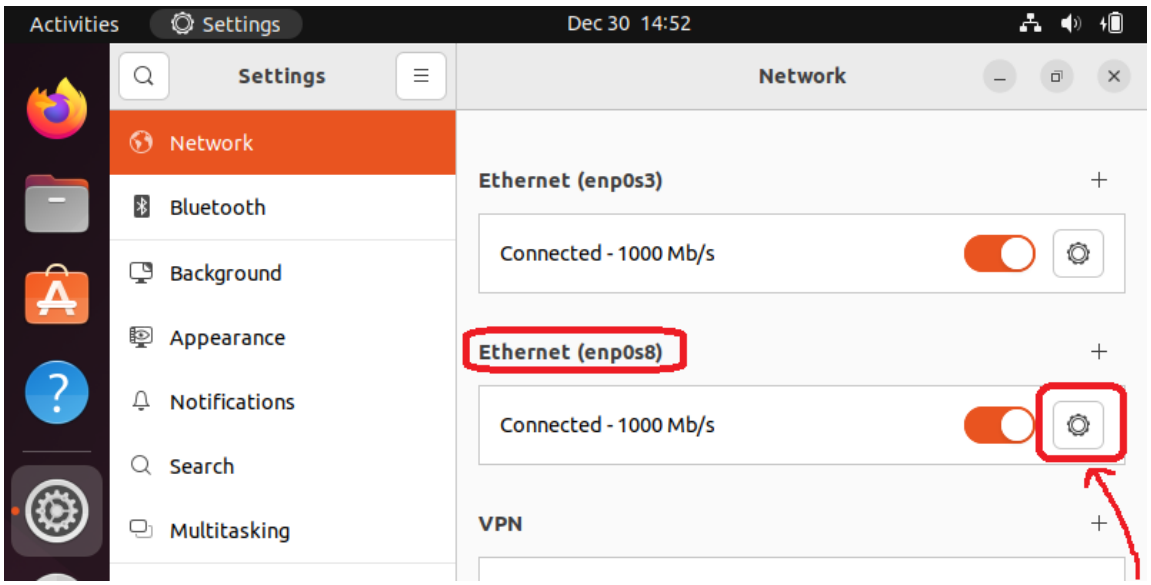
Add Host Only adapter to allow your Windows 10 Notebook browser to connect to the Ravada web portal



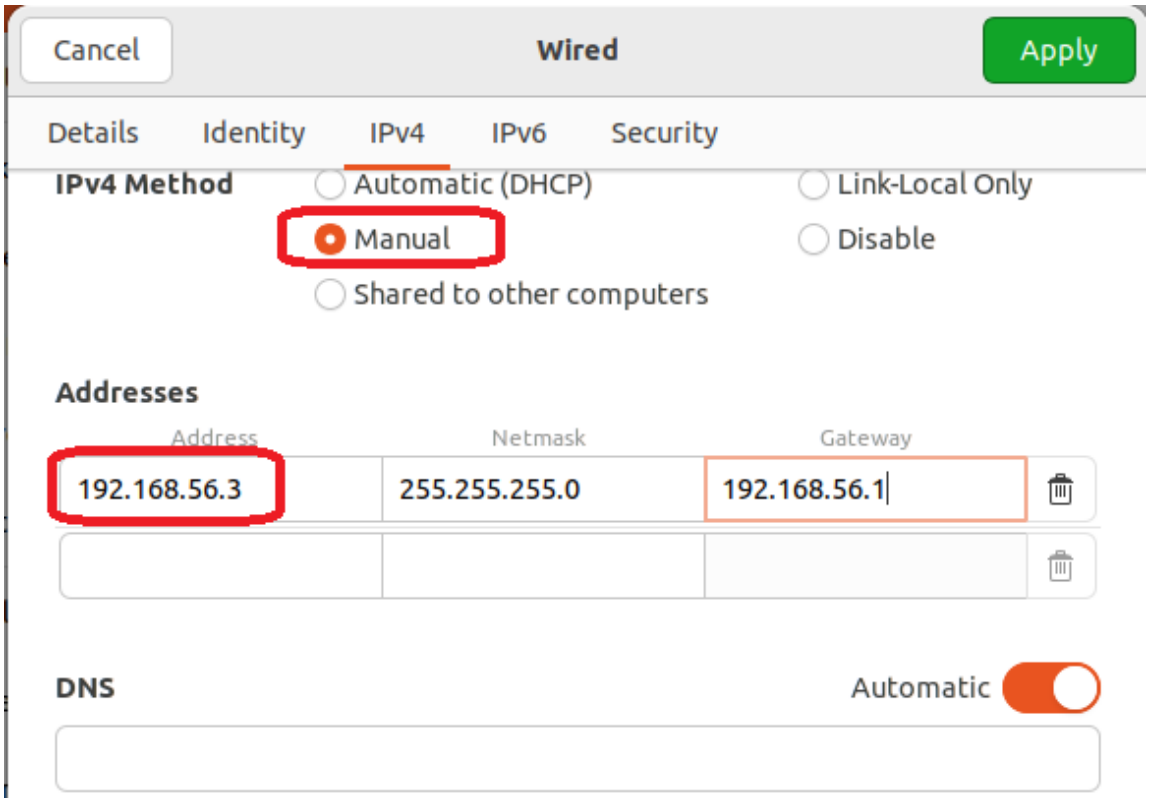
Power on Ravada VM again
Goto Network icon → Ethernet (enp0s8) → Wired Settings



Click the **Configure icon** for Ethernet (enp0s8)



Configure your Ravada VM Ethernet (enp0s8) as below
IP address 192.168.56.3
Subnet mask 255.255.255.0
Gateway 192.168.56.1

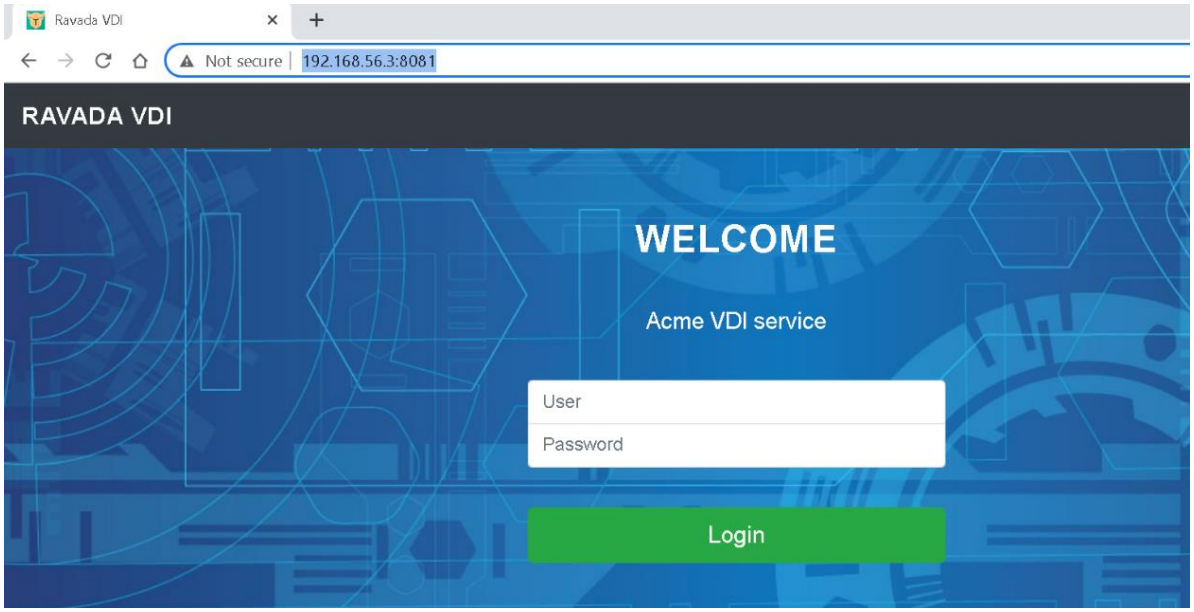


Step 6

Use your Windows 10 Notebook Browser

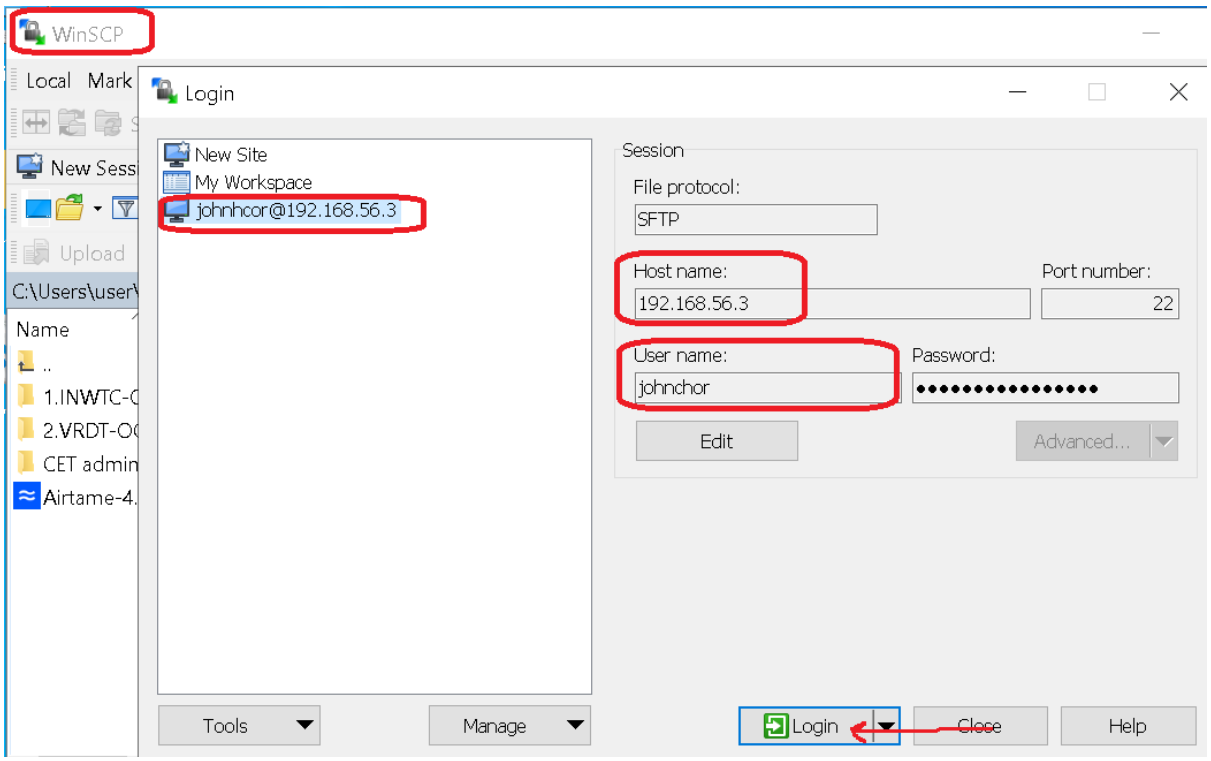
Launch the Ravada web portal http://192.168.56.3:8081/

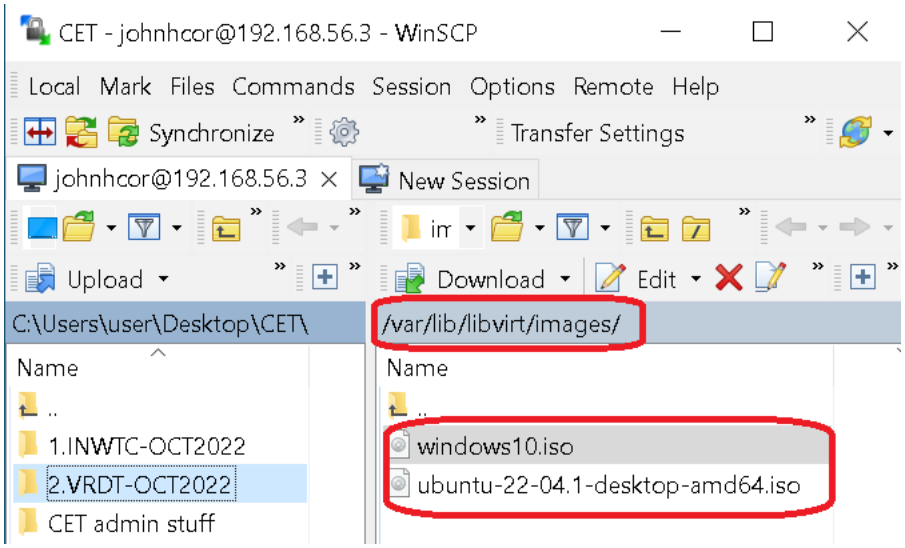
Login with admin and admin password



Step 7

Install and use Winscp to copy Windows 10 and Ubuntu 22.04.1 ISO into Ravada VM **/var/lib/libvirt/images** directory





Step 8
Install Virt-viewer
Make sure you can launch it