IBM Software Group

A Recipe for Getting a GUI Working in the IBM Cloud

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WebSphere software

ON DEMAND BUSINESS

DRAFT

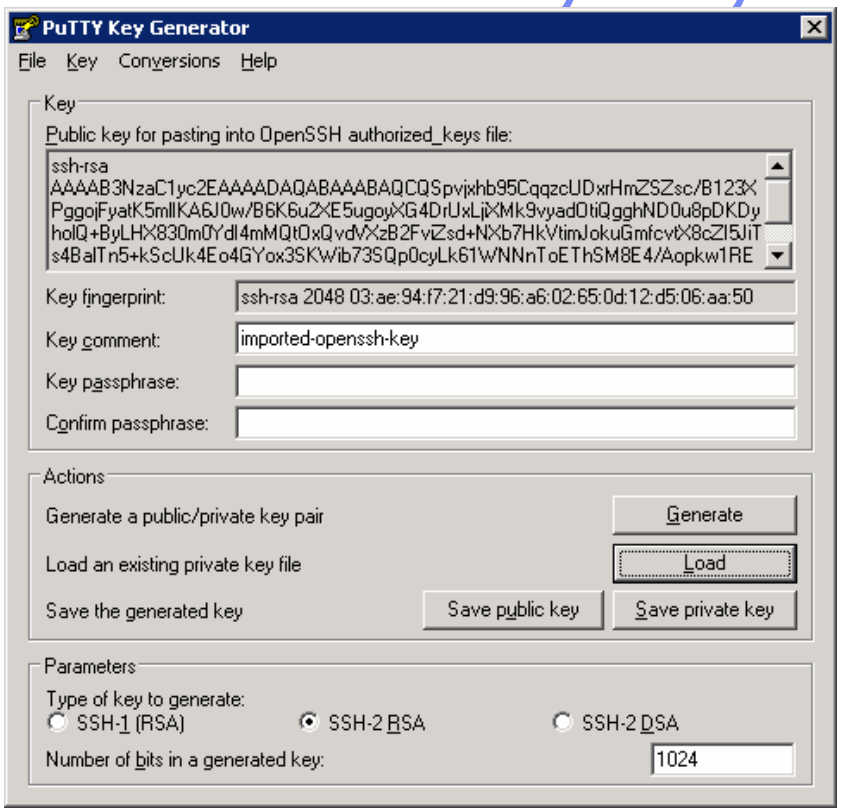
What is the problem being solved

- The IBM cloud does not provide a graphical user interface (GUI) directly
- People have become used to using GUIs for software installation, diagnosis, editing, etc.
- Installation additional software to access a GUI is problematic or requires modifying the VM image
  - e.g., installing NX view or getting X-windows to expose its network port, exposing the VNC server port
- This document provides step-by-step instructions for getting VNC viewer running on the IBM cloud
  - Assumes you are using a Microsoft Windows based operating system

What are the steps to solving the problem

1. Install Putty and its associated programs (a free telnet / ssh client)
2. Create the security key putty uses from the key the IBM cloud gave you
3. Start the vncserver
4. Create the Putty session information for the SSH tunnel
5. Start the Putty session to open the SSH tunnel
6. Start the local VNC viewer

Create the Putty Key



1. Start the “puttygen.exe” program
2. Press the ‘Load’ button
3. Find the ssh rsa key that is being used to access the remote host
   - You should have gotten this from the IBM cloud
4. Once successfully loaded, the ‘PuTTYgen Notice’ above is generated
5. Save the Putty private key and remember the location
   - You will need to select this file later

Start the VNC server on the VM image

- Start vnc server on the remote host
  - Start as ‘root’
    - ‘sudo su –’
    - ‘vncserver’
  - You will need to specify a password that will be used later
  - Call this the “VNC password”

```
[root@vhost0105 ~]# vncserver

You will require a password to access your desktops.

Password:
```

- Record the IP address of the remote host
- Record the TCP port that VNC is listening on

```
11/03/2010 21:18:36 Listening for VNC connections on TCP port 5901
11/03/2010 21:18:36 Listening for HTTP connections on TCP port 5801
11/03/2010 21:18:36   URL http://vhost0104:5801
```

  - The example above shows it is listening on port 5901
- Record the location of the ‘xstartup’ file
  - It is /root/.vnc/xstartup in the example

```
New 'vhost0105:1 (root)' desktop is vhost0105:1

Creating default startup script /root/.vnc/xstartup
Starting applications specified in /root/.vnc/xstartup
Log file is /root/.vnc/vhost0105:1.log
```

Get the window manager working for VNC

- This step is for a Red Hat OS
  - May apply to variants of SUSE

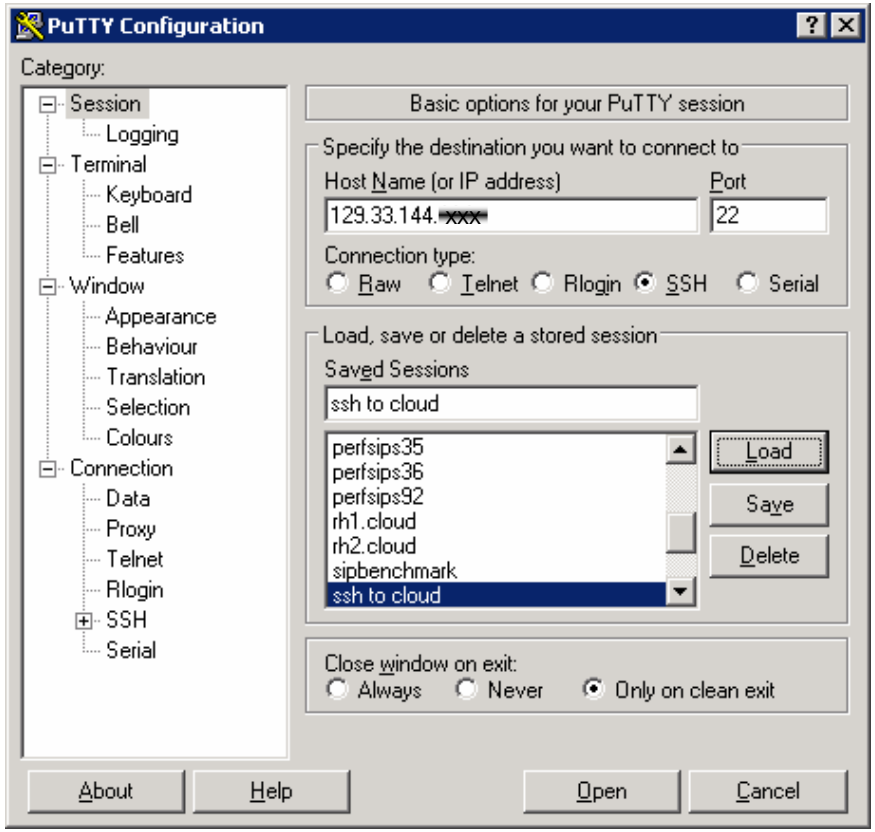
1. Edit the /home/idcuser/.vnc/xstartup file
2. Uncomment the following lines below the first comment
   - This starts the normal window manager (e.g., gnome)

```
# Uncomment the following two lines for normal desktop:
# unset SESSION_MANAGER
# exec /etc/X11/xinit/xinitrc
```

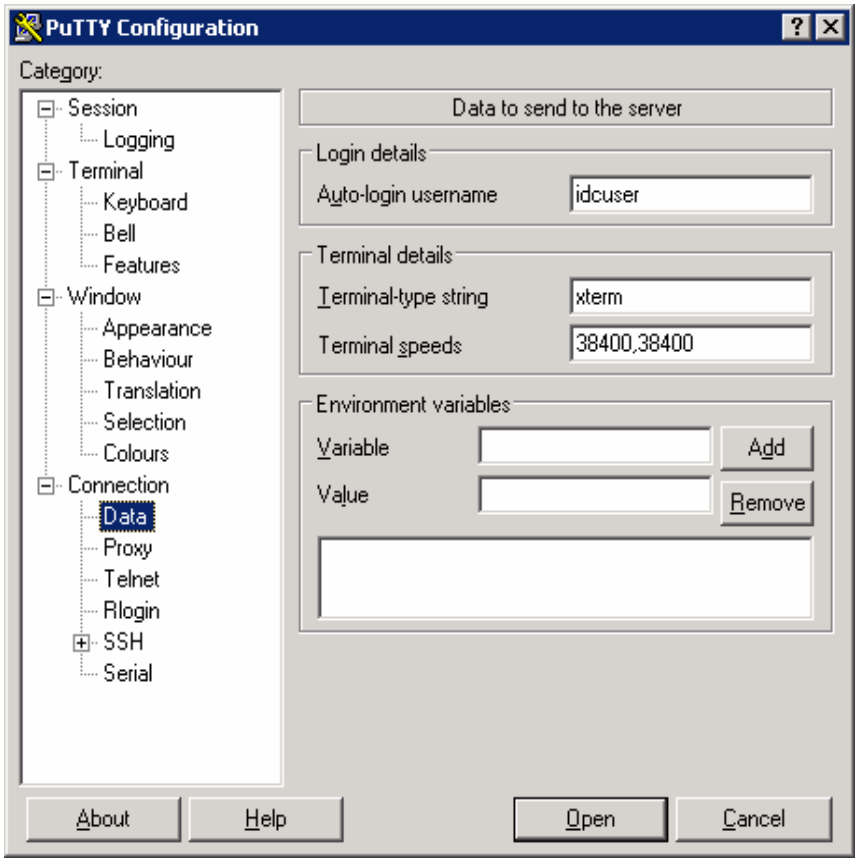
3. Restart the vncserver as root
   - To kill the vncserver, do a ‘killall -9 Xvnc”

Create a Putty saved session to the cloud image

1. Open the Putty.exe file
2. Enter the IP address to the cloud image in the host name
   - ‘Host Name (or IP address)’ text box
3. Ensure it is SSH
4. Add a name in the “Saved Sessions” text entry box
5. The host name to enter is the remote host
   - In this example 129.33.144.194
   - Port 22 is for ssh
6. Save this entry
   - Configuration is not quite done but always be safe

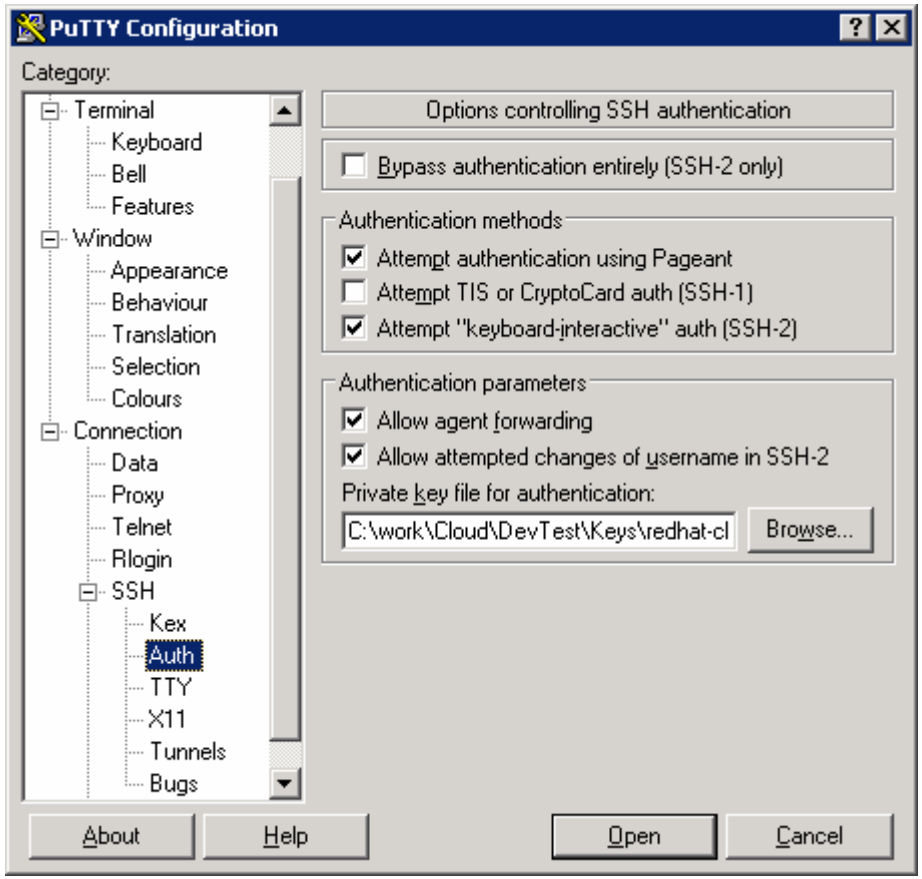


Set-up the Putty user login ID



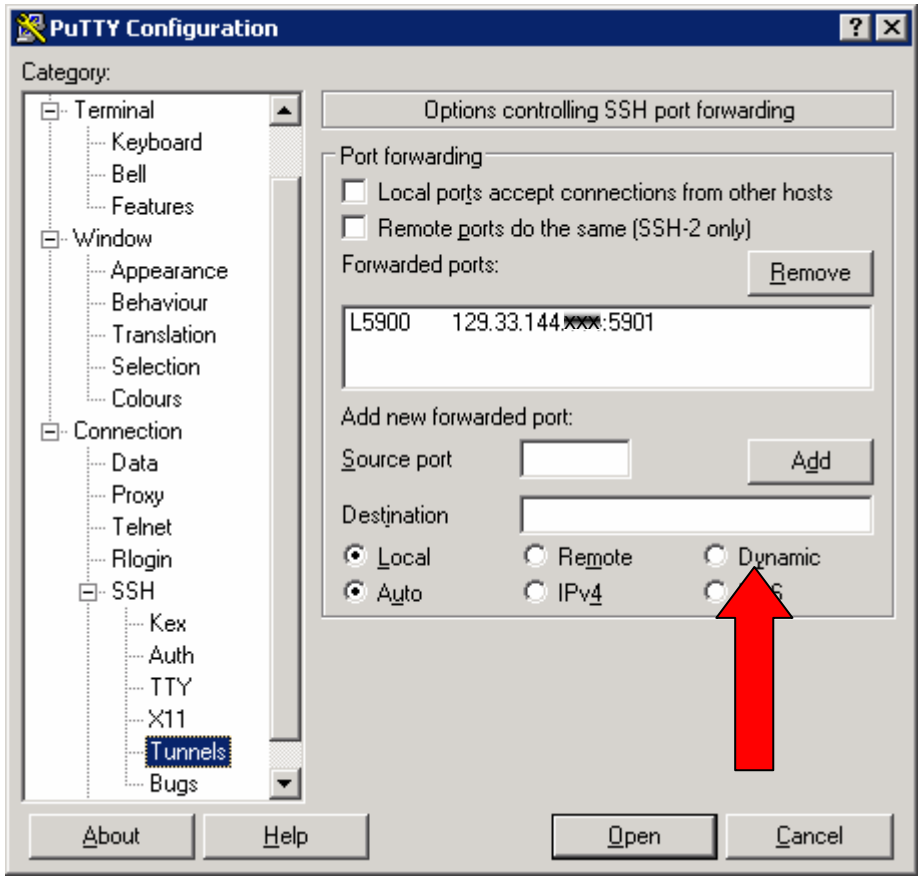
1. Click on the ‘Connection’ →’Data’ in the left tree
2. Enter the user ‘idcuser’ in the ‘Auto-login username’ text box

Set-up the Putty SSH key



1. Click on the ‘Connection’ →’SSH’ → ‘Auth’ item in the left tree
2. Enable the ‘Allow agent forwarding’
3. In the ‘Private key file …’ text box, browse to where the Putty private key is
   - Created in the step “Create the Putty key’

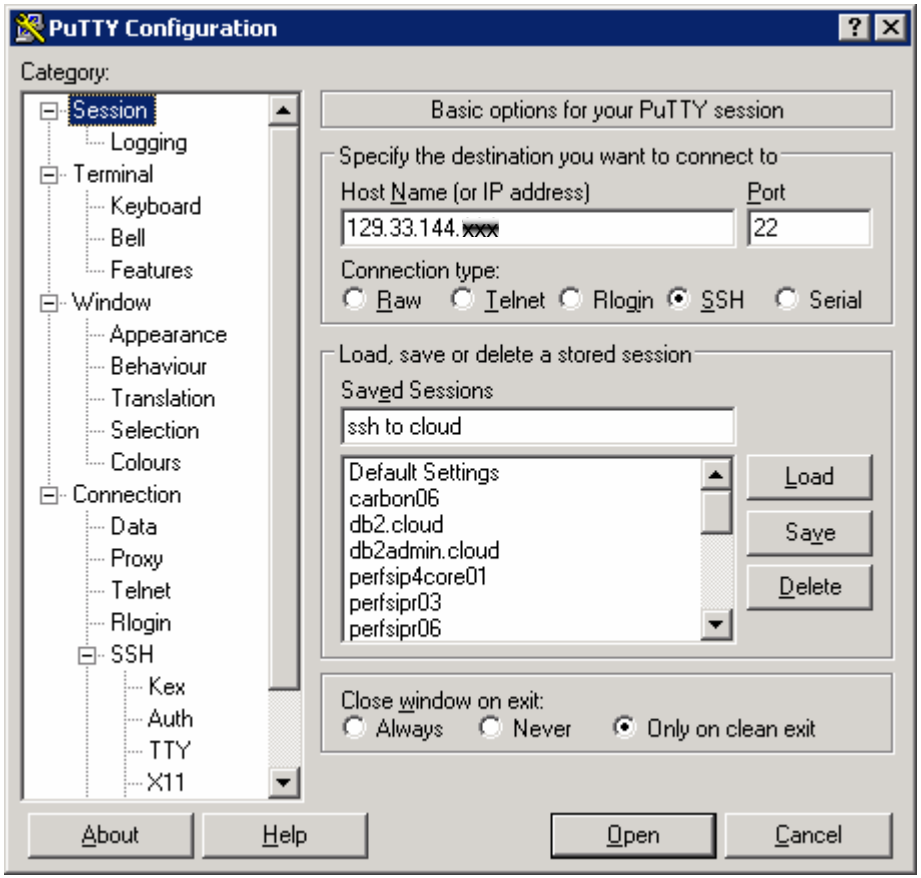
Set-up the Putty SSH tunnel



1. Click on the 'Connection' →'SSH' → 'Tunnels' item in the left tree
2. The 'Source port' to enter is the port that VNC will use locally
   - This is the 'local VNC port' which is running Putty
   - It is what the VNC viewer will attach to
3. The 'Destination' is the remote host
4. 'Destination' value has the form
   - <remote IP>:<VNC remote port>
5. **REMEMBER press the 'Add' button or it won't work**
   - Shown in red arrow

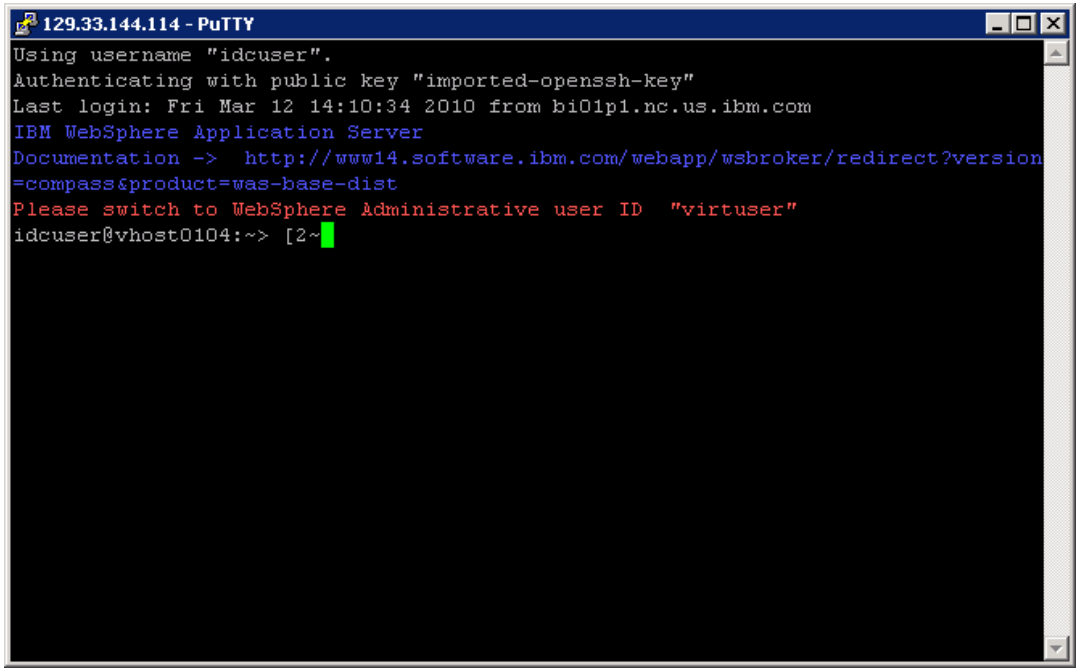
- Your screen should look similar to above
- In this example
  - The remote host IP is 129.33.144.xxx
  - The port the VNC server is listening on is 5901

Save the Putty set-up for the session



1. Go the initial Putty screen at ‘Session’
2. Make sure the name you want is in the “Saved Sessions’ box
3. Press the ‘Save’ button so you don’t have to this configuration again
4. Press the ‘Open’ button

The SSH tunnel is now open

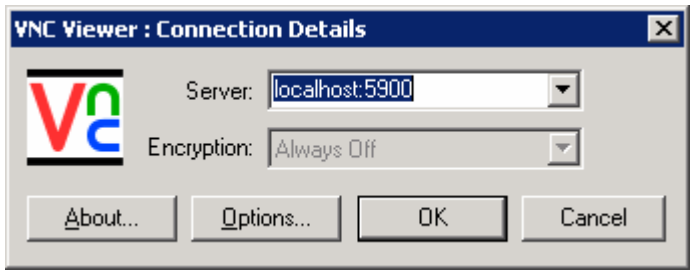


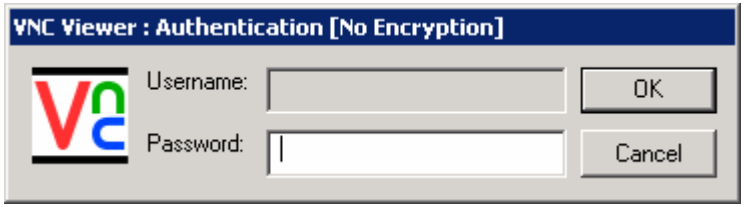
- After clicking ‘Open’ an SSH session will be created
- This will open a shell window
  - Like the screen to the left
- The SSH tunnel is now active

- NOTE: if there is no activity in the SSH session then it will time-out and you will be logged out
- To prevent this, run a program in the SSH tunnel window
- I use ‘nmon’ which displays the resource usage
  - See http://www.ibm.com/developerworks/aix/library/au-analyze_aix/

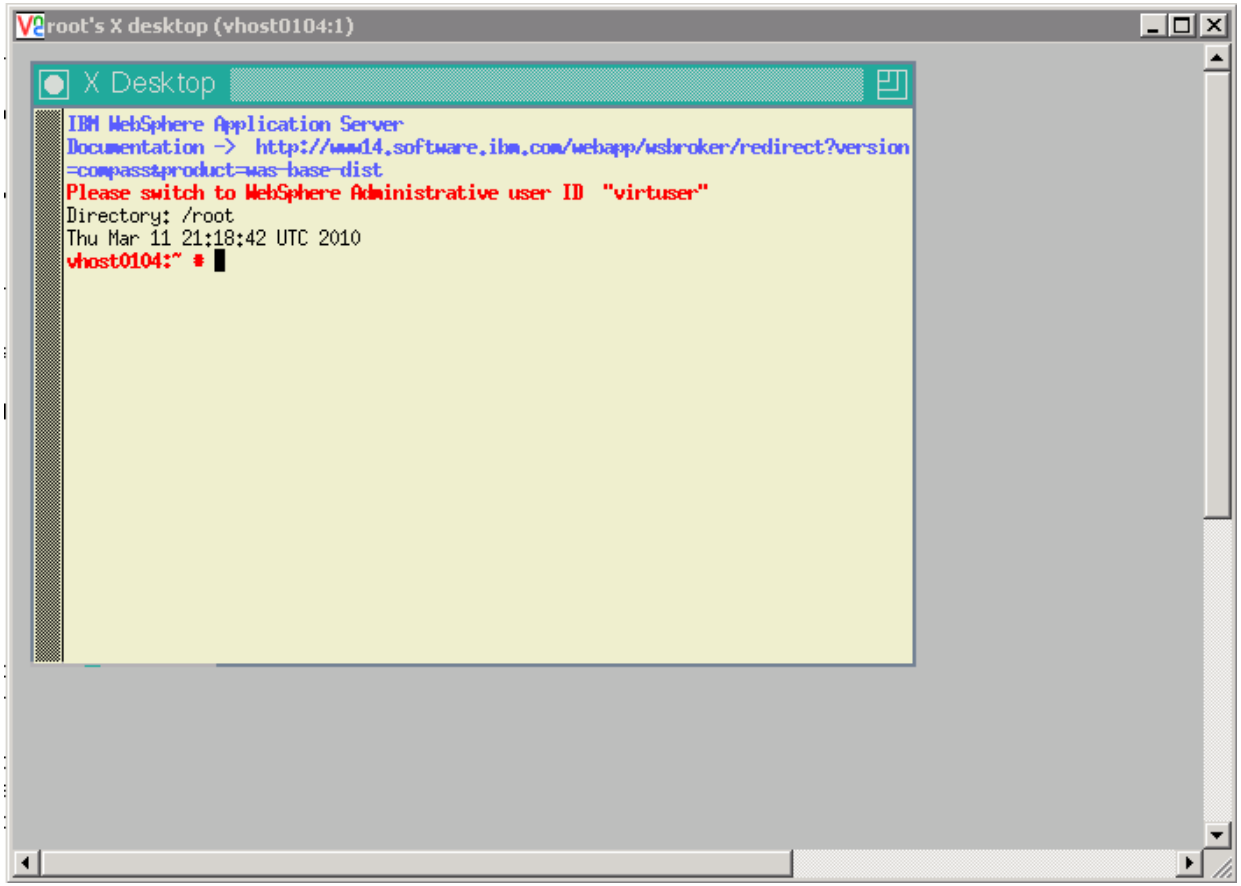
Start the local VNC viewer

1. Start the VNC viewer
2. Use the SSH tunnel by entering the following value for the ‘Server’
   - ‘localhost’:<local VNC port>
   - For example, the VNC viewer will attach to port 5900 locally
3. You will be requested to enter the VNC password that you created on the VNC server



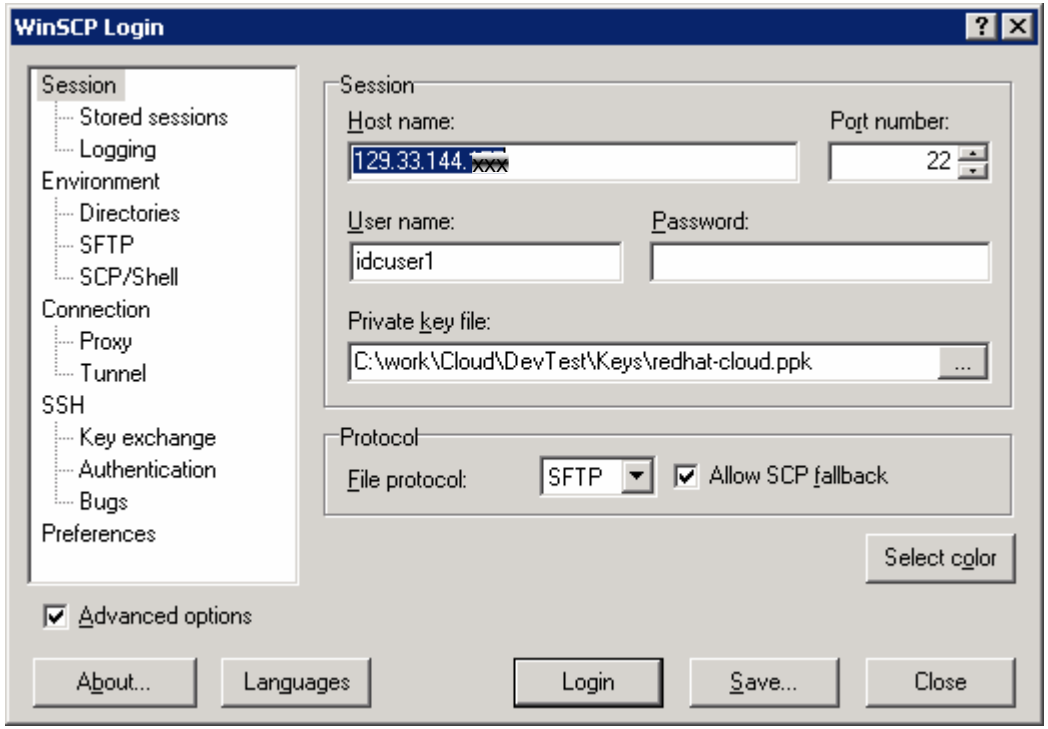


Voila



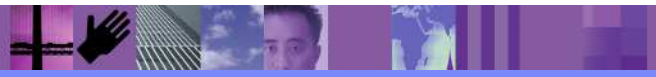
- You will see a basic X windows session if you did not do the “Get the window manager working for VNC” step

A tool for transferring files to the VM



- The WinSCP program works for transferring files to / from the VM
- Follow similar steps to the Putty set-up
  - It uses the Putty private key that was generated

Background



Example VNC X-windows command lines

- Here are some example command lines for vncserver
  - Xvnc :1 -desktop X -httpd /usr/share/vnc/classes -auth /root/.Xauthority -geometry 1024x768 -depth 24 -rfbwait 120000 -rfbauth /root/.vnc/passwd -rfbport 5901 -fp /usr/share/fonts/misc:unscaled,/usr/share/fonts/local,/usr/share/fonts/75dpi:unscaled,/usr/share/fonts/100dpi:unscaled,/usr/share/fonts/Type1,/usr/share/fonts/URW,/usr/share/fonts/Speedo,/usr/share/fonts/truetype,/usr/share/fonts/uni,/usr/share/fonts/CID –noreset
  - Xvnc :1 -desktop vhost0105:1 (root) -httpd /usr/share/vnc/classes -auth /root/.Xauthority -geometry 1024x768 -depth 16 -rfbwait 30000 -rfbauth /root/.vnc/passwd -rfbport 5901 -pn