

# How to Tunnel VNC through SSH on a Windows Computer

SSH tunneling is a flexible and secure mechanism for accessing network services behind a firewall. It can be used for accessing VNC servers in our Faculty from your office PC.

## How secure is VNC:

Although VNC encrypts VNC passwords sent over the net, the rest of the traffic is sent as is, unencrypted (for password encryption, VNC uses a DES-encrypted challenge-response scheme, where the password is limited by 8 characters, and the effective DES key length is 56 bits). So using VNC over the Internet can be a security risk.

## What you need:

1. Have PuTTY program ready. It is a free implementation of SSH for Win32 and UNIX platforms. You can download it from <http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html> and save it to your local Windows (e.g. C:\Program Files\).
2. Create a shortcut to your Desktop.
3. Have VNC Viewer program ready. You can download it from <http://www.tightvnc.com/download.html> and install it to your office PC.
4. An account to login to any Linux workstation/PC cluster (Research machine).

## To start a VNC server

1. Using PuTTY to login to one of the research machines, e.g. “tdgrocks.sci.hkbu.edu.hk” as the host to connect to. First, make a simple SSH connection and start the **vncserver** on the remote machine:

```
[username@tdgrocks] $ vncserver
```

Note: If this is the first time you run vncserver, the software will ask you to select a password for subsequent VNC sessions. Remember to select a password which is difficult to guess.

2. The program will then show the display number on which your desktop is run. For example,

```
New 'tdgrocks.sci.hkbu.edu.hk:3 (username)' desktop is
tdgrocks.sci.hkbu.edu.hk:3
```

It means that your session will run on display 3 of server tdgrocks.

## Using PuTTY to Build SSH Tunnel on Command line (at your office PC)

1. To open an Command Window, click **Start** -> **Run**, and then input “cmd”
2. At the command prompt (where the PuTTY program is located), e.g.

```
C:\Program Files\Putty> putty -L 5903:tdgrocks.sci.hkbu.edu.hk:5903
```

Where putty -L [Source port + displace #]:[destination server]:[destination post + displace #]

3. Login to the gateway server (any server running with sshd; in this case, 'tdgrocks.sci.hkbu.edu.hk') when prompted. You can minimize the active PuTTY session and keep the program running.
4. Run VNC Viewer on your PC, and enter "localhost:3" as the Computer to connect to. VNC maps display 3 to port 5903, which SSH is tunneling through its own port (port 22).
5. You should terminate your VNC session after you have finished your work. To terminate your VNC session running on the UNIX server, run the command

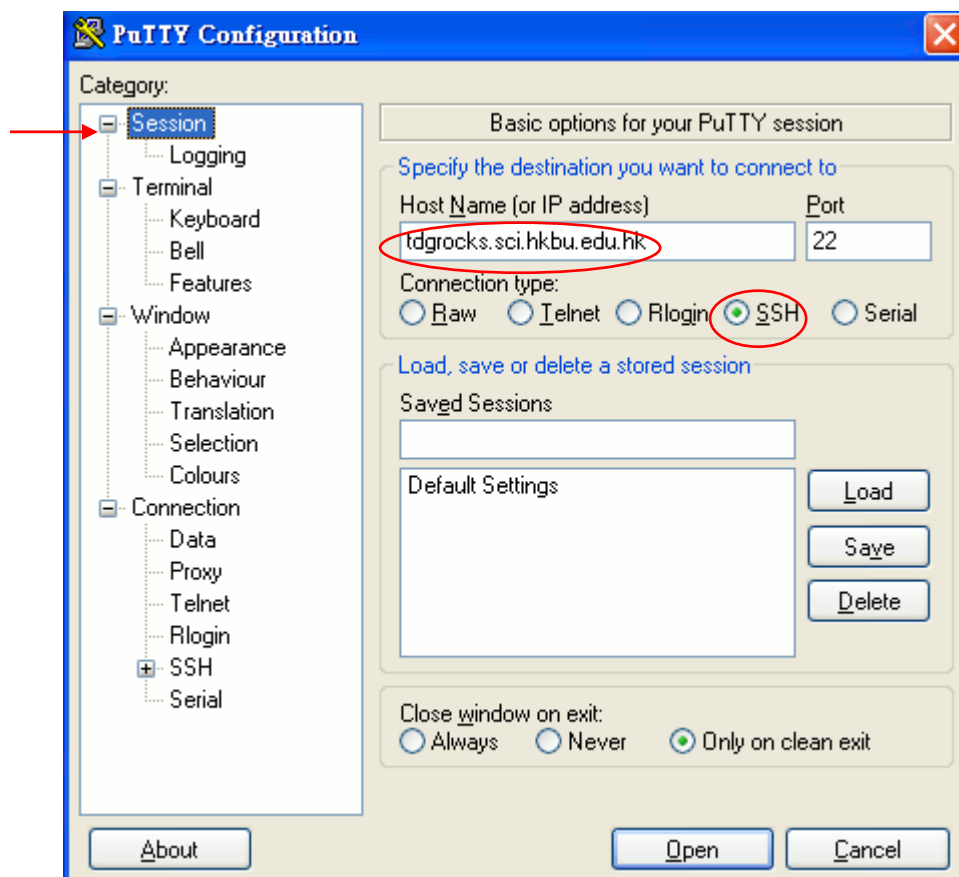
```
[username@tdgrocks] $ vncserver -kill :<display #>
```

(in this case , it is 3. You should see this output: "Killing Xvnc process ID 15783")

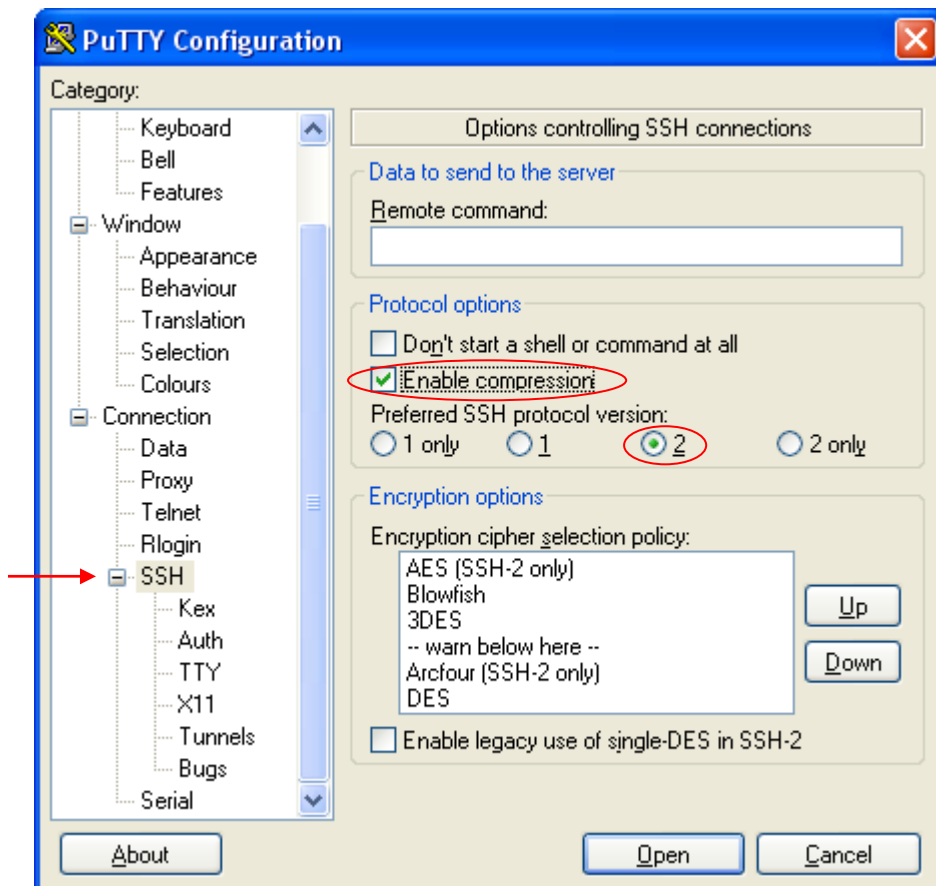
Or

### Setting up PuTTY and Build SSH Tunnel (at your office PC)

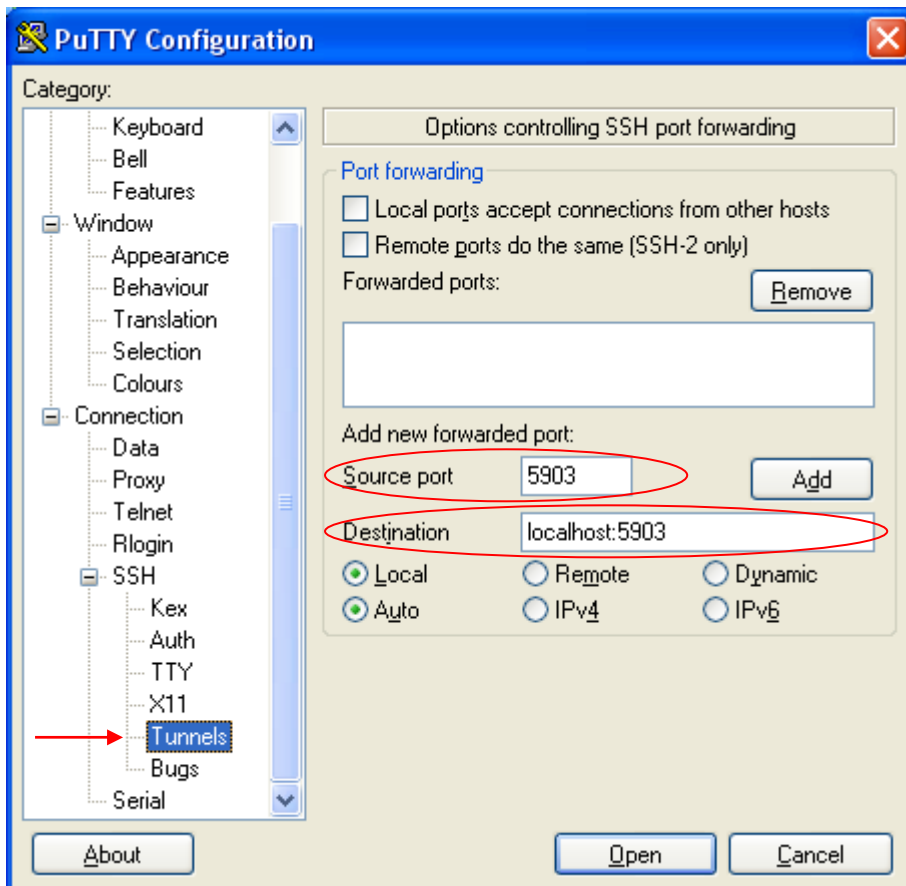
1. Next start to make a second connection, double click the **PuTTY** icon (shortcut) on your desktop to start the program as shown in the following picture:



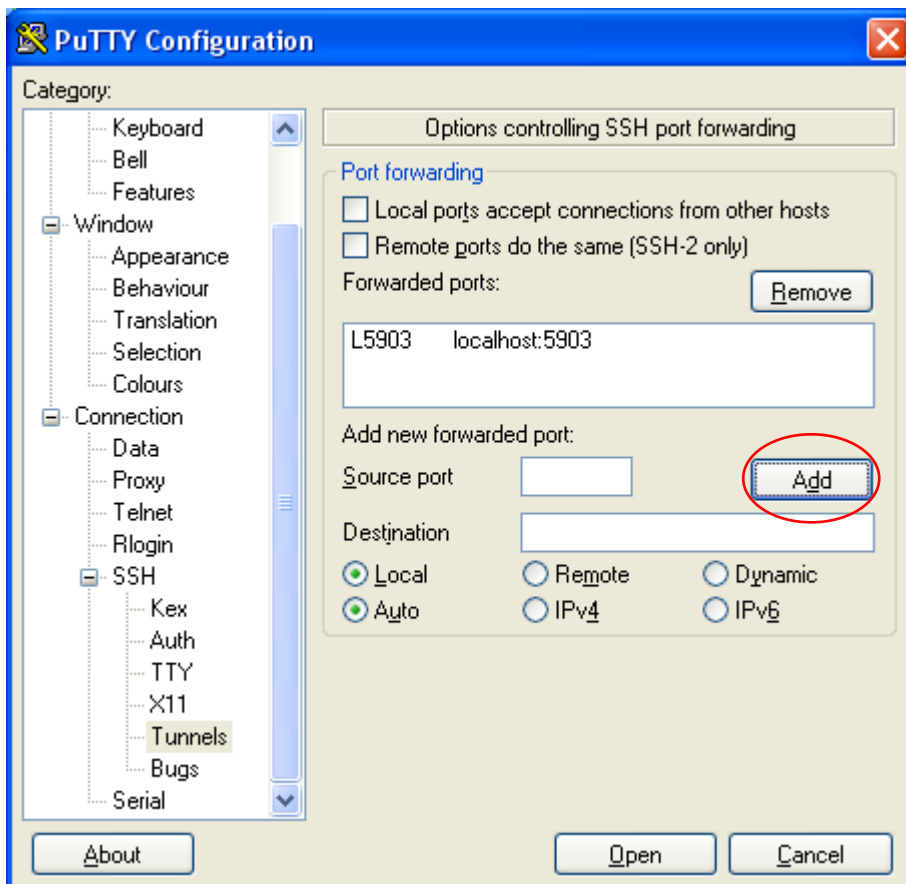
2. Click on **SSH** subcategory, enable compression and select protocol level 2 as the default for better security:



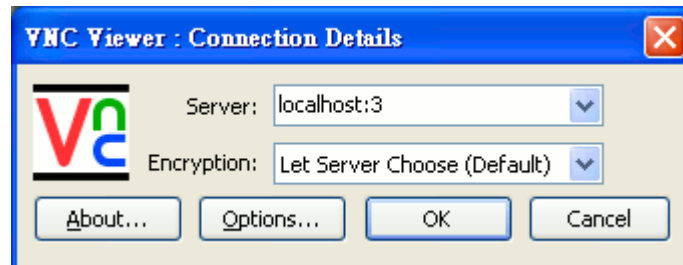
3. Next, click **Tunnels** and input the **Source port** and **Destination** as shown below:  
(In general, a VNC client communicates with a VNC server by connecting to TCP port  $<5900 + display\ no>$  on the UNIX server. In this case, your VNC server is running on `tdgrocks.sci.hkbu.edu.hk:3`, your VNC client communicates with the VNC server by connecting to TCP port  $(5900 + 3 =) 5903$  on server `tdgrocks`.)



4. Click **Add**, the results are displayed like this:



5. Next, click **Open**, and login to tdgrocks. Your tunnel is now active.
6. Finally, run VNC Viewer on your PC, and enter "localhost:3" as the Computer to connect to. VNC maps display 3 to port 5903, which SSH is tunneling through its own port (port 22).



7. You should terminate your VNC session after you have finished your work. To terminate your VNC session running on a UNIX server, run the command

```
[username@tdgrocks] $ vncserver -kill :<display #>
```

(In this case, it is 3. You should see an output similar to this one: "Killing Xvnc process ID 15783")

## How to change your VNC password?

To change the VNC password, run

```
[username@tdgrocks] $ vncpasswd
```

on the server.

## How to start Gnome Session instead of X over VNC?

Edit the file `~/.vnc/xstartup`

At the top you may find the following:

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

Uncomment those two lines as indicated. You can get a Gnome session in your next vnc connection.