



Connecting to your IBME Linux Desktop from an offsite OSX client

This document outlines the steps required to allow access to a Linux desktop located on the IBME network from 'outside' – using OSX.

PRE-REQUISITES

You will need an ENG domain account that is configured for remote access – this is not automatic and your supervisor's permission will need to be supplied to IBMEIT to enable this. You will also need to contact IBMEIT to have your PC properly configured for remote desktop access. Do not simply enable "Allow remote desktop connections" because this can be insecure.

1. Please email thehub@eng.ox.ac.uk to have your PC properly configured for remote desktop access.
2. If you are *outside* the University networks, you must first connect via Oxford VPN – <https://regsiter.it.ox.ac.uk/self/index>.

For the IBME Linux desktop (host)

SSH Server must be running on the host (this should already be setup if the IBME desktop has been configured by IBME IT)

- Download to the desktop the relevant package for your Linux distro from <https://www.nomachine.com/download/linux&id=1>

Note: ensure that you select the correct architecture (i.e. x86_64, amd64)

The rest of the instructions in this guide relate to examples for Ubuntu.

FYI (More detail here if required on command syntax for other OS's
<https://knowledgebase.nomachine.com/DT10R00166#2.4>

- Then go to a terminal – cd to the download directory and run:

e.g. if Ubuntu - format is:

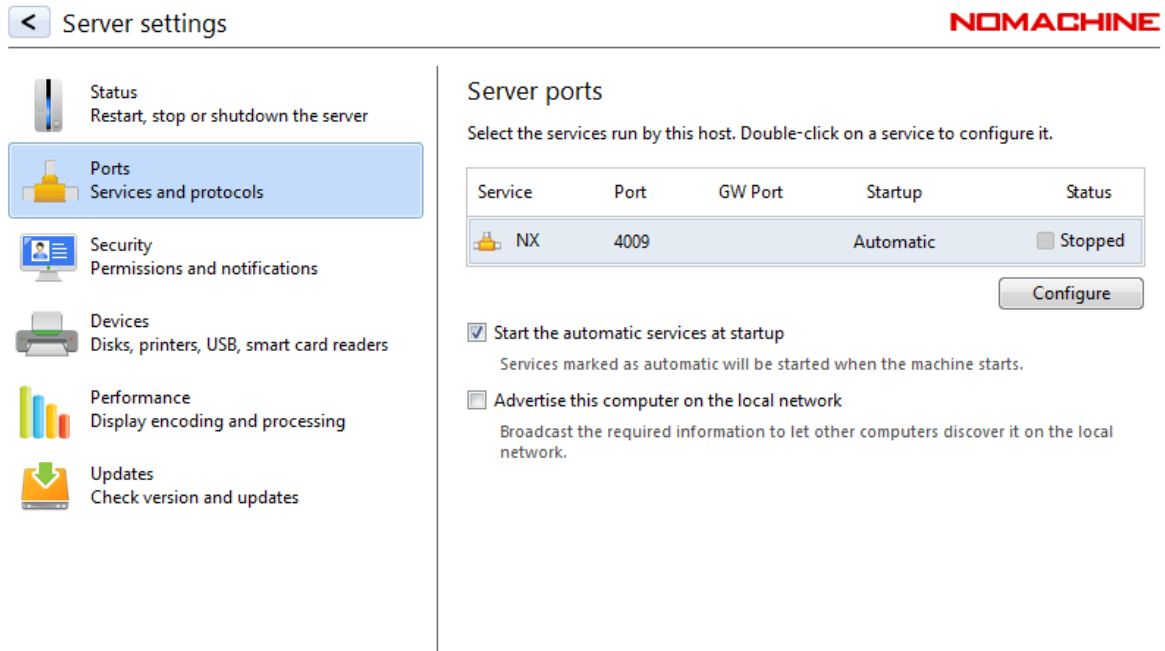
```
sudo dpkg -i <pkgName>_<pkgVersion>_<arch>.deb
```

e.g.

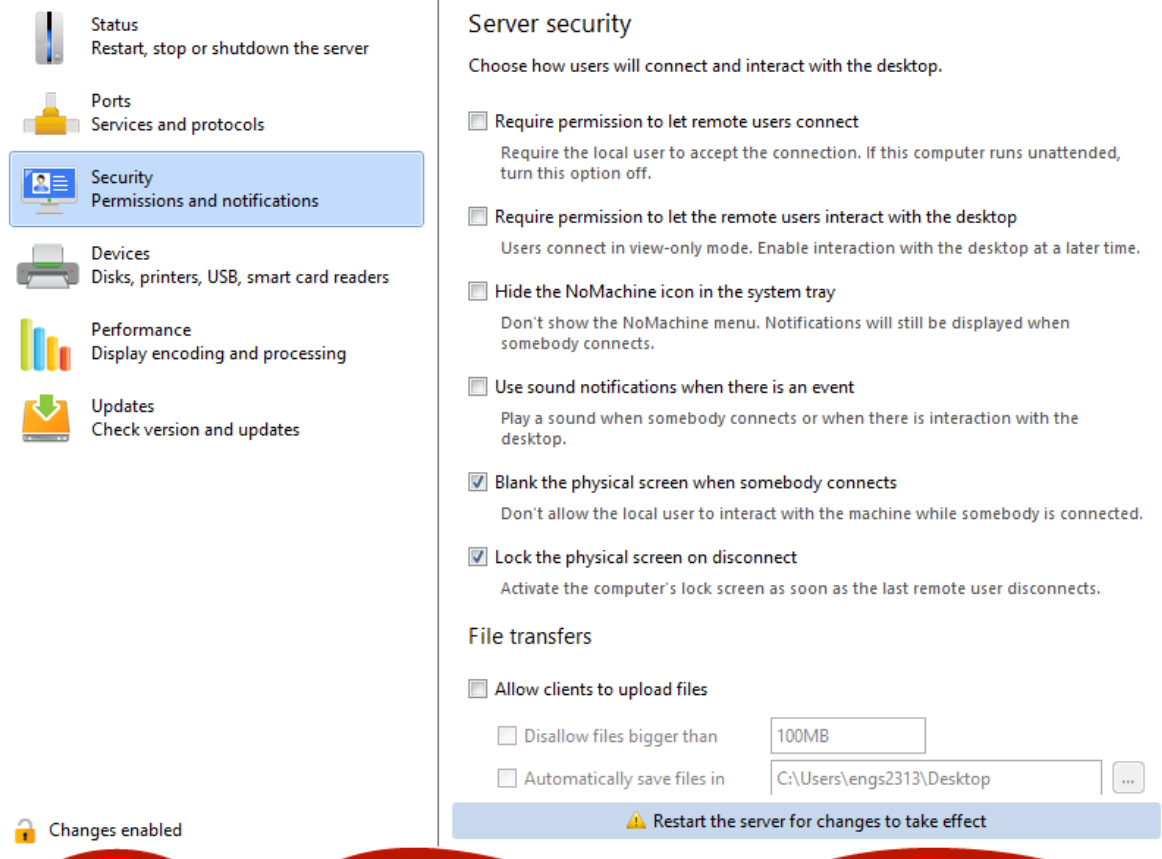
```
sudo dpkg -i nomachine_7.4.1_1_amd64.deb
```

- Once this has installed.

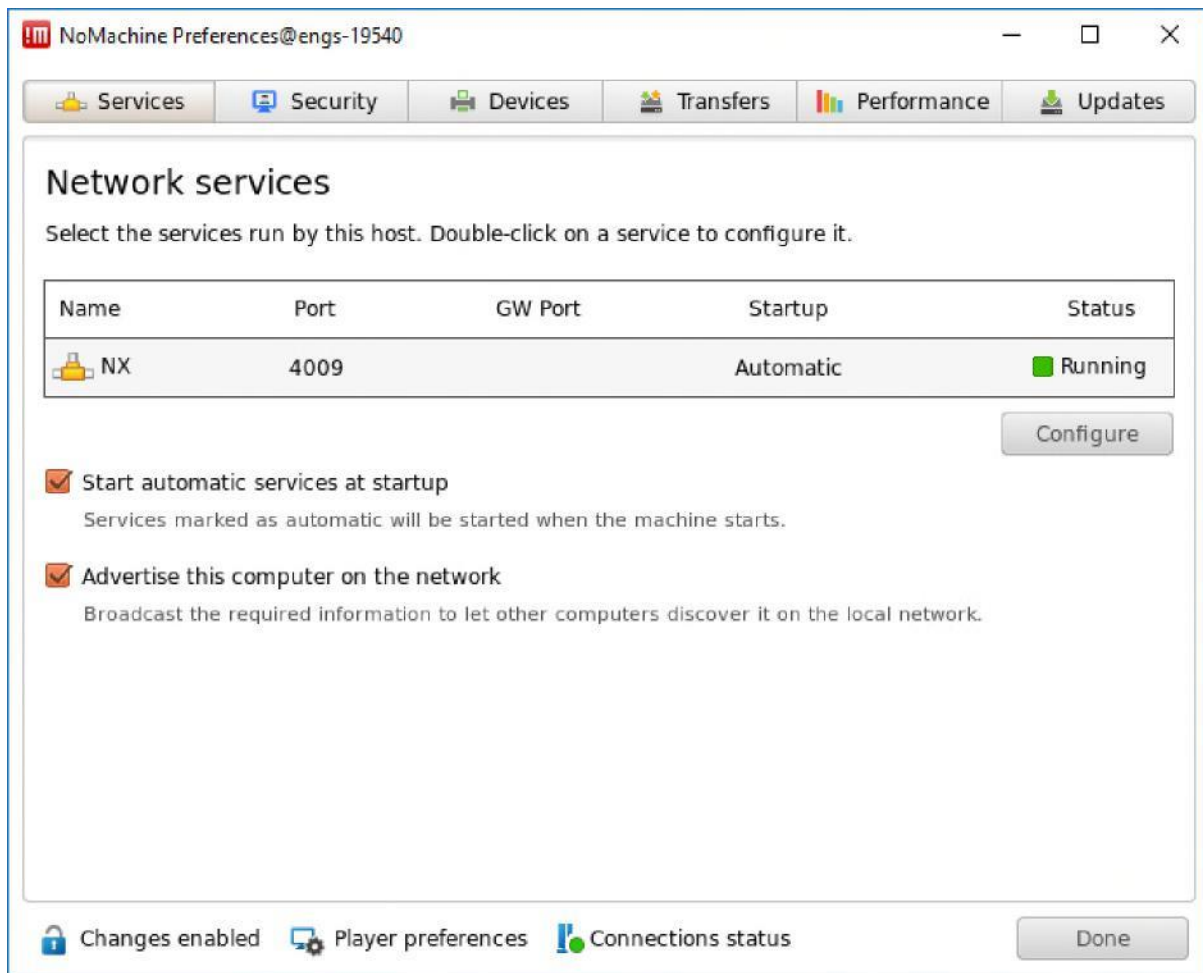
e.g. on Ubuntu - Shortly afterwards, in your system tray (up by the clock), you should see a small icon like this **'!M'**. If you right click this and select **'show server status'** and then click **'Ports'** on the screen that appears left.



- when you attempt to make the first change to the settings you will be asked to enter your Linux password for the desktop.
- when you click on the **port section** and select the port itself and the click configure, once you have changed the port to **4009** and set the start mode to automatic just click the back arrow in the top left.
- Then make sure the tick is in the Start the automatic service at startup and Advertise is unticked as per the screenshot above.
- Then click the security section and change the settings to match the following screenshot

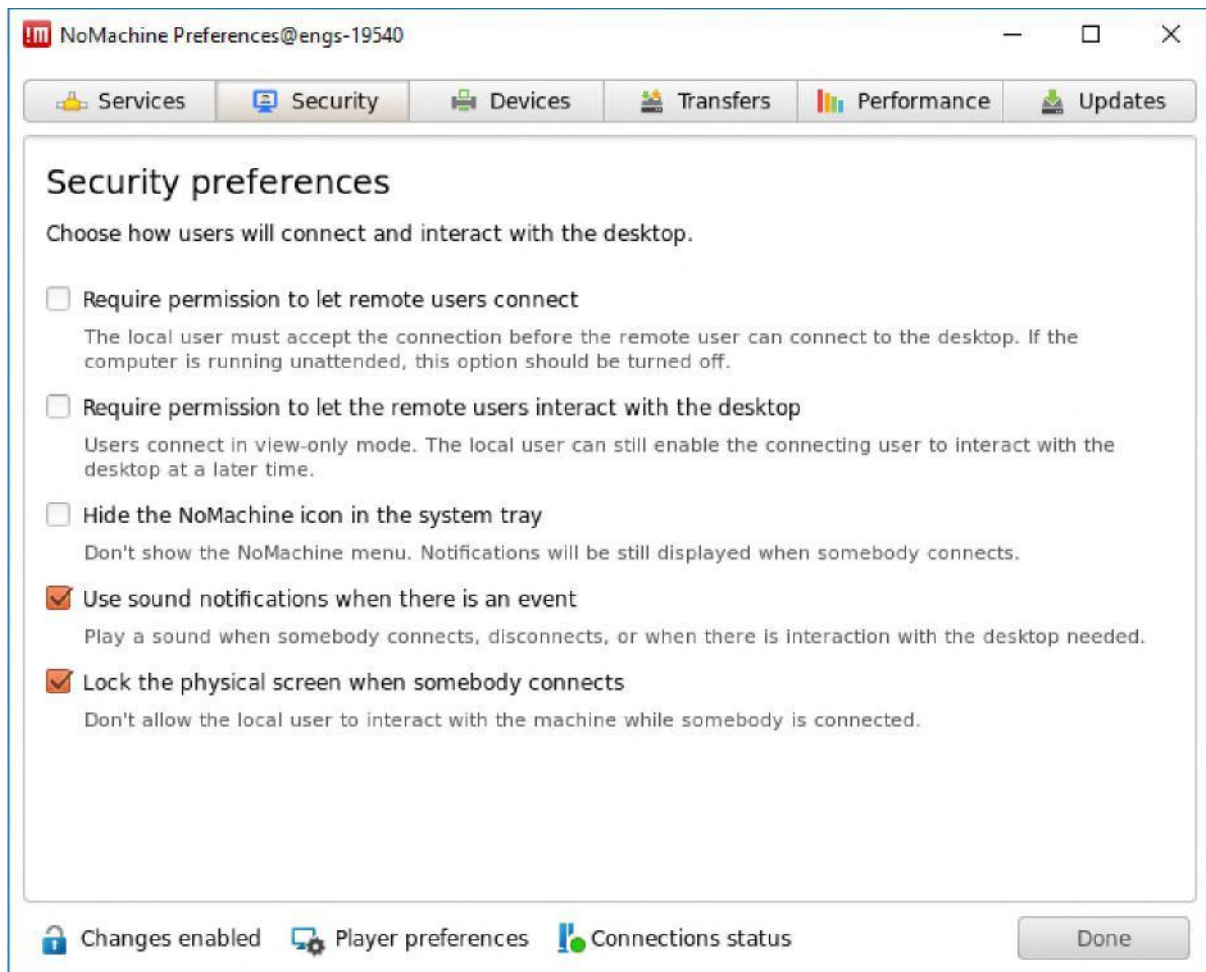


- When you have completed all changes you can then just click the notification that appears **'Restart the server for changes to take effect'** as shown in screenshot above and you will be prompted to enter your Linux password again. After a short time the restart notification will disappear. (Therefore you shouldn't need to issue the two sudo commands on page 5, but they are included just in case for reference or you have an older version)
- You can then close the gui setting config.
- The '!M' icon should still be visible in the system tray (it may take a little while to re-appear)
- Depending on your version of NoMachine you may see a screenshot similar to the following (Note: layout may be slightly different depending on the version of NoMachine) e.g. you may have to click 'server preferences' before the following screen is shown or access a different layout in a newer version.



- Click Configure to change the port to be something other than the default of 4000 (i.e. 4009).
- Ensure that Start automatic services at startup is ticked.
- Untick Advertise this computer on the network.

On the Security tab:



- Ensure that Require permission to let remote users connect is unticked.
- Ensure that the Lock the physical screen when somebody connects is ticked.
- Click Done.

Additional commands for reference only if above not working or possible on your version

- To ensure that the new port is being used – restart the nxserver service/daemon:

```
sudo /usr/NX/bin/nxserver --restart
```

- To check, type:

```
sudo netstat -pant
```

you should see several lines of output, but check for:

```
tcp    0    0 0.0.0.0:4009      0.0.0.0:*        LISTEN  9305/nxd
```

The important thing to check is the port number listed (in this case, 4009).

For reference, the NX logs are here:

```
/usr/NX/var/log
```

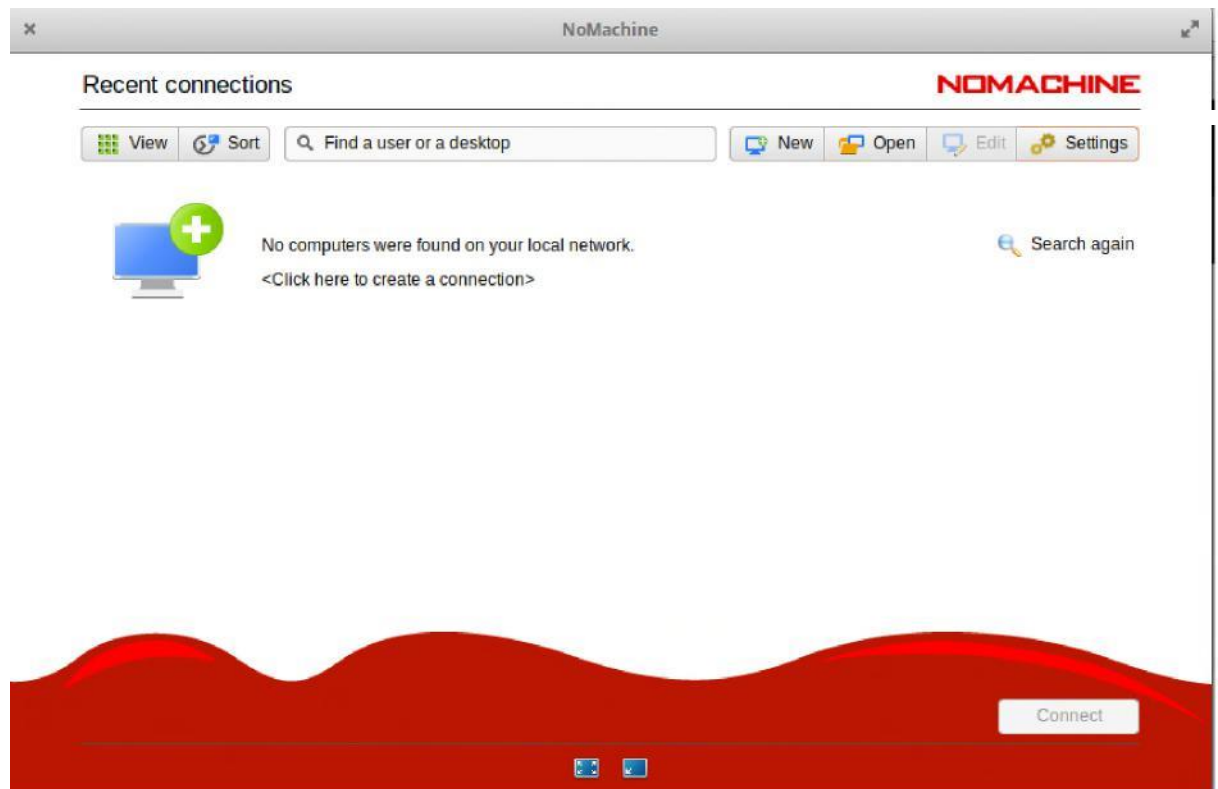
For the remote OSX system (Client)

- Please download and install the appropriate NoMachine NX client:
<https://www.nomachine.com/download/download&id=7>

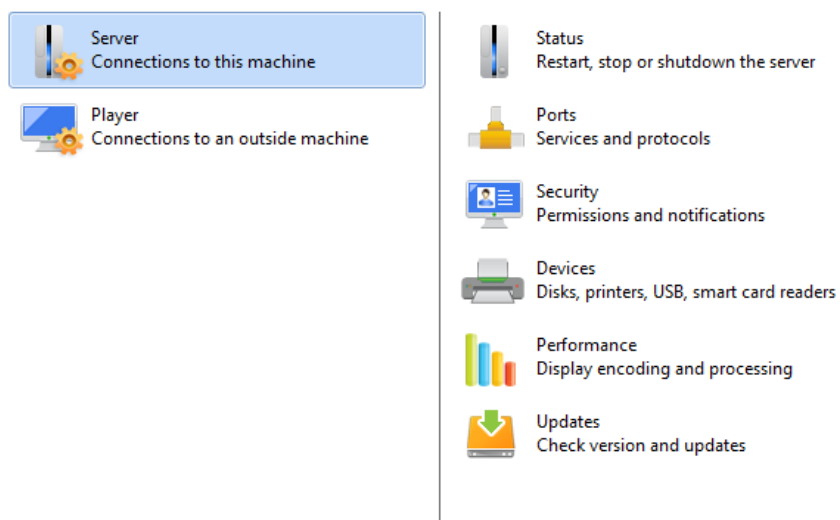
Note: the following screenshots may be within a different area of the NoMachine client settings on newer versions.

- By default the installation enables the NoMachine server to launch – DISABLE this by following the screenshots below, as it is not required on the OSX client.

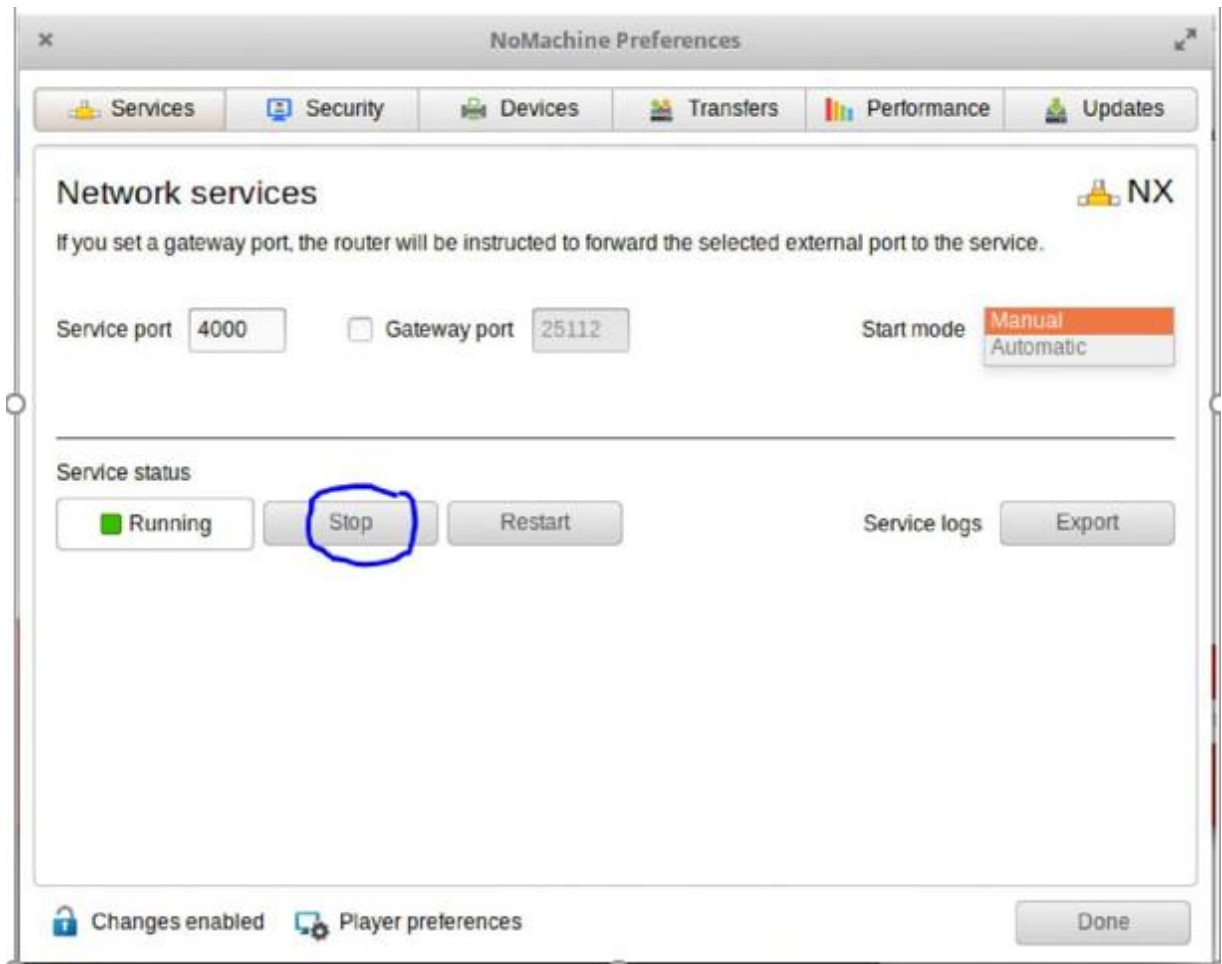
Launch NoMachine NX:



Click on Settings.

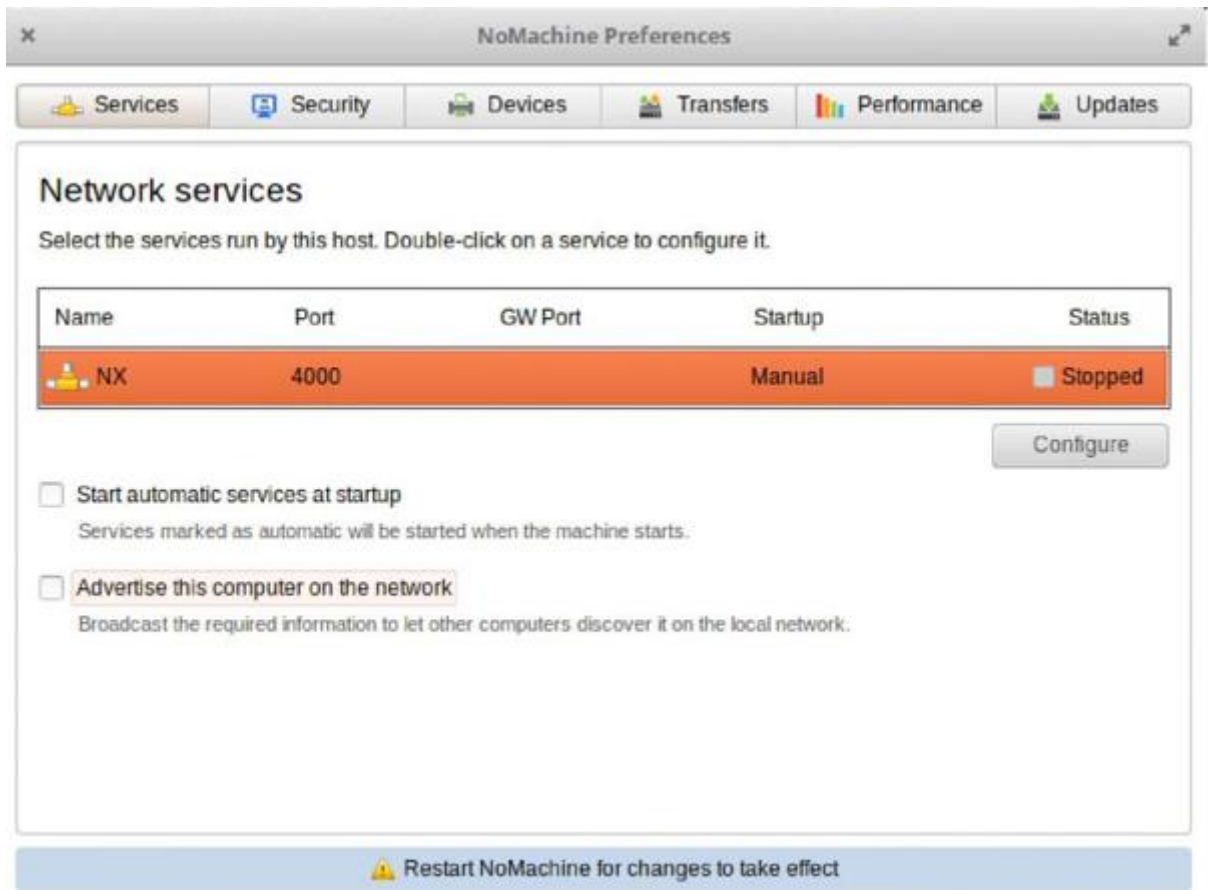


Click on Ports and then Configure (depending on your version layout)



Set to Start mode to **Manual** and click Stop to stop the service from running.
Click Done.

This will ensure that the NoMachine server daemon will not auto start on boot.



- Remove the tick from Advertise this computer on the network. And click Restart NoMachine for changes to take effect.

Note: To reiterate, the above screenshots may be within a different area of the NoMachine client settings on newer versions.

As you will be accessing the IBME network using SSH gateways, your connection has to be ‘tunnelled over SSH’ using a double-hop

- If you are connecting from outside the University network, connect via VPN first. (There are instructions on the IT Services website: <http://help.it.ox.ac.uk/network/vpn/index> - **NB. you still need to connect VPN if you are connected to eduroam**)
- Create an ssh link from your remote OSX client to your ibme linux desktop through the ibme ssh gateway. To do this, open up a terminal session.

In the terminal, specify the SSH command to **connect**. The syntax is as follows:

```
ssh -L 4009:localhost:4009 -J <userid>@ibme-ssh-gateway.eng.ox.ac.uk <linux-desktop>.eng.ox.ac.uk
```



Where *linux-desktop* is the hostname of your IBME Linux PC e.g. usually engs-XXXXX;

And where *userid* is your oxford-username.

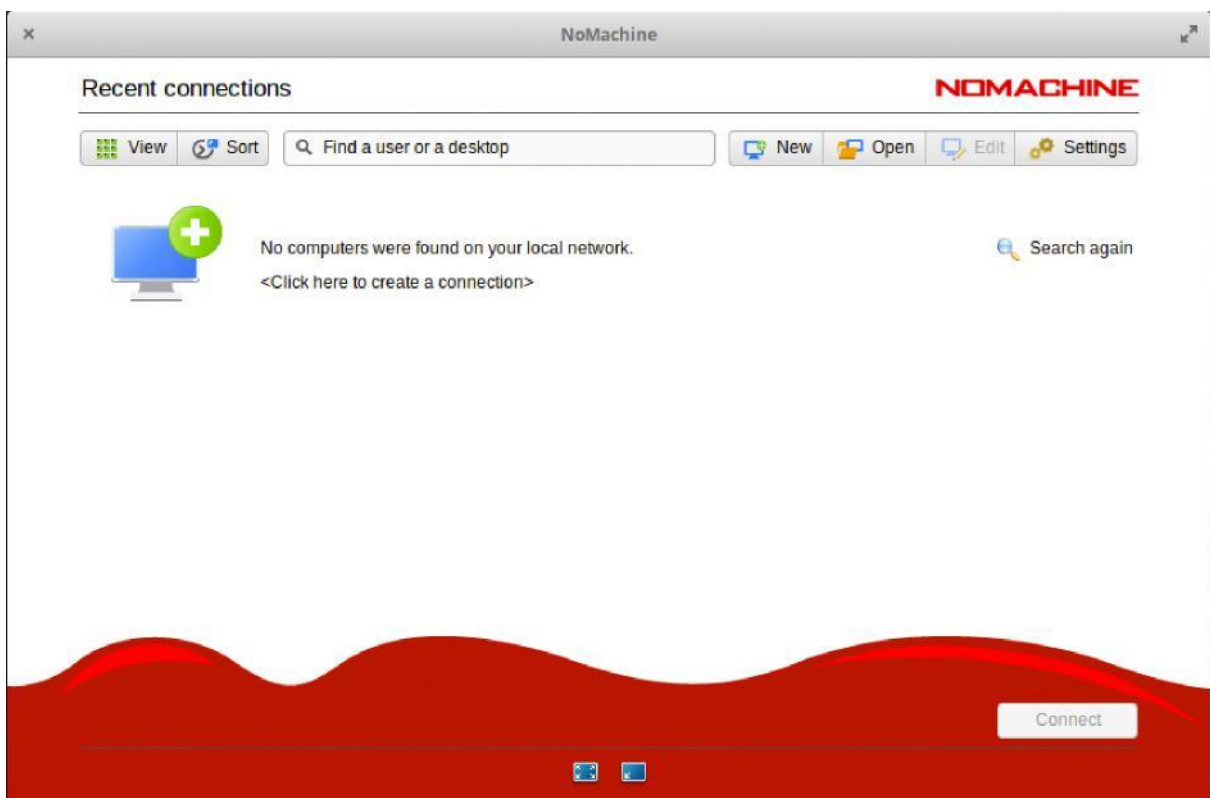
Note: the value of 4009 will match the NoMachine port number that you will connect to with your Mac shortly when you launch NoMachine client.

When running the above ssh command. You will be prompted for a password (this will be the one you use for the IBME eng domain and your linux pc); you will need to enter this twice.

Once connected – leave this terminal window open.

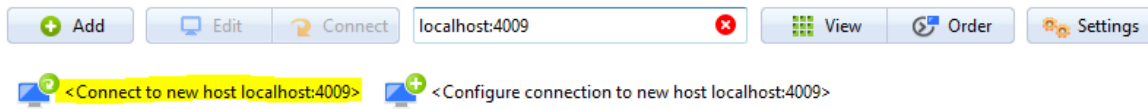
This creates the tunnel and port forwarding from your Mac to your IBME Linux desktop via the SSH Gateway.

- Now launch the NoMachine NX client on your Mac:



Navigate to the screen above.

To launch your session, type `localhost:<port#>` i.e. 4009 in the bar at the top (it will create an additional entry in the list shown – **Connect to new host localhost:4009**) e.g. as shown here:



At this point, you should be prompted to enter credentials to logon to the Linux desktop in the following format. Substituting in your oxford-username as shown here, along with your IBME eng domain password:

Please type your username and password to login.



Username

Password

☐ Save this password in the connection file

Cancel

Login

Once the credentials are entered and you click login, the Linux desktop will appear – (but may take a little while to connect). You can then login to the Linux desktop itself as you would if you were directly in front of it.