

# Practical 1: Using `ssh` to connect to the CSF, running some basic commands and opening a GUI notepad

## Overview

We're going to:

- Connect (log in) to the CSF using a `ssh` (*secure shell*) program from your desktop.
- Run some basic commands
- Check we can run a GUI notepad directly on the CSF (important later in the course!)

Note:

- Classroom-based courses: Please ensure you have a charged-up working laptop. An iPad-like device is not suitable.
- PC Cluster / training room-based courses: You can use your laptop if you prefer (e.g., Mac owners) but we don't have time today to give technical support for *your* equipment. If it isn't set up correctly, use the training room PCs. Follow the Windows / Linux / MacOS instructions as required.
- Zoom courses: We expect that in most cases you will be using your own laptop/PC. We will do our best to ensure you can complete the exercises, but time for technical support in relation to your PC/laptop is limited.
- Commands to be entered at the command line are in `monospace` with text in ***bold italics*** to be replaced as described.
- On the CSF the Linux `man` command shows manual pages for a command, e.g., enter `man ssh` to see the manual pages for `ssh` (use `space` for next page, `q` to quit)
- Tip: On the CSF the up and down arrows can be used to scroll through previously entered commands. Press `tab` while entering a command to auto complete it.
- **It is usually possible to paste into a terminal window**, e.g., by using the middle mouse button (sometimes the right mouse button)
- **IMPORTANT: If you are OFF CAMPUS - you MUST have the University GlobalProtect VPN installed and running before you start this exercise.**
  - University laptops already have it installed.
  - If using your own PC/laptop and you've not already installed GlobalProtect, please visit <https://www.itservices.manchester.ac.uk/ourservices/popular/vpn/>

Instructions (please note: some parts are for everyone, and some are for Windows, Linux or Mac)

**1. Everyone: Open a *Terminal* application on your PC**

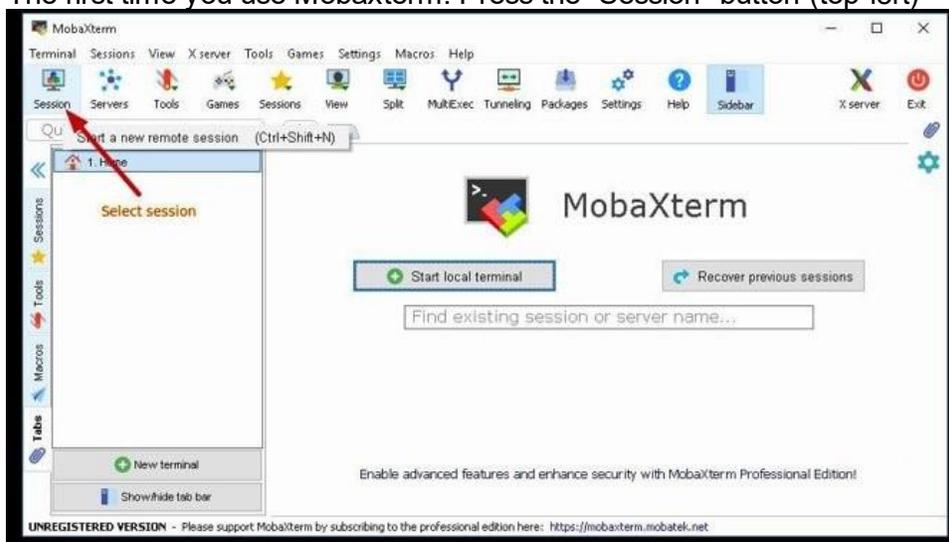
**Follow the instructions below carefully for your preferred OS (some sections are specific to Windows, Linux or MacOS, some are for everyone to do):**

**Windows users only:** If you have not done so in advance please download and install MobaXTerm (portable edition) via the blue button here:

<https://mobaxterm.mobatek.net/download-home-edition.html>

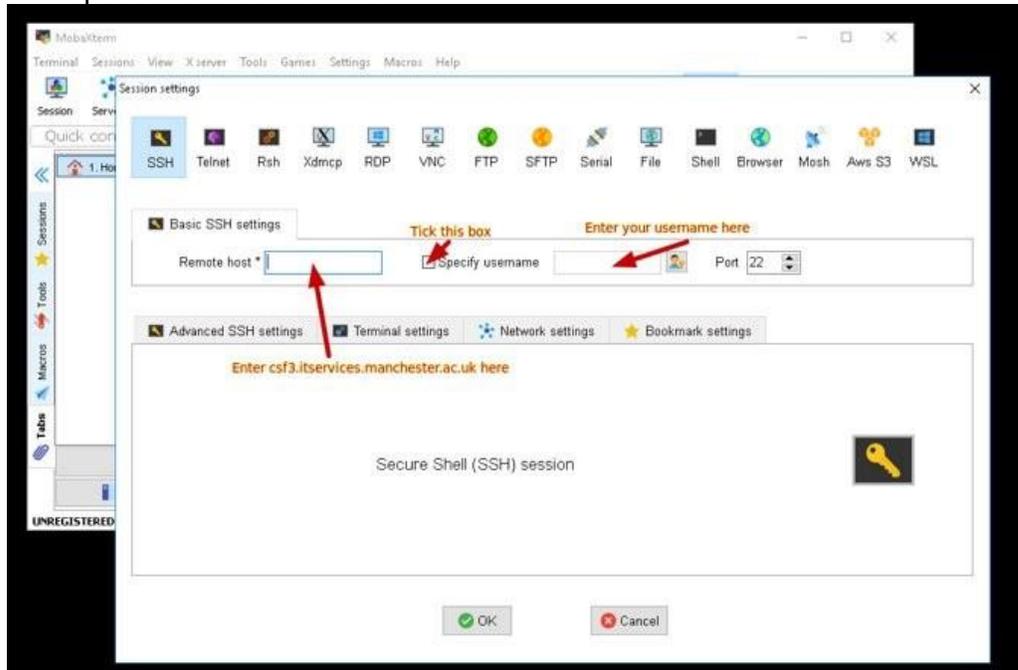
- This is a free Terminal and SSH program for Windows and can be installed **without Administrator access**:
- Unpack the MobaXterm\_Portable\_vXX.X.zip file (right-click, Extract all...). We recommend you can unpack it in your P-Drive
- Go in to the MobaXterm\_Portable\_vXX.X folder created during unpacking.
- Run the MobaXterm\_Personal\_XX.X.exe program.

i. The first time you use Mobaxterm: Press the “Session” button (top-left)



Continued below ....

ii. Then press the “SSH” button



iii. Fill in the details:

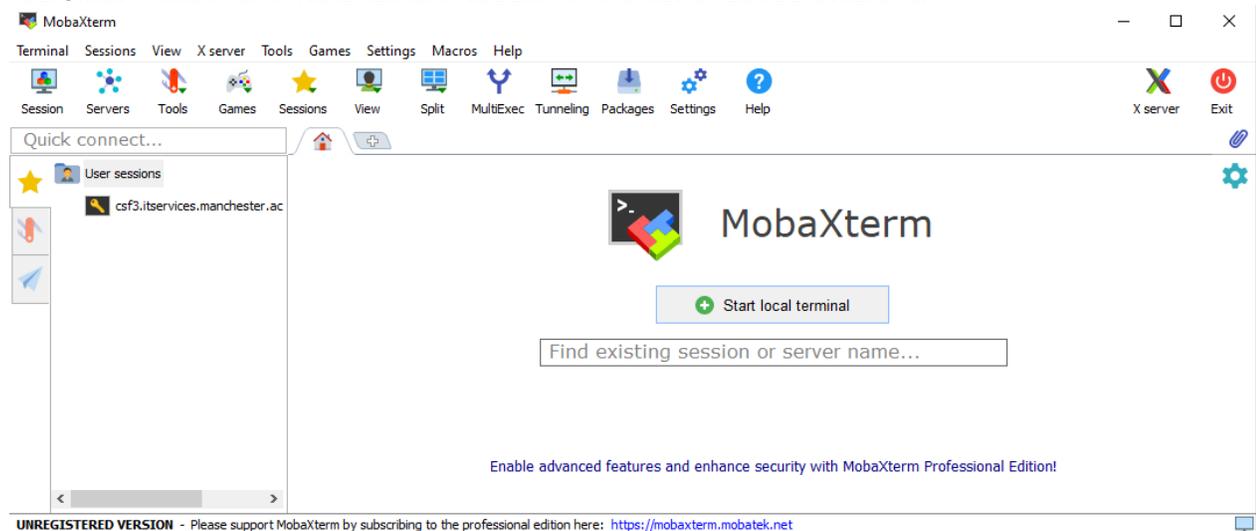
Remote host: `csf3.itservices.manchester.ac.uk`

Tick: Specify username

Type in **YOUR** username in the box (this is NOT your email address, but your username which is usually about 8 characters – like `mabcxyz1`)

Press OK to save the “Session” - this saves the CSF address and your username. It then begins to log you in to the CSF (see below.)

Note: For *future* logins to the CSF, you simply need to double-click the “`csf3.itservices.manchester.ac.uk`” session in the list of saved sessions:



**Linux and Mac users only:**

- **Linux users only:** Open a Terminal using the menu: Applications > System Tools > Terminal.
- **MacOS users only:** If you don't already have it, download the free XQuartz program from <https://www.xquartz.org/> (this is an X server that used to be supplied in MacOS but has been open-sourced. Get the XQuartz-2.8.5.pkg package and install it using the defaults in the installer.) Then: Open a Terminal using the menu: Go > Utilities > Terminal, or if that's not available, right-click on the XQuartz icon and select the Xterm.

## 2. Everyone: Use your ssh program to connect to the CSF

- **Windows:** In MobaXterm, during the "session" setup, it will begin to log you in. In future uses of MobaXterm, double-click on the **CSF3** session in the left-hand menu (see image above.)

- **Linux:** In your Terminal window (see above) enter:

```
ssh -X username@csf3.itservices.manchester.ac.uk
```

- **MacOS:** In your Terminal window (see above) enter:

```
ssh -Y username@csf3.itservices.manchester.ac.uk
```

replacing **username** with your University IT username, and press return (don't forget the **-x** flag where X is UPPERCASE.)

- If asked:  
Are you sure you want to continue connecting (yes/no)?
- Enter:  
yes
- Enter your **central IT password** when asked. **Note: characters are not displayed** while entering your password – this is for security so nobody can look over your shoulder - so you **must type carefully!**

## 3. Everyone: You should now be interacting with the *remote* CSF login node via ssh. Run:

```
hostname
```

to verify you are interacting with the CSF, the response should be

```
login1.pri.csf3.alces.network
```

```
login2.pri.csf3.alces.network
```

(the CSF will put you on one of two login nodes to help spread the load).

You can also tell you are connected to a CSF login node as it is displayed in your prompt, e.g.

```
[username@login1[csf3] ~]$
```

This prompt is a good way of distinguishing between a terminal on the CSF and another one you might have open that is not connected to the CSF which you use for interacting with your PC.

4. **Everyone:** Run some basic commands (more on Linux commands later):

- Which folder ('directory') am I in?

```
pwd
```

- Set up (get a copy of) the training files – it will download some files:

```
module load training/RCSF
```

(enter central IT password if asked)

- Go to this course's examples folder and see where we are:

```
cd ~/training/RCSF/examples
```

```
pwd
```

- See what files we have (note the letter `l` below is a lowercase `L`, not a number one):

```
ls
```

```
ls -lh
```

5. **Everyone:** You need to be able to run a GUI on the CSF for creating files. Let's test that now as it will be important for the next exercise.

- Run the command:

```
gedit &
```

 (The `&` lets you carry on typing at the command-line.)

Ignore any warnings displayed at the command-line by `gedit`.

You should get a small notepad displayed (see below). We'll use this editor in the course.

