Linux
Connection Guide

by CIM Technical Support

ROYAL
HOLLOWAY
UNIVERSITY
OF LONDON

Linux.cim.rhul.ac.uk

Accessibility

Linux.CIM is our Linux Terminal Server used by the students of Computer Science, Information Security and Mathematics. It is accessible 24-hours a day from both the Royal Holloway Labs, and remotely from home or your University accommodation.

The only exception to this is during the university At-risk period, during which time the server may undergo maintenance.

The At-Risk period is scheduled from 7AM to 10AM every Tuesday.

During this period, the server may experience periods of instability or unavailability, and could undergo reboots. Please ensure that all work is saved and no active processes are left running in your session prior to the commencement of the At-Risk period.

Security and Keys

When connecting to a server for the first time, you will be presented with the servers Security key. This mechanism allows you to verify the server you are connecting to is indeed the genuine article, and not one that has been set up by a malicious third party for nefarious reasons (i.e: harvesting login credentials). We make the verification of this process easy for you by providing you with the key (see opposite page). This key should never change, and if you try to connect to the same server again and the key has changed, your client will warn you that it has changed and not allow you to progress.

Interfaces

There are two different ways of interacting with the Linux Server. The first and most common is via the Command Line Interface (CLI). The second is through the Graphic User Interface (GUI). While the GUI will be a more familiar interface to you, it is important that you learn the CLI for your studies at Royal Holloway.

While the GUI is a Windows-like environment, it is important that you don't use it for multimedia such as YouTube, Vimeo, videos or music.

On the following pages we walk through how to connect to the server from inside Royal Holloway, and from home or Royal Holloway accommodation, both to the CLI and the GUI.

If you're using the GUI and then decide you need to work in the CLI, you can access the Command Line from inside of Linux by using the 'Terminal'. This can be found in the Linux Start Menu on the bottom left
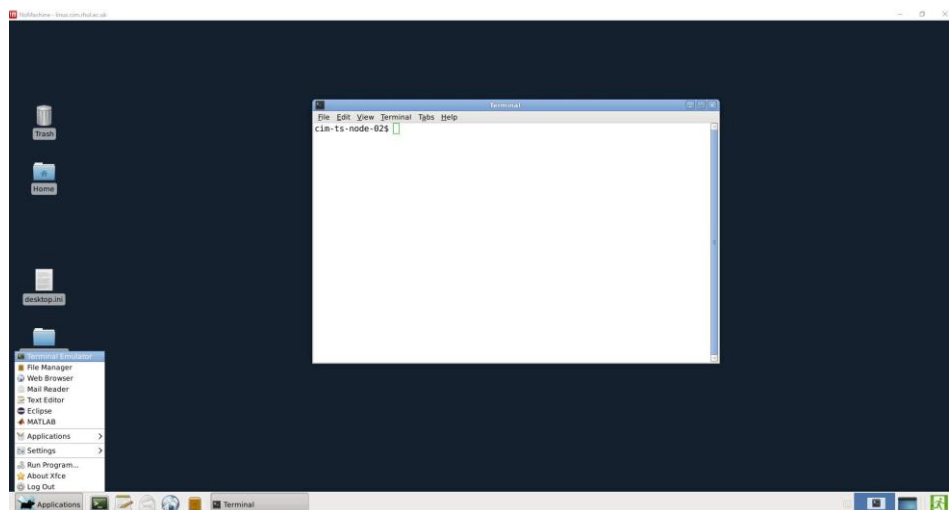
Account Information

Take note of your Home Directory Path - you will need this during the 'Introduction to Linux' workshop.

Log onto Linux.CIM using Computer Centre (CC) Credentials. These are the same as you use to access your Email, Moodle and Lab Computers.

Your username should be four letters / three digits (e.g: msai135)

For Undergraduates, your Home Directory path will be: /home/cim/ug/<username>
e.g: /home/cim/ug/msai135

For taught Postgraduates (e.g. MSc students), your Home Directory path will be: /home/cim/pgt/<username>
e.g: /home/cim/pgt/msai135

For research Postgraduates (e.g. PhD students), your Home Directory path will be: /home/cim/pgr/<username>
e.g: /home/cim/pgr/msai135

Server Information

- **Name:** Linux.CIM
- **DNS Address:** linux.cim.rhul.ac.uk
- **SSH ECDSA key Fingerprint:** fc:41:a0:b5:69:9c:24:59:bd:88:52:b3:8f:99:a6:41
- **NoMachine Cert. SHA 256 Fingerprint: FD 0F 98 77 1B C5 56 D5 2D 18 09 45 4A 0A CF 79 68 89 8A F9 01 54 8B EA 30 64 B1 3B 81 CE AA 33**
- **Connection Methods:** SSH, SFTP, NX

Operating System

Ubuntu 20.04.3 LTS 64bit
Graphic User Interface: XFCE

Software Available
- MatLab
- Mathematica
- Eclipse
- LibreOffice
- GIMP

'The Easy Way' - GUI

While this is the easiest way to connect, you are encouraged to learn the CLI method below for course Requirements.

The quickest way to access CIM Linux is by going onto a browser from any machine (on/off campus):

Linux.cim.rhul.ac.uk

Enter your username 'abcd123' followed by your password and click 'OK'.
You will be prompted with the information below, please read and press 'OK' on each screen.
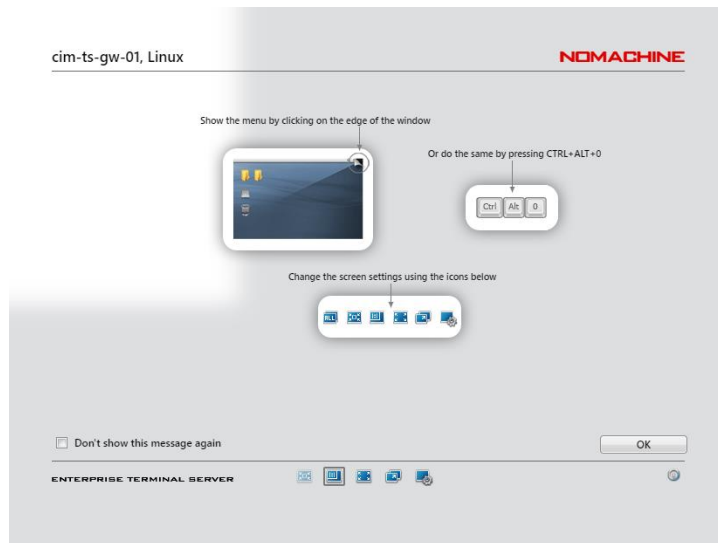
You will then be successfully connected to the GUI interface with a terminal window ready for commands:

# To access the Linux server from Labs

CLI

1. Go to:
   Start (Bottom Left) >Current Applications > Putty > Putty

2. Select the entry for Linux.CIM and click 'Open'

   or

   Enter the following details into the PuTTY Configuration window:

   - **Host:** linux.cim.rhul.ac.uk
   - **Port:** 22 *(default)*
   - **Connection Type:** SSH *(default)*

3. Click 'Open'

4. Your connection to the server will now be established.

5. If this is your first time connecting from this computer, you will receive a warning box asking you to verifythe server's identity using the server's RSA2 key.

6. You can now log on using your assigned Username and Password.
   NOTE: When entering your password, nothing will be displayed - not even masking characters like •

GUI
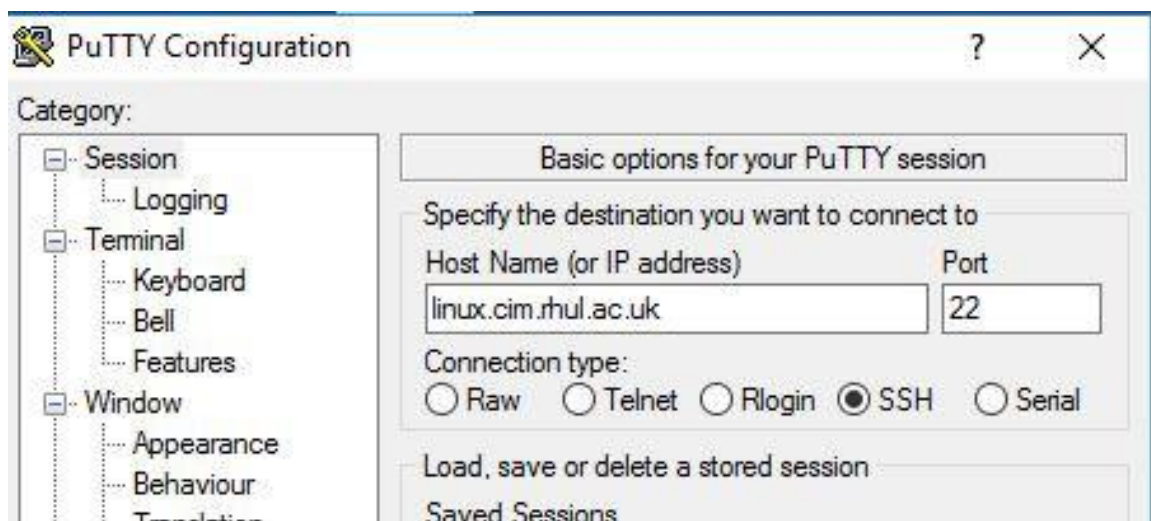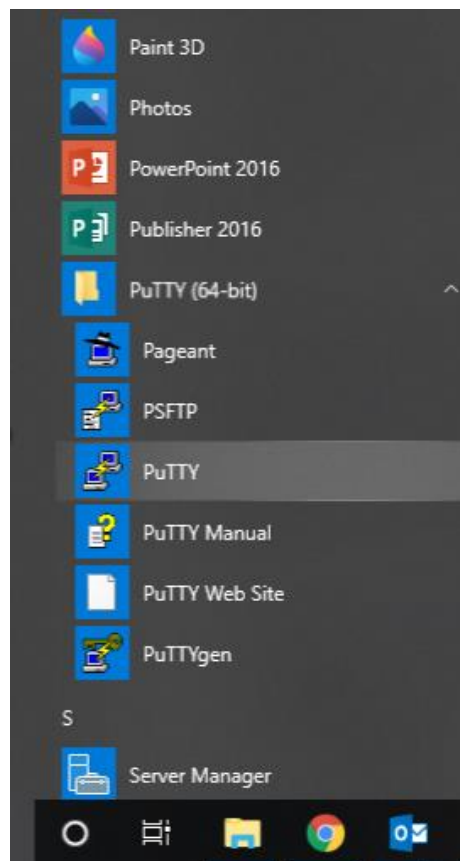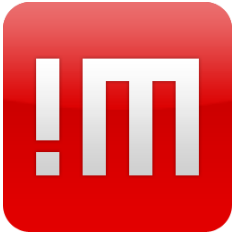
1. Go to:
   Start > All Programs > Academic Applications > (department) >

2. Click the shortcut 'linux.cim.rhul.ac.uk.nxs'

3. NoMachine Client should now open and establish the connection to Linux.CIM

Once the connection is established and you have access to the Remote Desktop interface, you can access the settings for the session by moving your mouse to the top right corner of the window. This will fold back the page and allow you to configure the settings of the session to your personal requirements.

To terminate a session, click the openSUSE Program Menu, and select 'Log Out'.

To suspend a session, just close the NoMachine client window.

Suspended sessions can be resumed up to 24 hours later by reconnecting via the NoMachine Client.
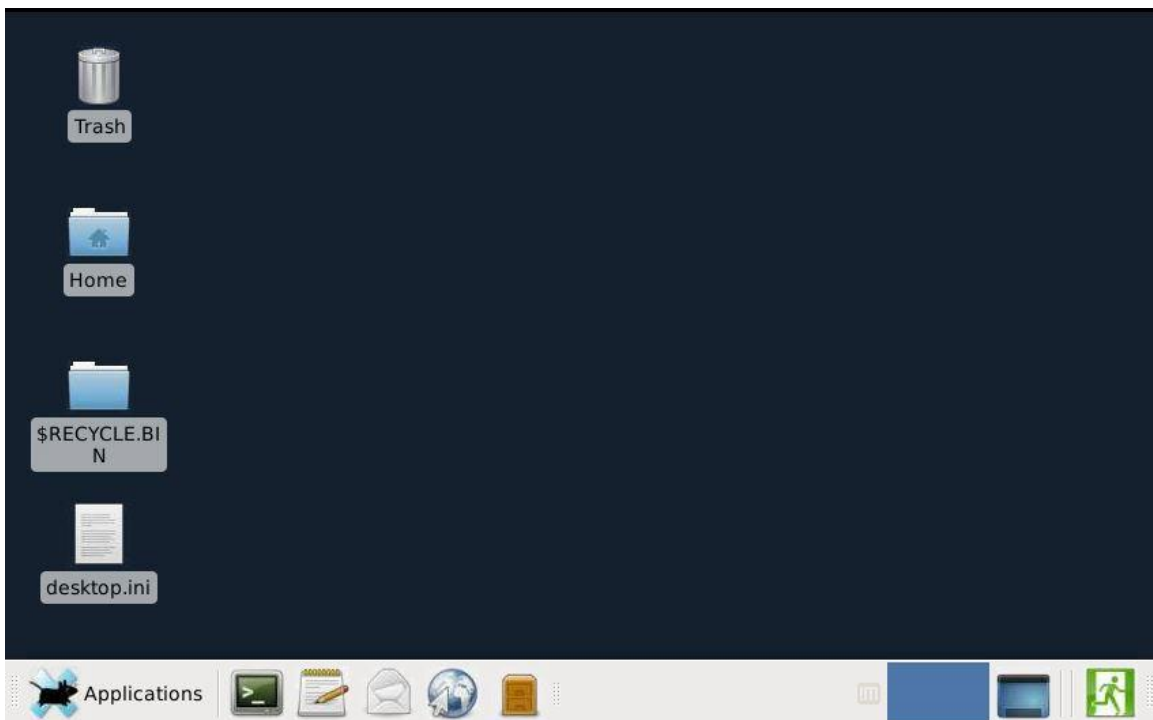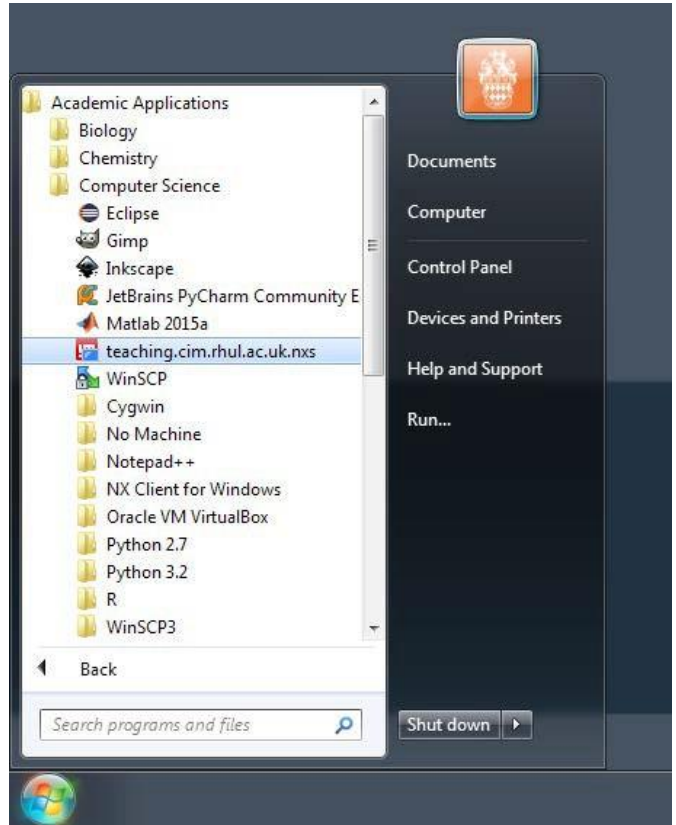
Accessing the Linux server from home.

CLI

For Windows:

1. Using a web browser, go to:
   http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html
   (or just Google 'putty').
2. Download and run PuTTY
3. Enter the following details into the PuTTY Configuration window:

- **Host:** linux.cim.rhul.ac.uk
- **Port:** 22 *(default)*
- **Connection Type:** SSH *(default)*

4. Click 'Open'

5. Your connection to the server will now be established.

6. If this is your first time connecting from this computer, you will receive a warning box asking you to verify the server's identity using the server's RSA2 key.

7. You can now log on using your assigned Username and Password.
   NOTE: When entering your password, nothing will be displayed - not even masking characters like •
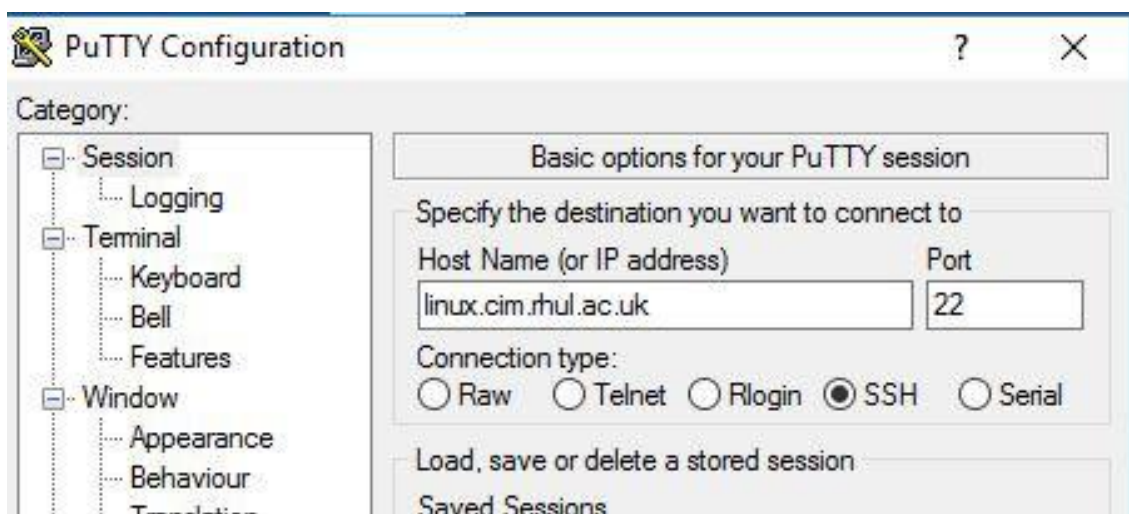
For Mac / Linux systems:

Open a Terminal

        type:

           ssh –l <username> linux.cim.rhul.ac.uk

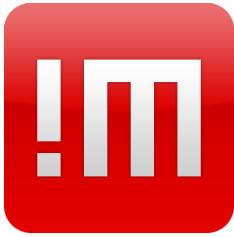   or:

           ssh <username>@linux.cim.rhul.ac.uk

        (in both instances, replacing <username> with your RHUL username - i.e: msai135)

If this is your first time connecting from this computer, you will receive a warning box asking you to verify the server's identity using the server's RSA2 key.

GUI

1. Using a web browser, go to:
   https://www.nomachine.com/download-enterprise#NoMachine-Enterprise-Client

2. Download and install the NoMachine Enterprise client for your Operating System.

3. Once installed, start the NoMachine client.

4. On the 'Connections' screen, click 'New'. Enter the following details:
   - **Protocol:** NX *(default)*
   - **Host:** linux.cim.rhul.ac.uk
   - **Port:** 4000 *(default)*
   - **Authentication Method:** Password *(default)*
   - **Proxy:** None *(default)*
   - **Name:** Linux.CIM

5. Click 'Done'.

6. Now open the new connection that you've just made - Confirm the Certificate Fingerprint matches the one provided in this documentation, then continue connecting

7. Enter your Royal Holloway Username (i.e: msai135) and Password - Optionally you can save these details in the connection file. - Click OK

8. Take note of the commands to get in / out of NoMachine Client. Before you click 'OK', click the second icon in the screen settings - this will map the remote desktop to the size of the window, so that you can resize it / move it, and ensure that no interface elements of the GUI appear outside of the visible working space.

   Now click 'OK'

9. Take note of the second screen of instructions, then click 'OK'
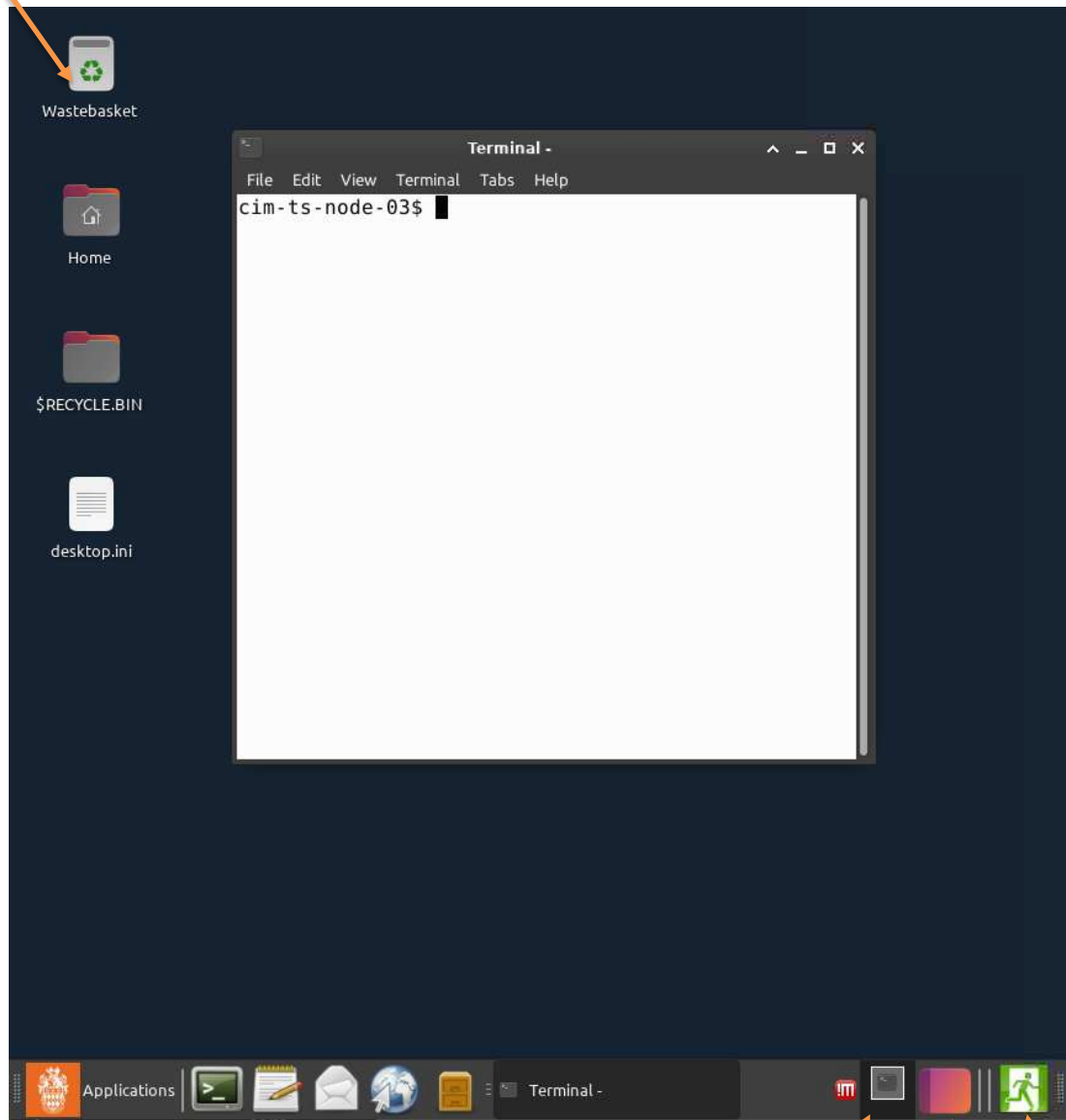
10. On the 'Menu Panel' screen, leave the setting as 'Display the menu panel covering all screen' and click 'OK'

11. You should now be connected to the Linux Server and have access to the Graphic User Interface.

Graphical User Interface

Desktop Icons

Access all apps

Workspace view

Terminate Session

Minimize all windows

FAQ

How do I change my password?

From a Terminal (CLI) Session, type the following:

passwd

Now follow the on-screen instructions. When entering your passwords, nothing will be displayed - not even masking characters like •

Can I have multiple sessions opened?

You can have unlimited number of SSH (CLI) sessions opened, but oly a single NoMachine Session.

Do inactive sessions stay live forever?

No - Inactive sessions will be terminated automatically after 24-hours.
Inactive means that a connection from the NoMachine client to the Server is not running.
Additionally, sessions may be automatically terminated on Tuesday between **7am** and **10am** to allow for Server Maintenance and restarts. This is the '**At Risk**' period, and is in line with the JANET At Risk period.

What text editors do you recommend?

The system default text editor is KATE, however there are a multitude of other text editors installed, including:
* EMACS
* NANO (PINE)
* VIM

How do I copy files to and from Linux.CIM?

* You can use the NoMachine File Transfer option built into the NoMachine client.
* For Microsoft Windows you can use WinSCP (available in all Royal Holloway labs
    or downloadable for home from: *https://winscp.net/*
* For Apple Mac OSX you can purchase Transmit from the Apple App Store,
    or ExpanDrive from *http://www.expandrive.com*

How do I get IT help?

If you require help with the IT systems supported by the Computer Science Department, or the Information Security Group, please log a support ticket at:

https://cimhelpdesk.rhul.ac.uk

If you require help with a system that operates campus wide (i.e: Email, Moodle, Lab Computers, etc), please log a support ticket at:

https://itservicedesk.rhul.ac.uk

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