

# iCSF Exercise

## Overview

- Load and Run Rstudio
- Load and Run Matlab
- Logout of the iCSF

## Note

- Commands to be entered at the command line are in `courier` with text in ***bold italics*** to be replaced as described.
- On the iCSF 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)
- On the iCSF the up and down arrows can be used to scroll through previously entered commands. Press tab while entering a command or filename to auto-complete it (this saves a lot of typing – very handy!)
- It is usually possible to paste into a terminal window, e.g. by using the middle mouse button (sometimes the right mouse button).

## 1. Setup and run Rstudio interactively on the iCSF:

- Open the iCSF terminal window via X2go (its should be minimised at the bottom)
- We'll use R/Rstudio for this example. At the prompt type the followings commands to load the software:

```
[username@incline21 ~]$ module load apps/gcc/R/3.4.2  
[username@incline21 ~]$ module load apps/binapps/rstudio/0.98.1103-any-r
```

- Now start Rstudio by typing:

```
[username@incline21 ~]$ rstudio &
```

- You should have a Rstudio GUI – Load the `ex1.R` file in to Rstudio (**File >> Open File**) and select the **Source** button to run the file. It won't do very much apart from set up a table of data and print it.
- Type the following line in the Console window (usually the lower-left window):

```
barplot(t)
```

- You should have a graph drawn in a new window.
- Add the above command in to the `ex1.R` source window (top-left window) and **select the source button** again to rerun the script (the graph will change – it uses random numbers each time you run it. Want to know what that was all about? See the R examples page: <http://www.rexamples.com/6/Plotting%20a%20uniform%20distribution>)
- **Save** the source file – press `Ctrl+s` or hit the disk icon.
- Quit Rstudio by running the following command:

```
quit()  
Save workspace image to ~/.RData? [y/n/c]: n Type n and press enter
```

## 2. Setup and Run Matlab interactively on iCSF

- We'll use Matlab for this example. All software is loaded on the iCSF/CSF using module files. At the prompt type the command to load the software:

```
[username@incline21 ~]$ module load apps/binapps/matlab/R2019a
```

- To check the module has loaded enter the following

```
[username@incline21 ~]$ module list
```

You should see the matlab module file loaded

- Now start Matlab by typing:

```
[username@incline21 ~]$ matlab &
```

- You should have a Matlab GUI – Lets create a basic 2-D Plot. In the command window enter the following commands (feel free to copy and paste)

```
x = 0:0.05:5;  
y = sin(x.^2);  
figure  
plot(x,y)
```

*\*\*\* What we are doing here is creating a set of (x,y) coordinates , creating a figure ,then plotting the x,y coordinates on to that figure.*

- A 2-D plot should be created. You should be able to interact with the plot by zooming in/out and also selecting certain points, thus hopefully demonstrating the interactive aspect of the iCSF.
- Quit the matlab GUI (File menu or Ctrl+Q)
- Read more about what we did here
- <https://uk.mathworks.com/help/matlab/ref/meshgrid.html>
- For more information on loading and running MATLAB on the iCSF  
<http://ri.itservices.manchester.ac.uk/icsf/software/applications/matlab/>
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### 3. Logout of the iCSF

- Enter one of the following commands to logout of the iCSF:

```
[username@incline21 ~]$ logout  
or  
[username@incline21 ~]$ exit
```

(if it appears to freeze, press Ctrl+C. You should be returned to the prompt at your local computer).