

RStudio on Comet

- Prerequisites – you need to have an X-window server and SSH client, install these:
 - Mac: XQuartz (<https://www.xquartz.org/>)
 - Windows: Xming 6.9.0.31 (<https://sourceforge.net/projects/xming/>) and putty 0.70 (<https://www.putty.org/>)
- Get interactive compute node
 - `srun --pty --nodes=1 --ntasks-per-node=24 -p compute -t 1:00:00 --wait 0 /bin/bash`
 - When resource has been allocated, prompt will change to `<user>@comet-XX-YY`, where comet-XX-YY is the compute node.
- Once compute node has been allocated, log into compute node
 - Mac
 - Start up XQuartz
 - Applications -> Utilities -> XQuartz
 - Open up xterm window
 - XQuartz -> Applications -> Terminal
 - Log into compute node in xterm window
 - `ssh -Y <user>@comet-XX-YY.sdsc.edu`
 - Windows
 - Start X Server
 - run Xming (this will run in background)
 - Start SSH client
 - run a new putty client
 - for Session options, as a 'Host', enter 'comet-XX-YY.sdsc.edu'
 - for Connections->SSH->X11 option check the box for 'Enable X-11 forwarding'
- Load R and RStudio modules
 - `module load R`
 - `export MODULEPATH=/share/apps/compute/modulefiles/applications:$MODULEPATH`
 - `module load rstudio/1.1.447`
- Start up RStudio
 - `rstudio`
- Test R/RStudio
 - The following tests use the built-in 'iris' dataset
 - Find number of samples in dataset
 - Type: `nrow(iris)`
 - Should get:

```
[1] 150
```
 - Get summary statistics
 - Type: `summary(iris)`

- Should get:

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
Min. :4.300	Min. :2.000	Min. :1.000	Min. :0.100	setosa :50
1st Qu.:5.100	1st Qu.:2.800	1st Qu.:1.600	1st Qu.:0.300	versicolor:50
Median :5.800	Median :3.000	Median :4.350	Median :1.300	virginica :50
Mean :5.843	Mean :3.057	Mean :3.758	Mean :1.199	
3rd Qu.:6.400	3rd Qu.:3.300	3rd Qu.:5.100	3rd Qu.:1.800	
Max. :7.900	Max. :4.400	Max. :6.900	Max. :2.500	

- Plot two of the variables
 - plot(iris\$Sepal.Length, iris\$Petal.Length)
 - Should get:

