

Using R on Blanca

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Slides available for download from:

https://github.com/ResearchComputing/CHANGE_2019

Outline for this presentation

- The R modules
- Invoking R from the terminal
- Installing a package in R
- Running an R script in an interactive job
- Running an R script from a batch job

R modules

- Start an interactive job on a Blanca node:
 - Type: `sinteractive --ntasks=1 --reservation=change`
- Let's see which versions of R are available
 - Type: `ml spider R`
- Now load the most recent version, 3.5.0
 - Type: `ml R/3.5.0`

Start R and install a package

- Invoke R
 - Type: `R`
- Let's install a package
 - Type: `> install.packages("tinytex")`
- Now let's see if tinytex is installed
 - Type: `> library()`
- Load tinytex
 - Type: `> library(tinytex)`

Run an R script interactively

****Do this from an interactive job, not on `blogin01`!**

- Create an Rscript:
 - Type: `nano myscript.R`
Add a print statement such as `print("hello world")`
Then exit
- Run the script
 - Type:> `Rscript myscript.R`

Run an R script in a batch job

- Exit your interactive job by typing `exit`.
- Create myRjob.sh: `nano myRjob.sh` ; add the following lines:

```
#!/bin/bash
#SBATCH --qos=blanca-ics
#SBATCH --nodes=1
#SBATCH --ntasks=1
#SBATCH --time=00:01:00
ml purge
ml R/3.5.0
Rscript myscript.R
```

- Submit a job: `sbatch myRjob.sh` ; when the job runs, you can view the output in `slurm.<jobid>.out`

Typical R workflow for Blanca

- Interactive development of an R script is generally done on the user's laptop/desktop in Rstudio
- When satisfied, port the code over to Blanca
- Tweak/debug script as needed with nano
- Submit a job script that runs the R script.

End of R module

- Course materials for today:

https://github.com/ResearchComputing/CHANGE_2019

- Slides from R workshop series

<https://osf.io/6jb9t/>

- Similar Blanca workflow for Matlab users. Documentation on Matlab here:

<https://curc.readthedocs.io/en/latest/software/matlab.html>