Lunch and Learn

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Outline

Part 1: Getting an interactive RStudio session on MSI (~20 min)

Part 2: Data transformations and visualization with R (~100 min)

Part 1: Accessing Open OnDemand

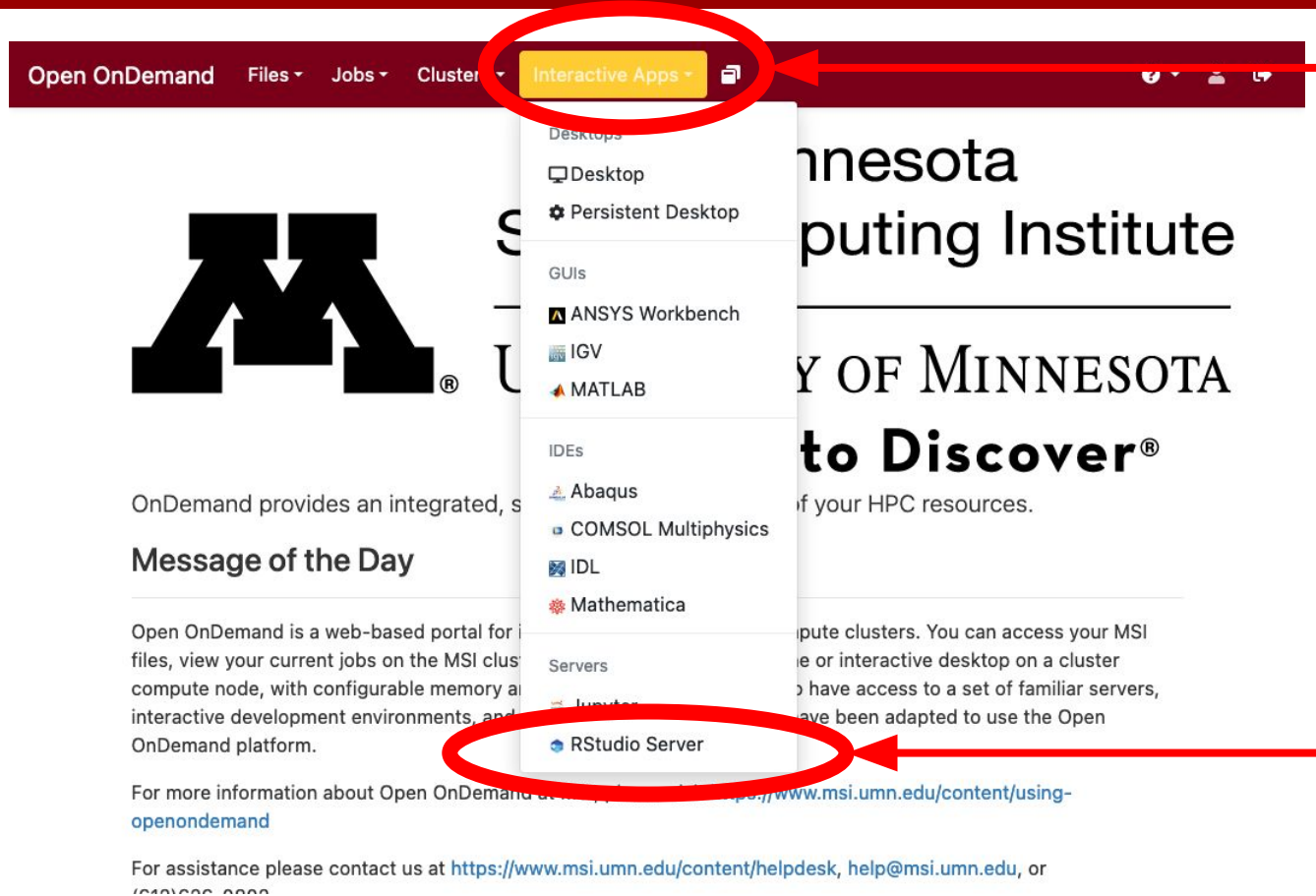
Open browser and navigate to https://ood.msi.umn.edu/

Log in with UMN username and password (and DUO MFA)

Good to know:

- You will need to be connected to the VPN if off campus
- Open OnDemand lets you manage files and access a command line shell on MSI systems
- Pre-built graphical apps like virtual desktop, IGV, MATLAB
- Jupyter notebooks and **RStudio Server** analysis environments

Part 1: RStudio in Open OnDemand



1: Click “Interactive Apps”

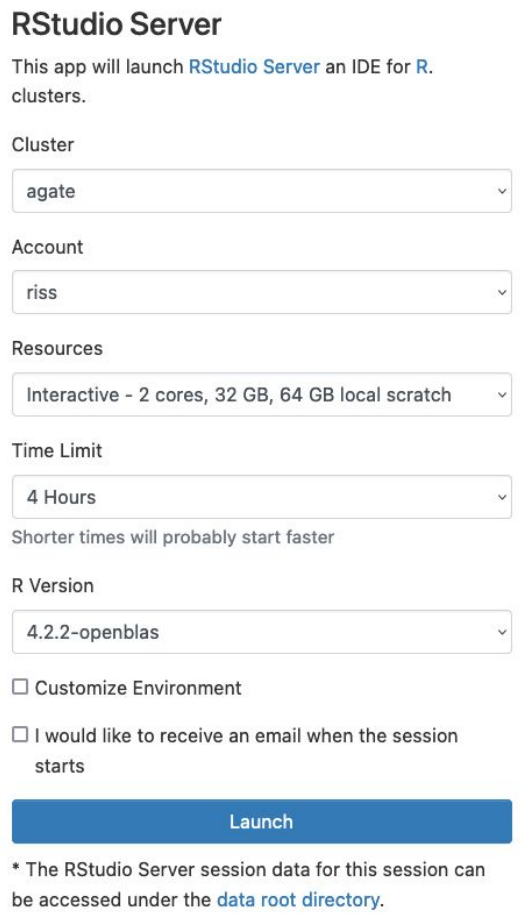
2: Click “RStudio Server”

Part 1: RStudio in Open OnDemand

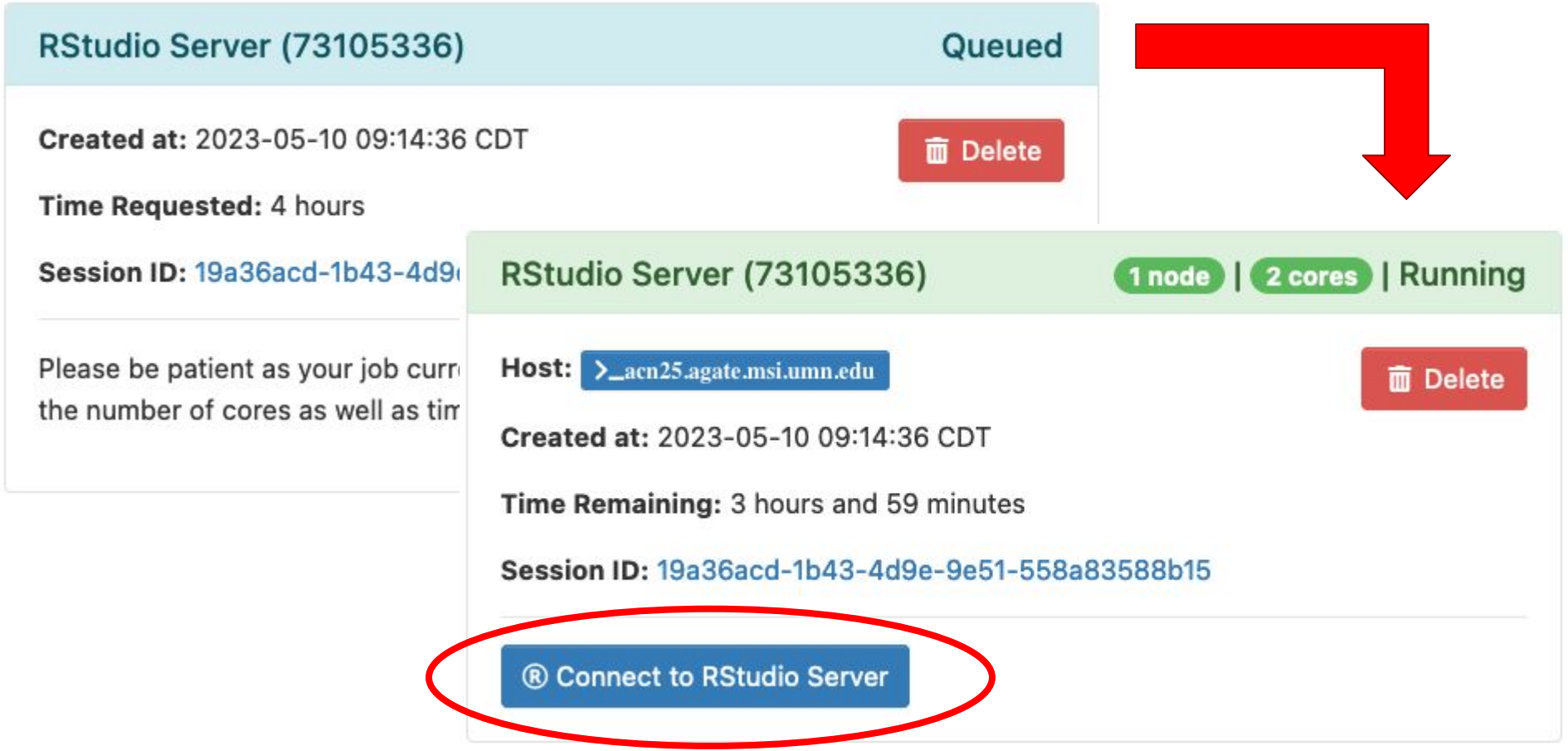
Configure resources for RStudio session:

- Cluster: `agate`
- Account: [`your primary group`]
- Resources: `Interactive`
  - You can customize this for future work!
- Time Limit: `4 Hours`
- R Version: `4.2.2-openblas`

Click “Launch”

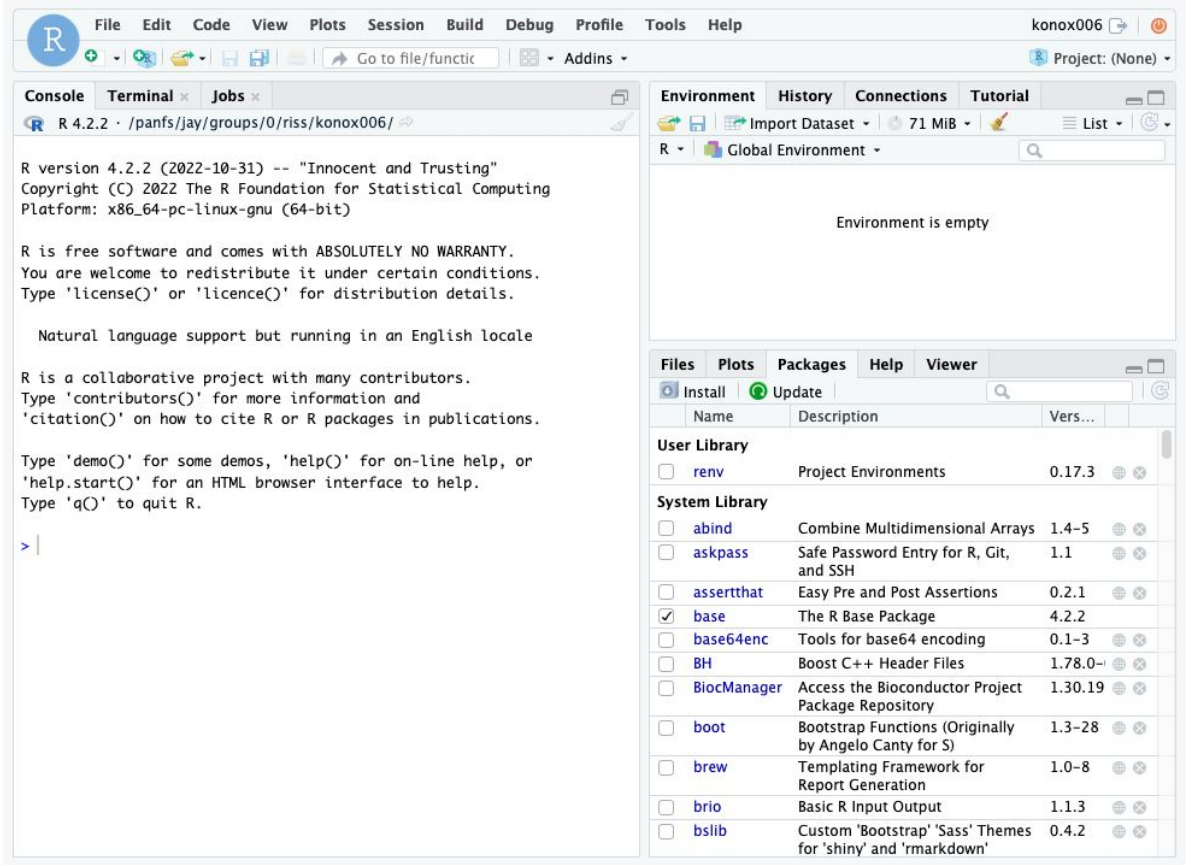


Part 1: RStudio in Open OnDemand



Part 1: RStudio in Open OnDemand

From here, you can use R as you normally would!



Part 1: Install Required Packages

Enter the following command into the R console to install the `renv` package:

```
install.packages("renv")
```

If R asks for confirmation about installing packages into a user library, type "`Yes`" then press [`Enter`].

A bunch of red text may appear, but unless you see the word "`Error`" then it installed without issue.

Part 1: Activate Workshop Environment

Part 2 of the workshop will involve data transformation and visualization with various specialized packages, so we prepared an environment with these packages ready to use.

To activate it, type this into the R console:

```
renv::activate("/home/riss/public/Lunch_and_Learn/R_Environment")
```

More red text will appear, and you will even get an error message from this command! This is OK - we made the environment **read-only** and R is complaining about that.

Part 1: What is “renv” anyway?

An *environment* manager for R:

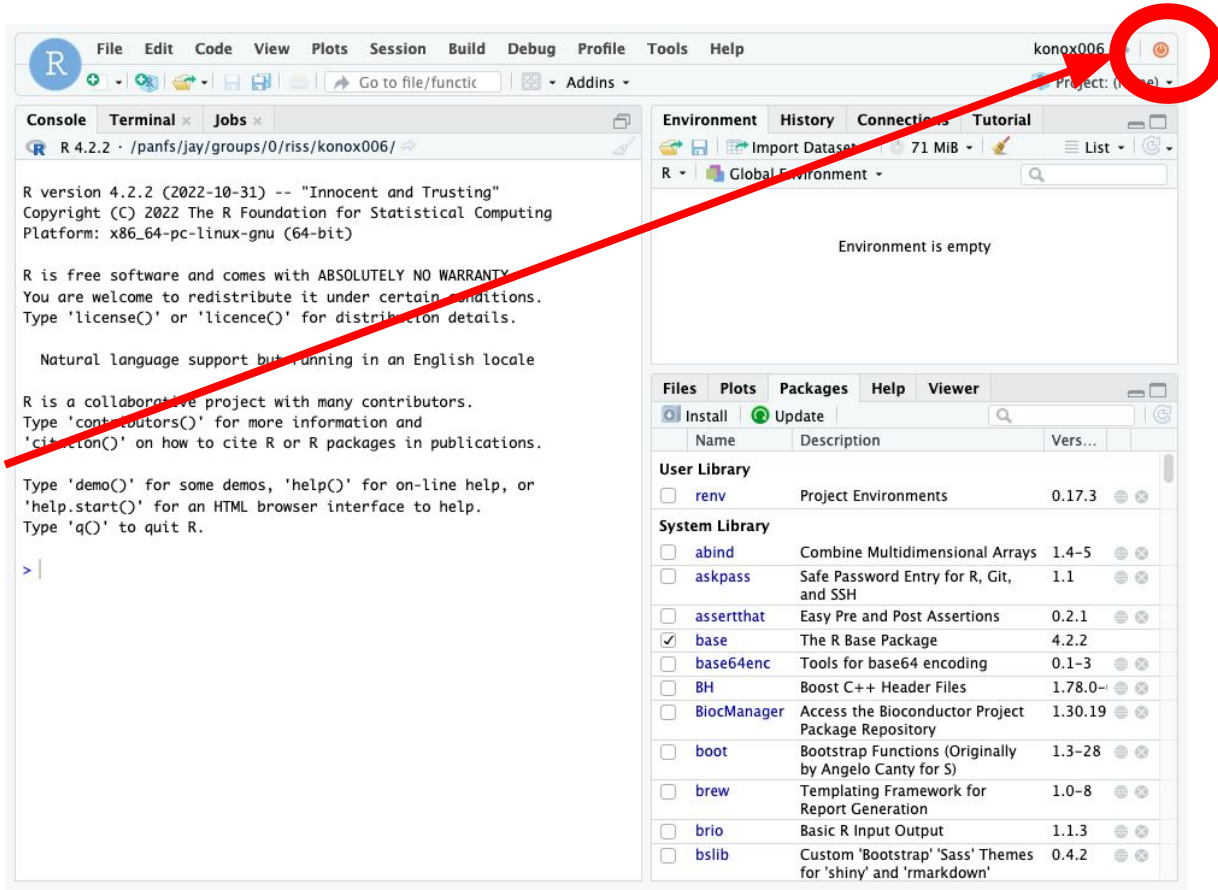
- Records package names and versions
- Allows you to track changes to environments (via a JSON “lockfile”) and restore them
- Allows you to share environments!*

*: We are using it in a *non-sanctioned* way here. You should **not** share a R library directory for normal use! You should instead share the lockfile and your collaborator can rebuild the same environment.

The R versions must match, too! We are using **4.2.2** for this demo.

Part 1: Finishing Your RStudio Session

Be sure to click the “logout” button to end your R session when you are done with your analysis! You can leave it running with the tab closed as long as you need, though.



Part 1: Deleting Completed Sessions

Be sure to click the “Delete” button on your active sessions page when you are done!

If you leave it running, it will block other interactive jobs until it is finished or deleted!