



# R

R is a programming language and environment designed to work in the field of statistics.

## Use R in TeideHPC

Once connected to the login nodes, to see the available R versions, we use the *modules* tool:

```
module ava R
----- /opt/envhpc/modulefiles/.rhel6
-----
R/3.4.4/gcc R/3.6.1/gcc R/4.0.3/gcc R/4.1.1/gcc
```

To load any of the versions, we may need to load a module beforehand:

```
module load R/4.1.1/gcc
R/4.1.1/gcc(10):ERROR:151: Module 'R/4.1.1/gcc' depends on one of the module(s) 'gcc/
10.2.0'
R/4.1.1/gcc(10):ERROR:102: Tcl command execution failed: prereq gcc/10.2.0
```

Therefore, we load the necessary modules, in the corresponding order:

```
module load gcc/10.2.0 R/4.1.1/gcc

module list
Currently Loaded Modulefiles:
  1) openssl/1.1.1k/gcc  2) python/3.8.11/gcc  3) gcc/10.2.0  4) R/4.1.1/gcc
```

Now we can start using R:

```
R

R version 4.1.1 (2021-08-10) -- "Kick Things"
Copyright (C) 2021 The R Foundation for Statistical Computing
Platform: x86_64-pc-linux-gnu (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
```

'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or  
'help.start()' for an HTML browser interface to help.

Type 'q()' to quit R.

>

## Install R packages in /data

By default, R will install packages in the user's `/home` partition. This storage is limited in size, so we should configure the environments and install software in the `/data` partition. To do this, we need to set an environment variable:

```
export R_LIBS_USER=$HOME/data/mylibrary
```

This way, R will use this path as the default library instead of the user's */home*. When using R functions like `install.packages()` and `library()`, packages will be installed to the path defined in the `R_LIBS_USER` variable. If you want to avoid having to set this variable every time you connect, you can add that line to the end of your `~/.bashrc` file, so it will be permanent.

## Running an R script in Slurm

To use an R script in Slurm, we have to run it as follows:

```
Rscript myscript.R
```