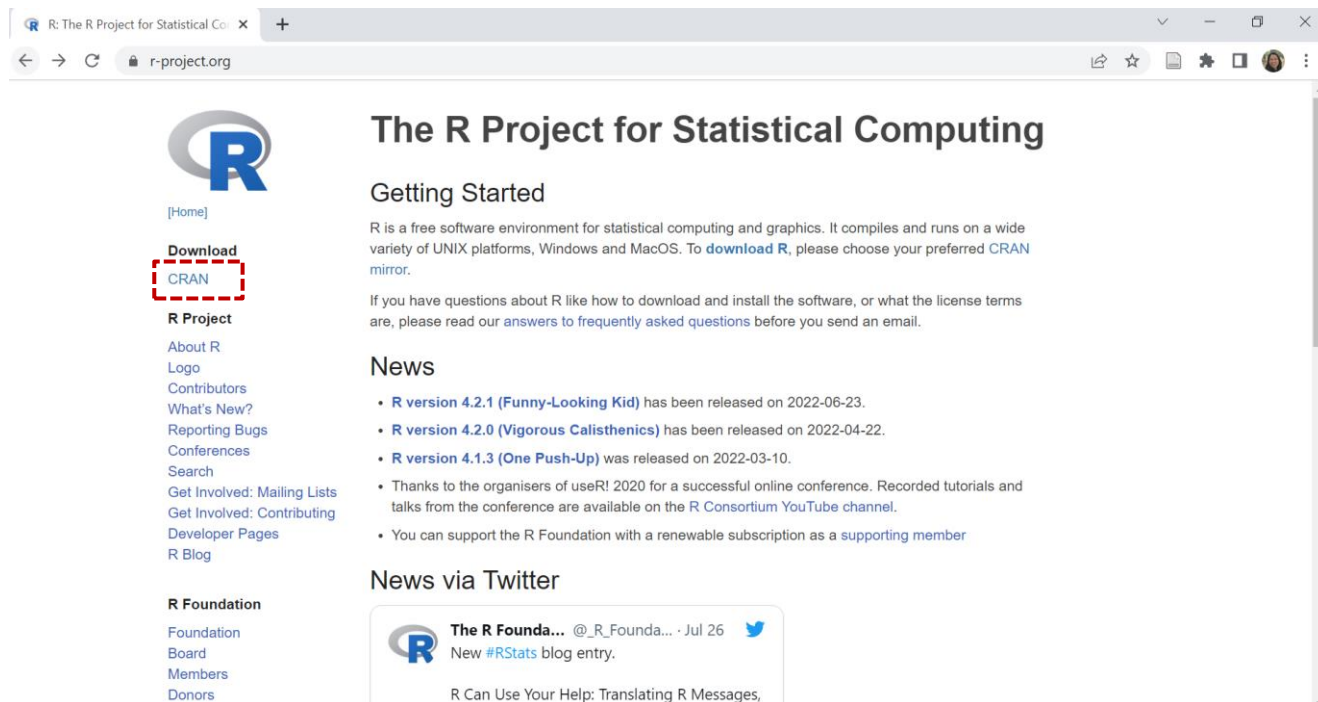# R, RTools and RStudio Installation Guide

- ## Download and Install R

a. Open the www.r-project.org to download R and RTools.
b. Go to CRAN and download the R installer for Windows. Make sure to choose the latest stable version and must be compatible with your devices.

CRAN Mirrors

The Comprehensive R Archive Network is available at the following URLs, please choose a location close to you. Some statistics on the status of the mirrors can be found here: main page, windows release, windows old release.

If you want to host a new mirror at your institution, please have a look at the CRAN Mirror HOWTO.

0-Cloud

https://cloud.r-project.org/	Automatic redirection to servers worldwide, currently sponsored by Rstudio

Argentina

http://mirror.fcaglp.unlp.edu.ar/CRAN/	Universidad Nacional de La Plata

Australia

https://cran.csiro.au/	CSIRO
https://mirror.aarnet.edu.au/pub/CRAN/	AARNET
https://cran.ms.unimelb.edu.au/	School of Mathematics and Statistics, University of Melbourne
https://cran.curtin.edu.au/	Curtin University

Austria

https://cran.wu.ac.at/	Wirtschaftsuniversität Wien

Belgium

https://www.freestatistics.org/cran/	Patrick Wessa
https://ftp.belnet.be/mirror/CRAN/	Belnet, the Belgian research and education network

Brazil

https://cran-r.c3sl.ufpr.br/	Universidade Federal do Parana
https://cran.fiocruz.br/	Oswaldo Cruz Foundation, Rio de Janeiro
https://vps.fmvz.usp.br/CRAN/	University of Sao Paulo, Sao Paulo
https://brieger.esalq.usp.br/CRAN/	University of Sao Paulo, Piracicaba

Bulgaria

https://ftp.uni-sofia.bg/CRAN/	Sofia University

c. You need to download the base and the Rtools. The R should be in the same version as with your Rtools.

d. Check the version of your OS if it is compatible with the version of R. If ever you have 32 bit processor, you can try to download the previous versions

Once the installer downloads, Right-click on it and select "Run as administrator".

1) You can click next through the standard dialogs and accept most defaults. But at the destination screen, please verify that it is installing it to C:Files(version number may vary)
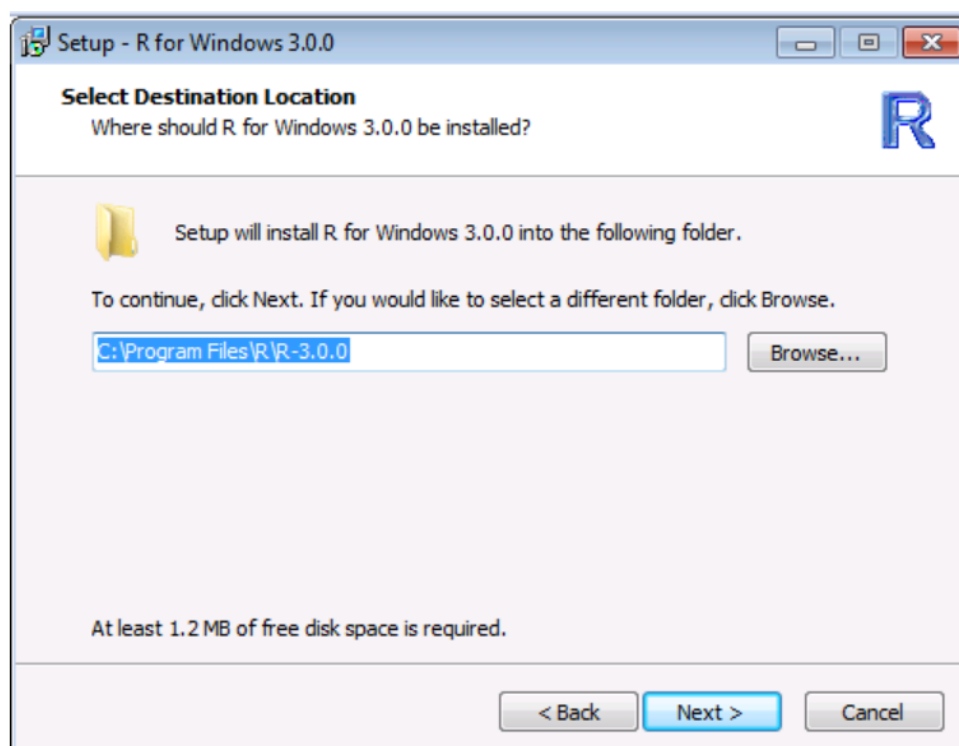
2) At the "Select Components" screen, you can accept the default and install both 32-bit and 64-bit versions.
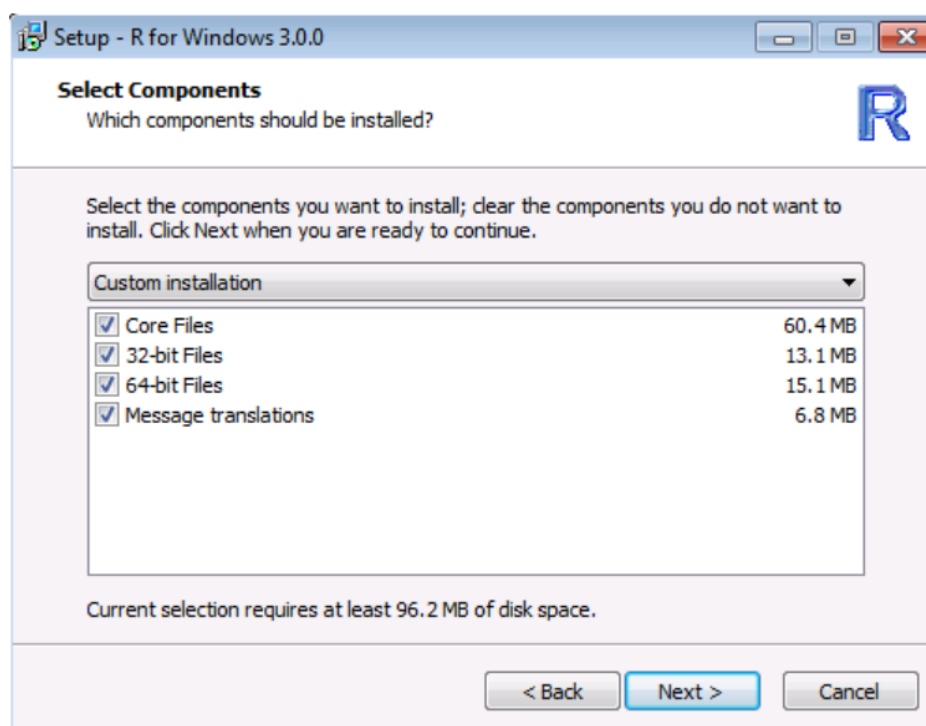
3) At this screen, you can check or uncheck 'Create a desktop icon'.

- **Download and Rtools**
a. Download

Subdirectories:

base	Binaries for base distribution. This is what you want to **install R for the first time**.
contrib	Binaries of contributed CRAN packages (for R >= 3.4.x).
old contrib	Binaries of contributed CRAN packages for outdated versions of R (for R < 3.4.x).
Rtools	Tools to build R and R packages. This is what you want to build your own packages on Windows, or to build R itself.

Please do not submit binaries to CRAN. Package developers might want to contact Uwe Ligges directly in case of questions / suggestions related to Windows binaries.

You may also want to read the R FAQ and R for Windows FAQ.

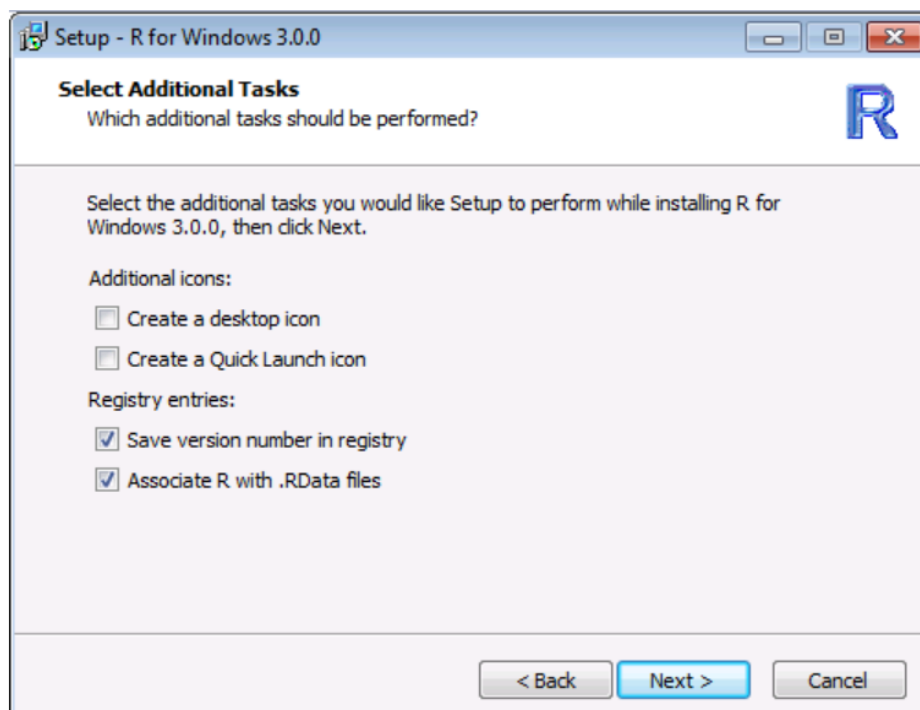Note: CRAN does some checks on these binaries for viruses, but cannot give guarantees. Use the normal precautions with downloaded executables.

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b. Check the version of Rtools with the R

RTools: Toolchains for building R and R packages from source on Windows

Choose your version of Rtools:

RTools 4.2	for R >= 4.2.0
RTools 4.0	for R from version 4.0.0 to 4.1.3
old versions of RTools	for R versions prior to 4.0.0

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- ### **Download and Install RStudio**

https://rstudio.com/products/rstudio/download/

You can choose a version you want but make sure that the R and the Rtools are compatible with RStudio.

1) Double-click the installer. Accept all the default options for the RStudio install.
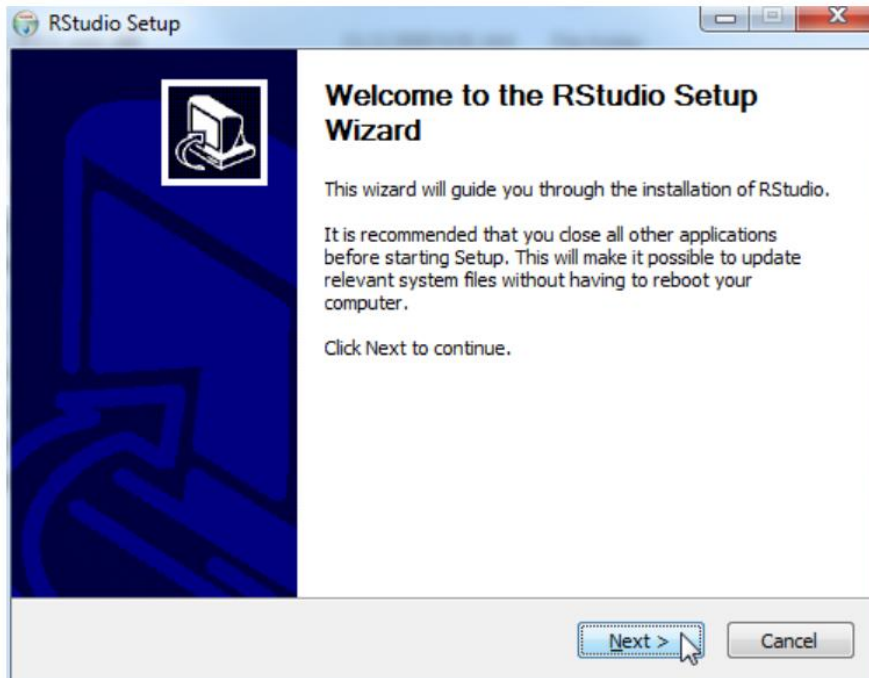
Checking Installation

Open the RStudio

1) Once installed, RStudio should be accessible from the start menu. Start-up RStudio. Once running it should look something like:

Find the "Console Pane"

By default the console window will be on the left side of RStudio. Find that window. It will looking something like:
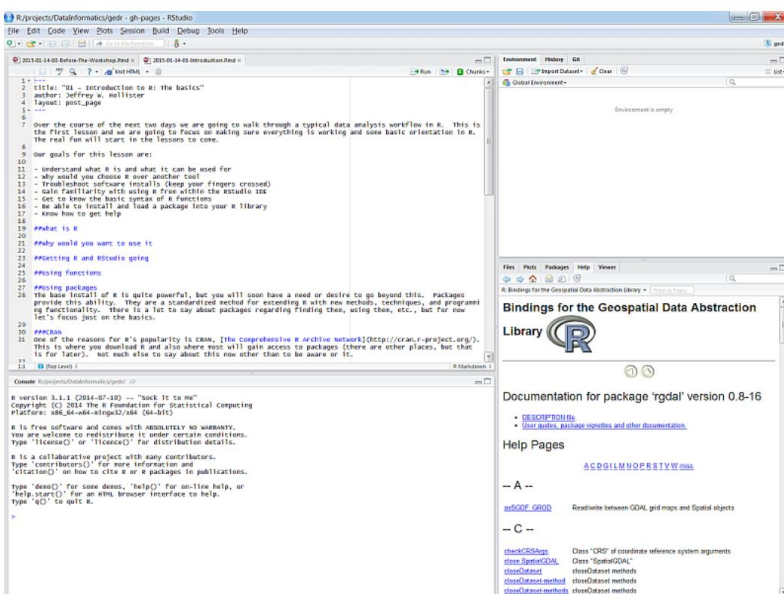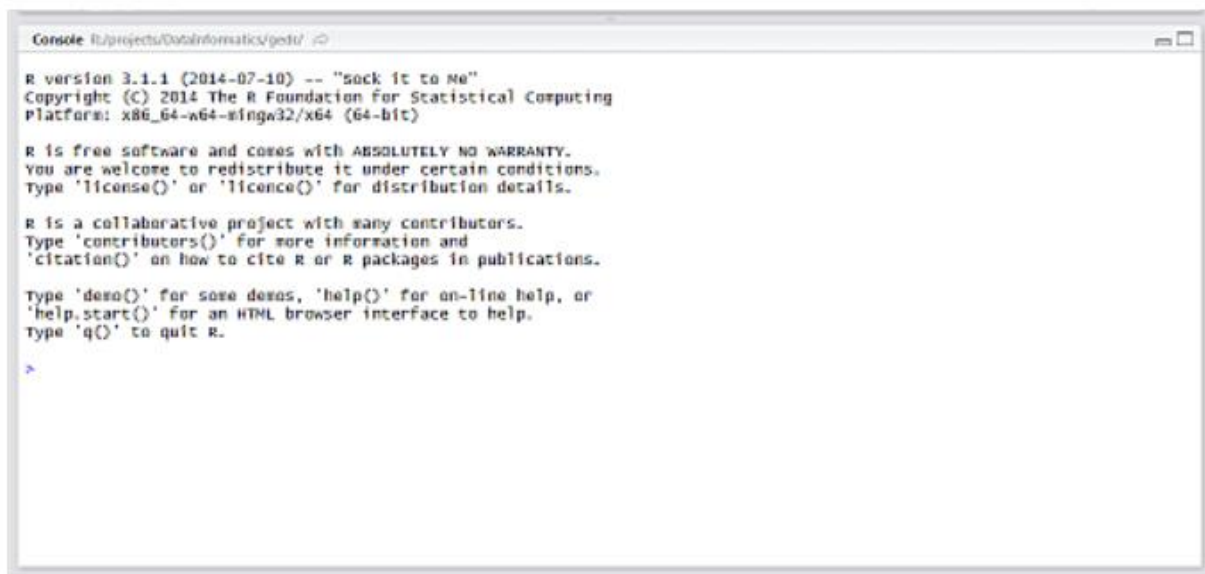

Verify the installed R version

Ideally you should be running the latest stable release. If you have an older version, please install the newest version using the instructions above.

Click in the "Console" window and paste in the code from below to see what version of R you have:

```
➢ version$version.string
```

Verify the installed version of RStudio

You should be running the at least RStudio 1.0.0. The more recent the version of RStudio, the more features you will have.

Click in the "Console" window and paste in the code from below to see what version of RStudio you have:

```
➢ RStudio.Version()$version
```

Add Packages and CRAN

Installing general packages

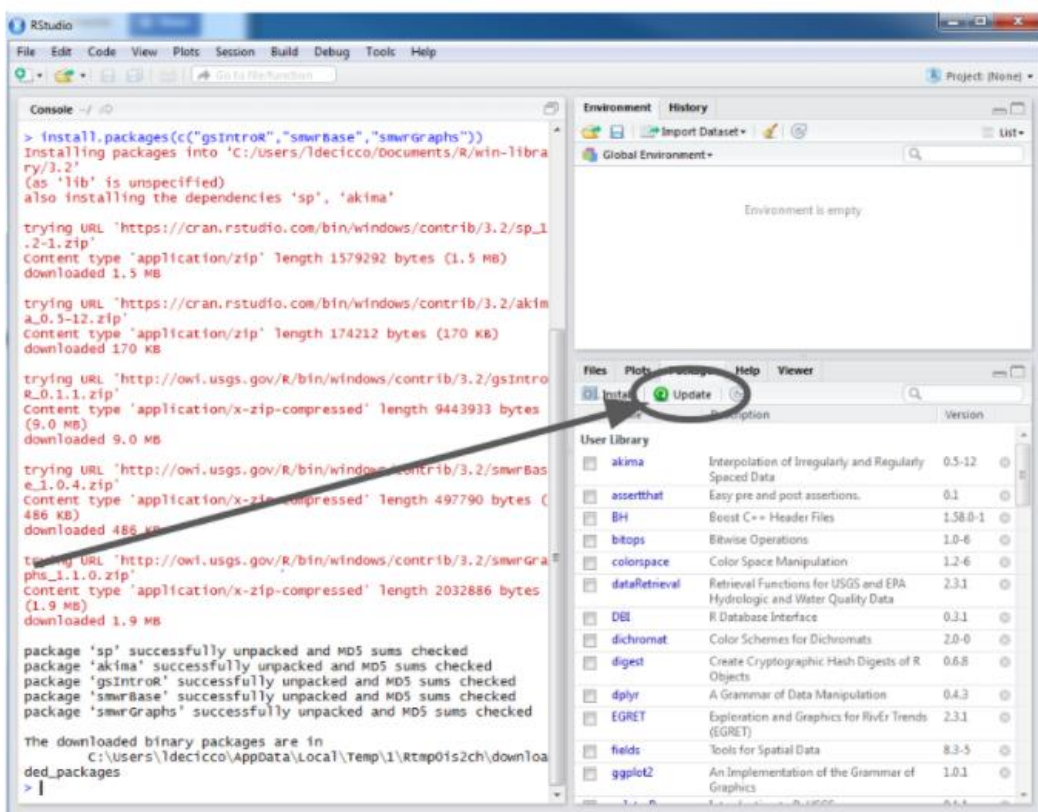Install packages available for all R users from CRAN by pasting the following code and hitting ENTER.

> ➢ install.packages("package name")

Multiple package installation

> ➢ install.packages("package name1", "package name2", "package name3")

Note: If there are warning message during the installation, that is OK.

Now that you have installed R and some basic packages, you should get in a good habit of updating them regularly in case the authors fix bugs or add new features. It's best to do this on a weekly basis so that your code is never outdated. To update, click the icon in your packages tab. You can update them all at once or individually.

- o https://owi.usgs.gov/R/training-curriculum/installr/
- o https://a-little-book-of-r-for-bioinformatics.readthedocs.io/en/latest/src/installr.html
- o https://socialsciences.mcmaster.ca/jfox/Courses/R/ICPSR/R-install-instructions.html