Copernicus Marine Service Training Workshop

R tutorial

RStudio Installation Notes

Álvaro de Pascual Collar, Nologin Oceanic Weather (NOW) Systems – Madrid (Spain)

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1. Introduction

RStudio is an integrated development environment (IDE) for the R programming language, which is widely used for statistical computing and graphics. R, created by statisticians Ross Ihaka and Robert Gentleman in 1993, is an open-source language known for its extensive range of statistical and graphical techniques. RStudio enhances the user experience by providing a user-friendly interface that includes a console, syntax-highlighting editor, and tools for plotting, history, debugging, and workspace management. This powerful combination allows users to efficiently perform data analysis, develop statistical models, and create visualizations, making R and RStudio essential tools for data scientists, statisticians, and researchers.

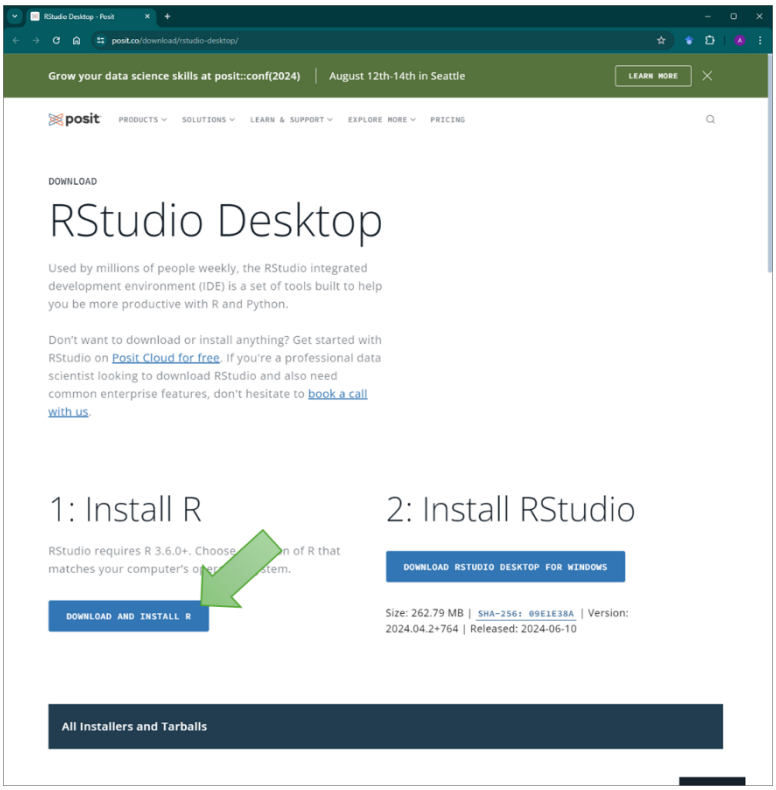
The RStudio IDE installation process involves two main stages. First, you need to install the R language interpreter on your computer. After that, you can install the RStudio IDE, which will manage your programming environment.

The installation of both environments can be managed directly from the RStudio website:

https://posit.co/download/rstudio-desktop/

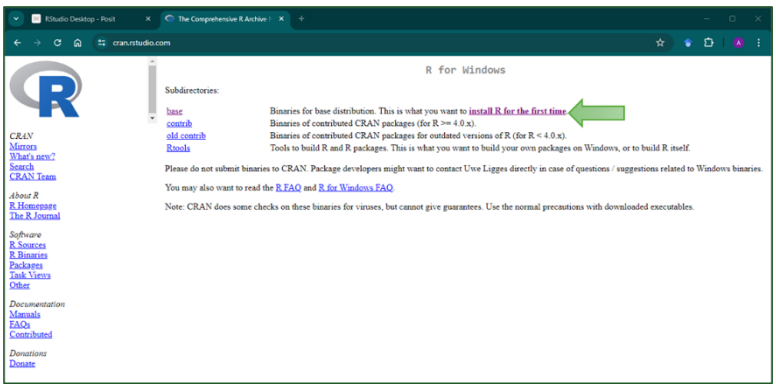
2. Installing R

As the first step, you need to click on the button to download and install the R programming language.

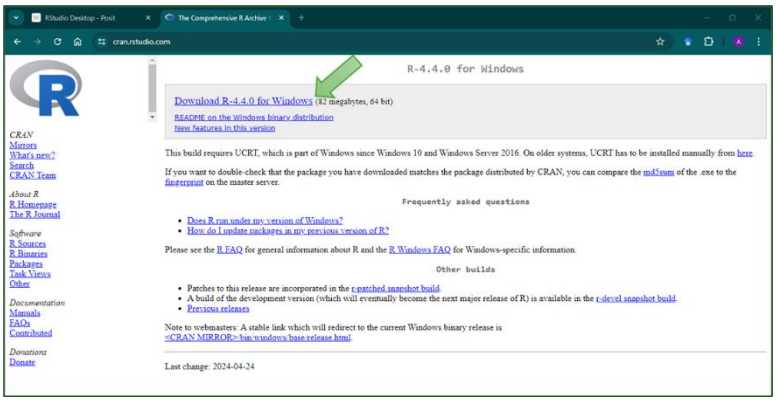


Next, you should select the operating system on which it will be installed. In this example, we will focus on the installation for Windows.

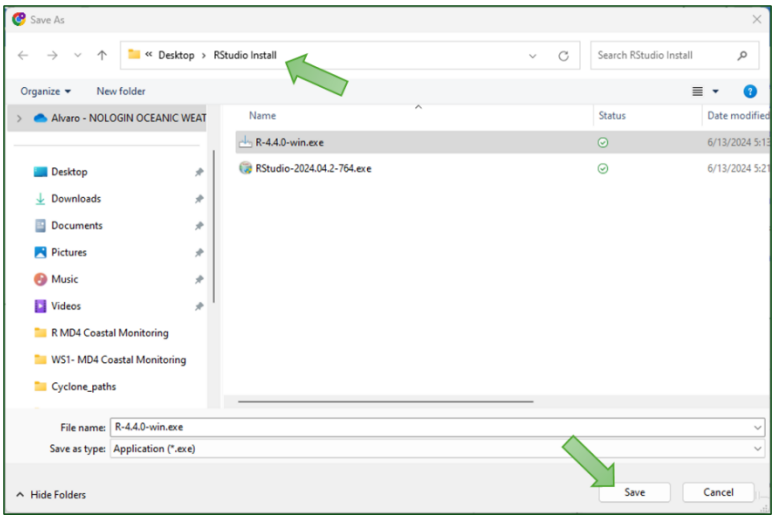
In the next step, select the download of the base version.



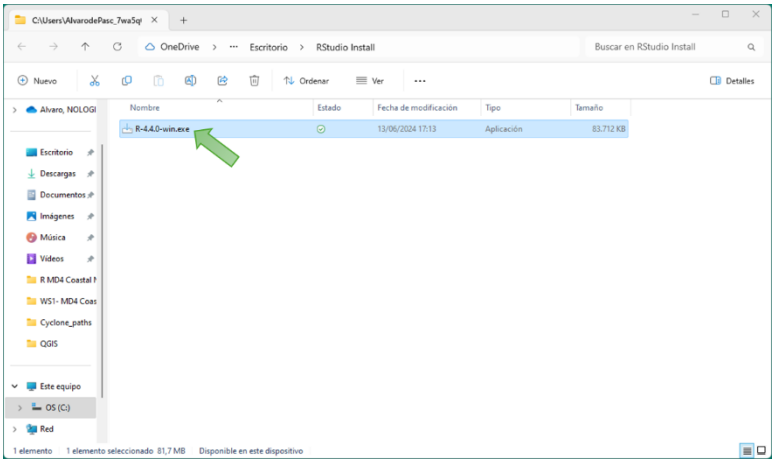
On the next page, select the download of the latest recommended version.



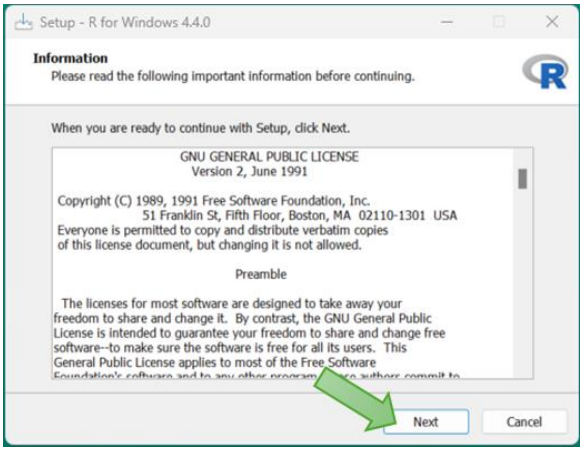
When the download window opens, select the destination for the file to be downloaded and click on the "Save" button.

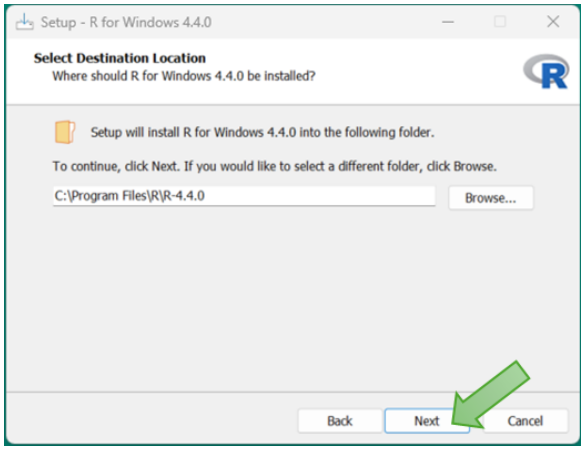


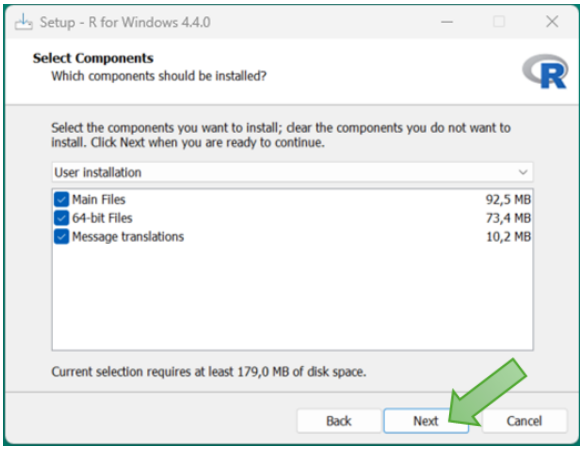
Next, it is necessary to open the file in the location where it has been downloaded.

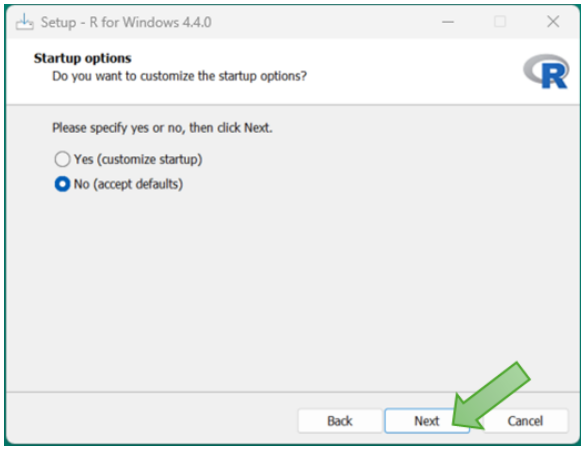


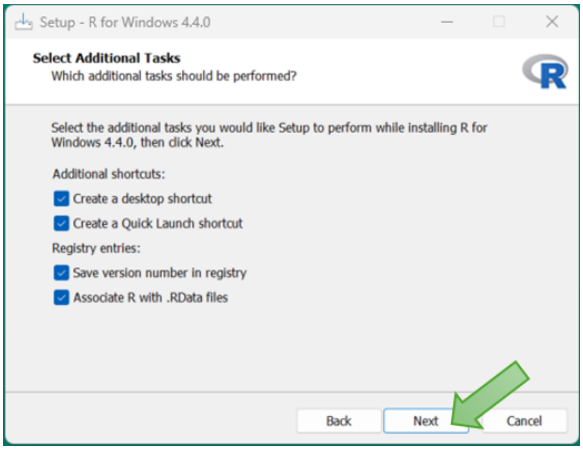
At this point, the actual installation process begins. You should follow the installer's steps, and it is not necessary to make any changes to the default installation settings.

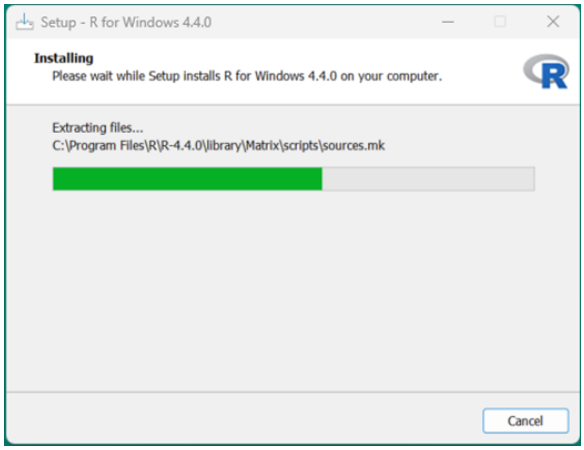


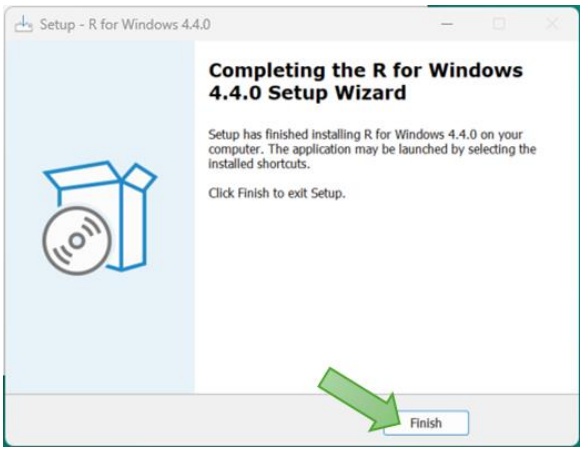










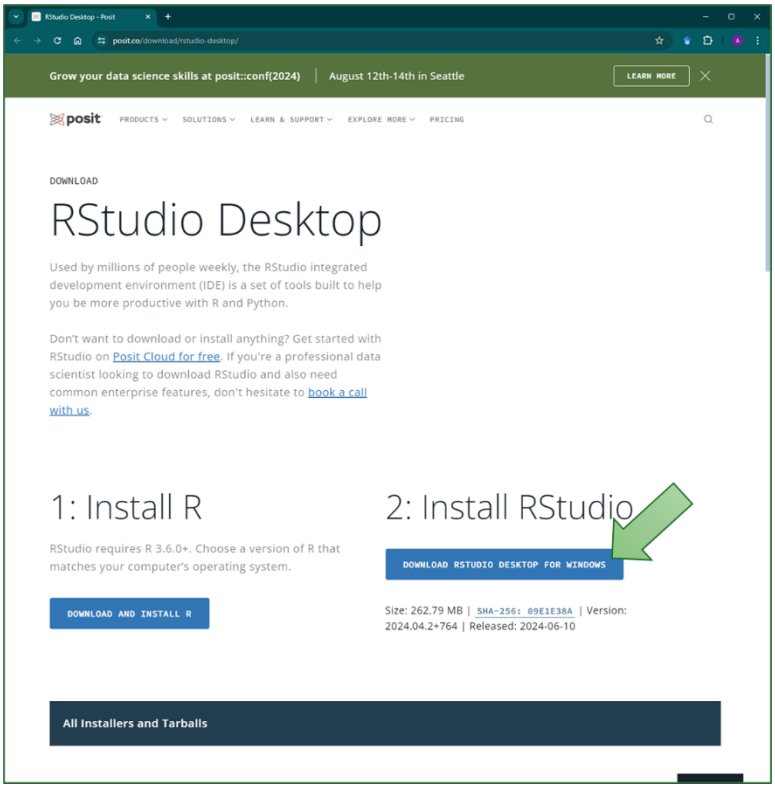


Once the installer sequence is complete, you can proceed to install the RStudio IDE.

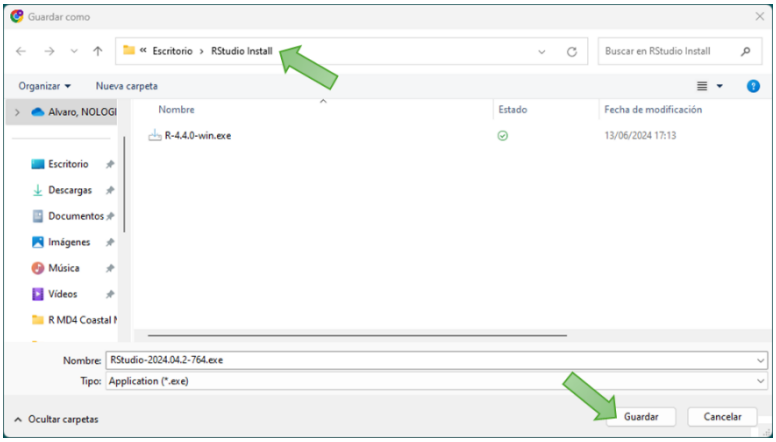
3. Installing RStudio

The RStudio installer can be downloaded directly from the RStudio website:

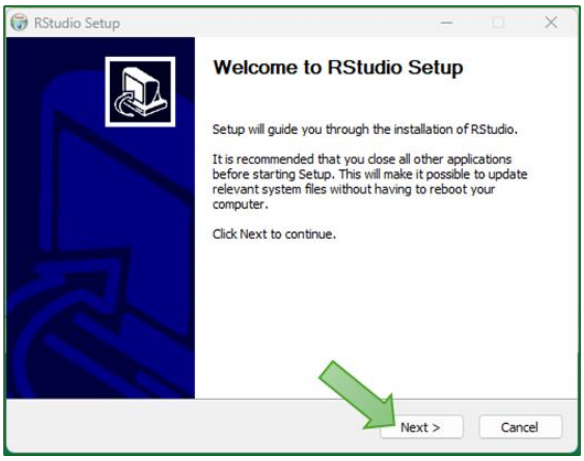
https://posit.co/download/rstudio-desktop/

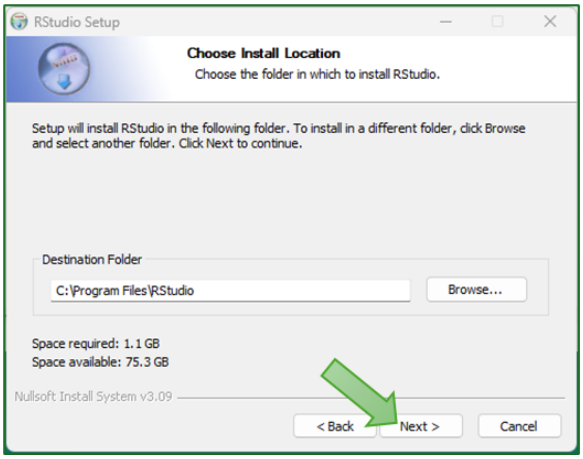


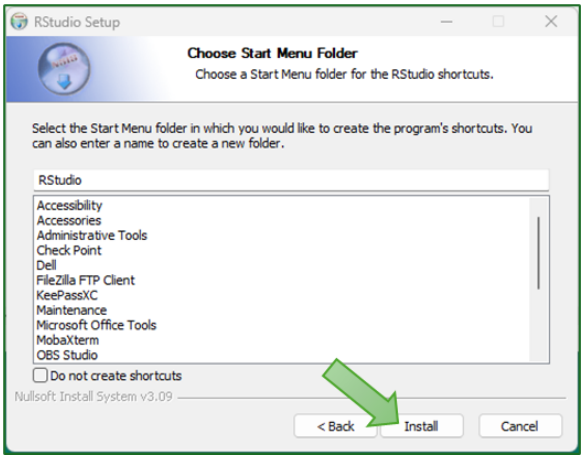
The installer download is done directly without needing to specify a version or operating system. The downloaded file should be saved in a known location.

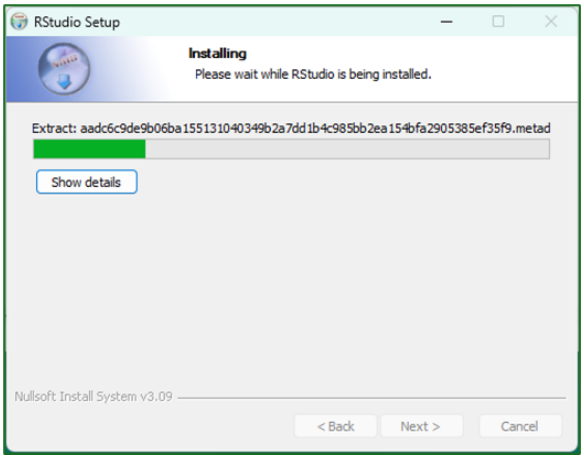


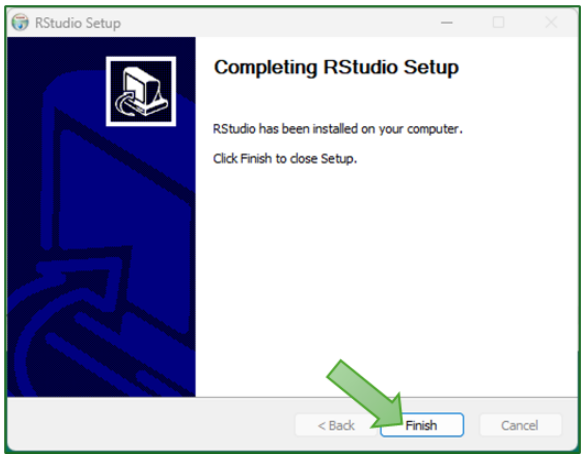
As with the previous case, at this point, the installation process begins, which can be accepted without needing to make any changes to the default installation options.


RStudio Setup
Welcome to RStudio Setup
Setup will guide you through the installation of RStudio.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel


RStudio Setup
Choose Install Location
Choose the folder in which to install RStudio.
Setup will install RStudio in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Destination Folder
C:\Program Files\RStudio
Browse...
Space required: 1.1 GB
Space available: 75.3 GB
Nullsoft Install System v3.09
< Back
Next >
Cancel

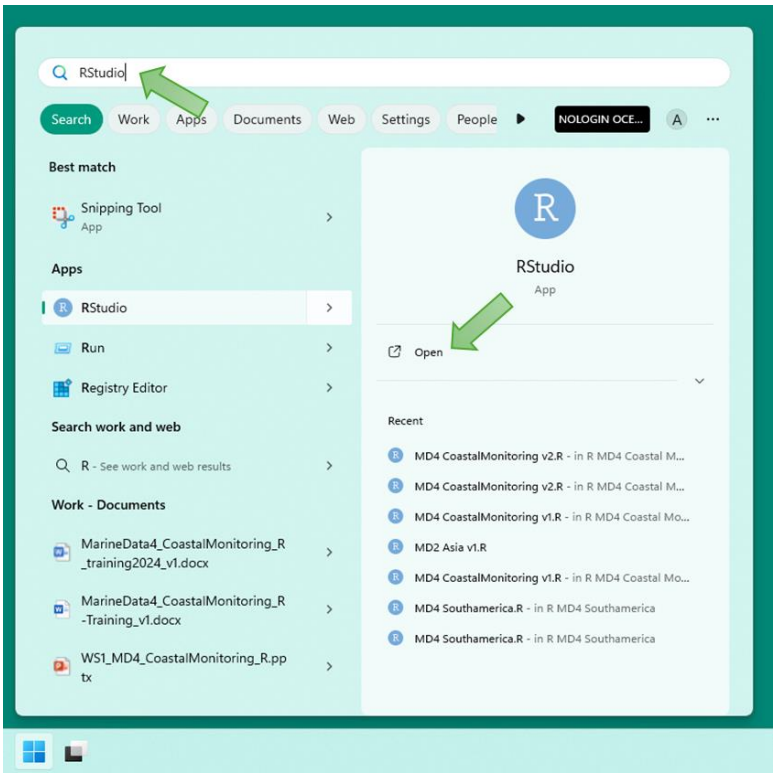

RStudio Setup
Choose Start Menu Folder
Choose a Start Menu folder for the RStudio shortcuts.
Select the Start Menu folder in which you would like to create the program's shortcuts. You can also enter a name to create a new folder.
RStudio
Accessibility
Accessories
Administrative Tools
Check Point
Dell
FileZilla FTP Client
KeePassXC
Maintenance
Microsoft Office Tools
MobaXterm
OBS Studio
Do not create shortcuts
Nullsoft Install System v3.09
< Back
Install
Cancel


RStudio Setup
Installing
Please wait while RStudio is being installed.
Extract: aadc6c9de9b06ba155131040349b2a7dd1b4c985bb2ea154bfa2905385ef35f9.metad
Show details
Nullsoft Install System v3.09
< Back
Next >
Cancel


RStudio Setup
Completing RStudio Setup
RStudio has been installed on your computer.
Click Finish to close Setup.
< Back
Finish
Cancel

4. RStudio Development Environment

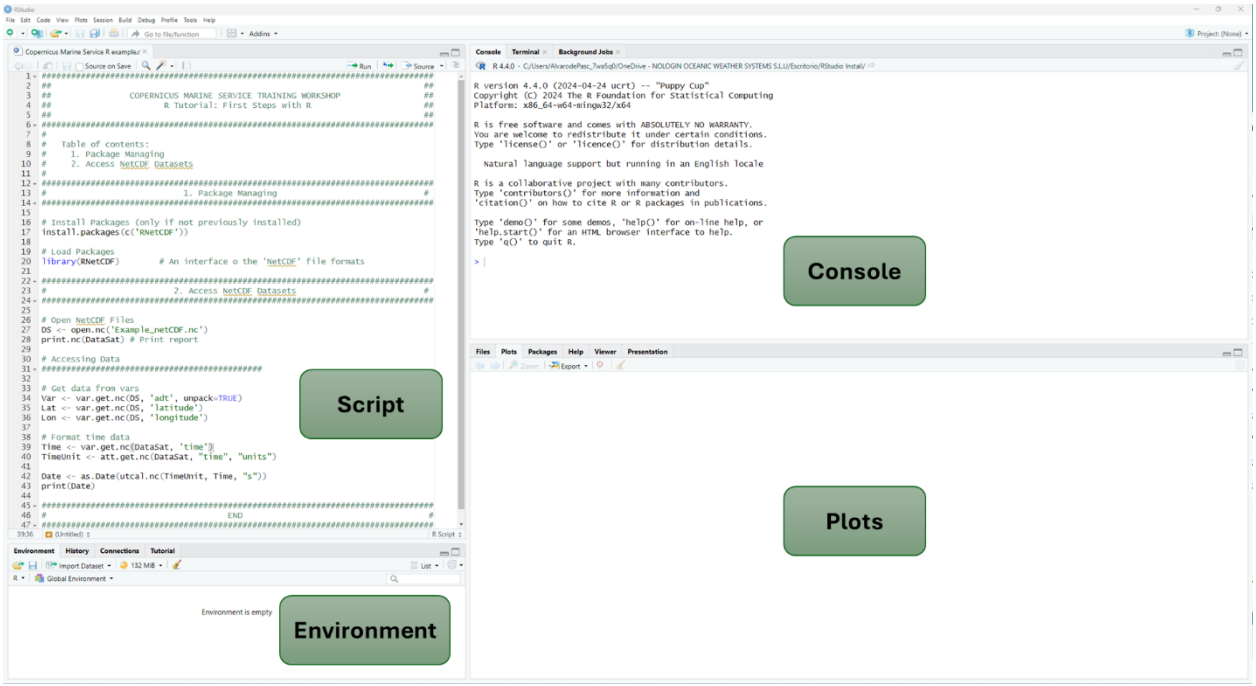
Once RStudio has been installed, the app can be found and opened from the Start menu.



The workspace in RStudio is divided into four main windows, each serving a specific purpose to enhance your workflow:

1. **Script Window:**
   - This window is typically located in the top-left corner of the RStudio interface.
   - It is where you write and edit your R scripts. The script window supports multiple tabs, allowing you to work on several scripts simultaneously.
   - You can execute code directly from the script window by selecting the code and pressing Ctrl+Enter (Windows/Linux) or Cmd+Enter (Mac).
2. **Console Window:**
   - The console window is usually found at the bottom-left or top-right of the interface.
   - This is where you interact directly with the R interpreter. You can type and execute R commands here to see immediate results.
   - The console displays output, errors, and other messages, providing instant feedback for your code.
3. **Plots Window:**
   - Located in the bottom-right corner, the plots window is where graphical outputs, such as charts and graphs, are displayed.
   - It allows you to zoom, export, and navigate through multiple plots using the navigation buttons.
   - This window also hosts other tabs for viewing help documentation, managing files, and more.
4. **Environment Window:**
   - The environment window is typically situated in the top-right or bottom-left corner.
   - It provides an overview of all objects, such as data frames, variables, and functions, currently in your R session.
   - This window helps you manage and inspect your data, including viewing object structures and contents.

Together, these four windows create an efficient and organized environment for coding, debugging, and visualizing data in R. Understanding how to navigate and utilize these components is key to leveraging the full power of RStudio for your data analysis projects.


Script
Console
Plots
Environment
Environment is empty