Using RStudio Package Manager with RStudio or R - Enclave Platform

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Purpose

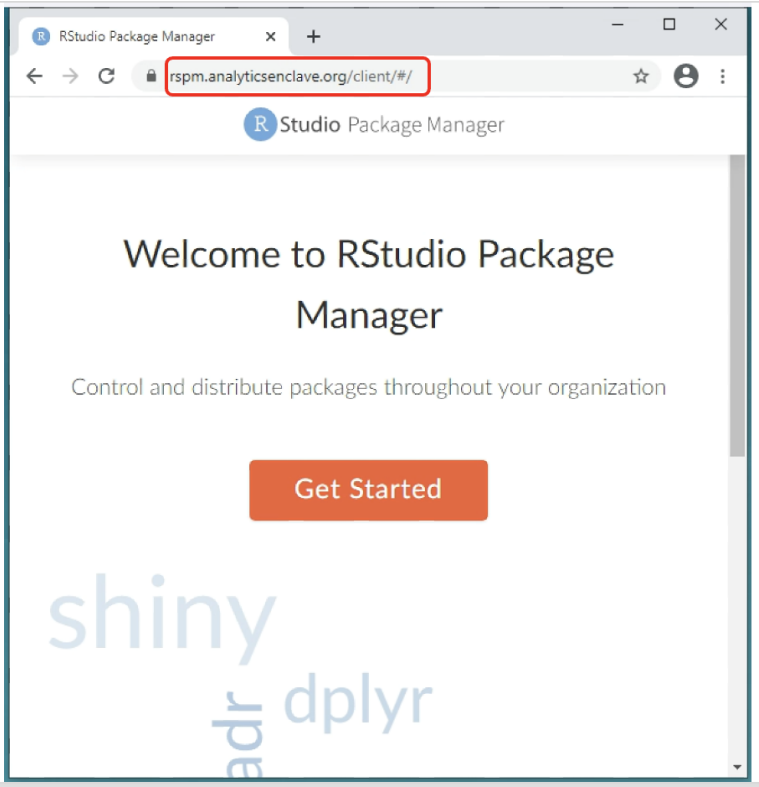
This document outlines the basic steps for using RStudio Package Manager (RSPM) in Enclave Platform to configure repositories and access packages.

Prerequisites

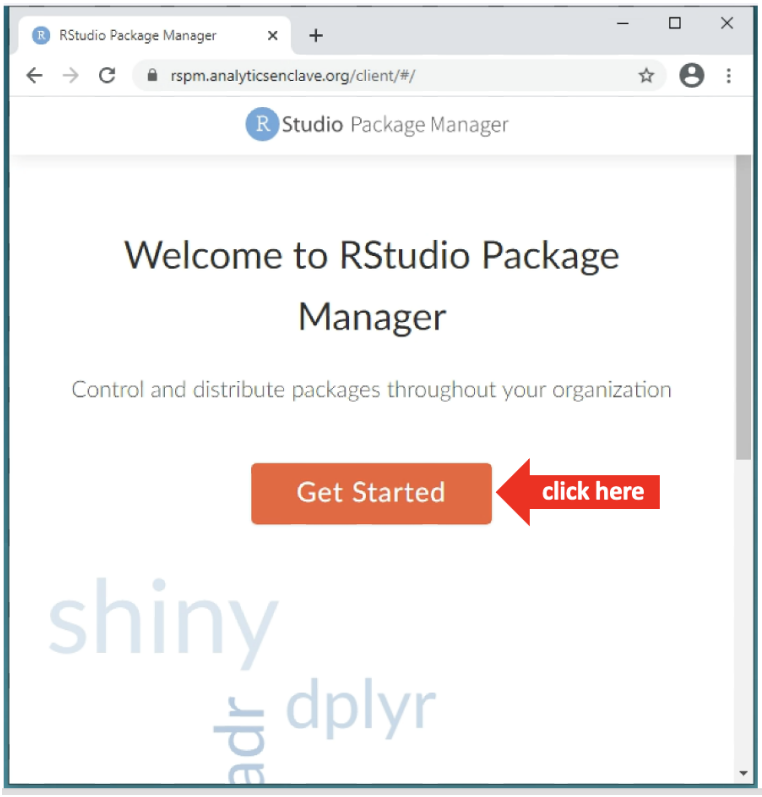
1. Access to Enclave Platform should already be granted and your workspace provisioned. If you do not have approval to access the Enclave Platform, complete and submit the **Access Request Form**.
2. You should be logged on to your Enclave Windows VDI. You cannot access the Enclave environment and resources therein from outside the platform.

I. Connecting to RSPM repositories

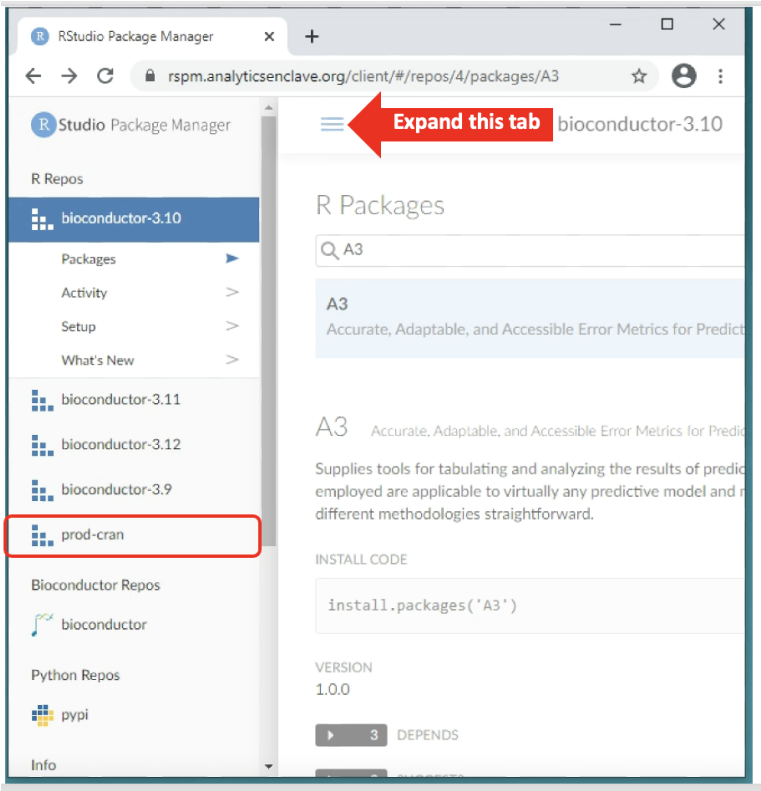
Using the available browsers (Google Chrome or Firefox) navigate to https://rspm.analyticsenclave.org/client/#/



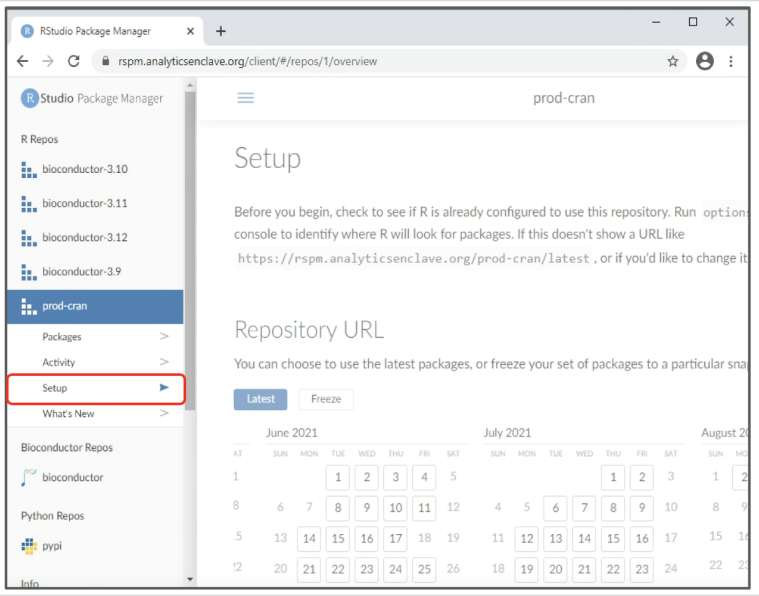
Click on the **Get Started** tab



Navigate to **prod-cran**



Click on the **Setup** tab from the sub-menu

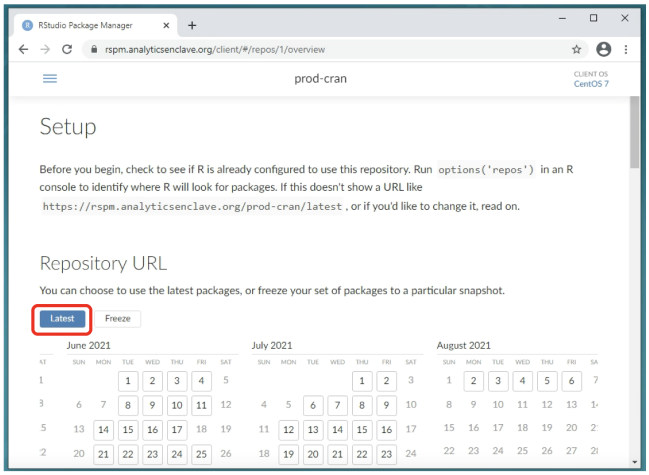


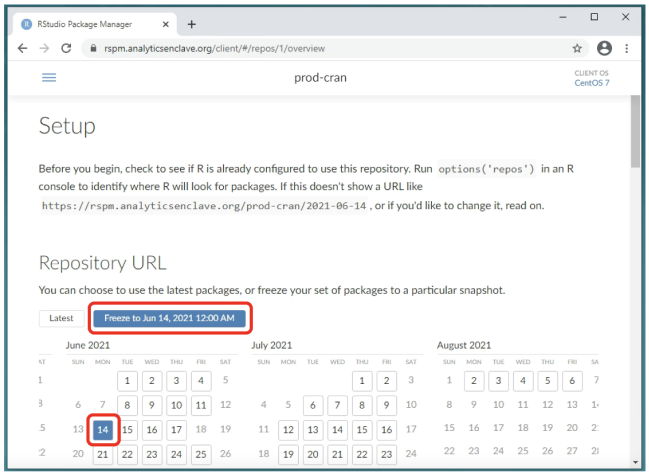
You may configure your RStudio environment with RSPM in different ways. For example: (1) using only the latest packages from a repository (https://rspm.analyticsenclave.org/prod-cran/latest), (2) using a set of packages from a fixed version of a repository, or (3) using binary or source packages.

> Use binary package installations from RSPM wherever possible to speed up deployment time.

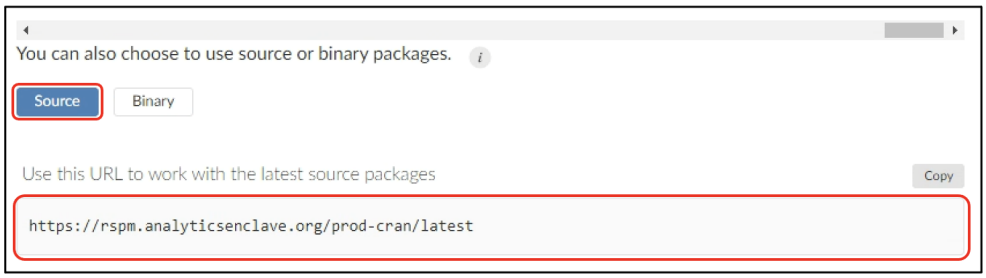
Select latest to use the latest packages from the repository

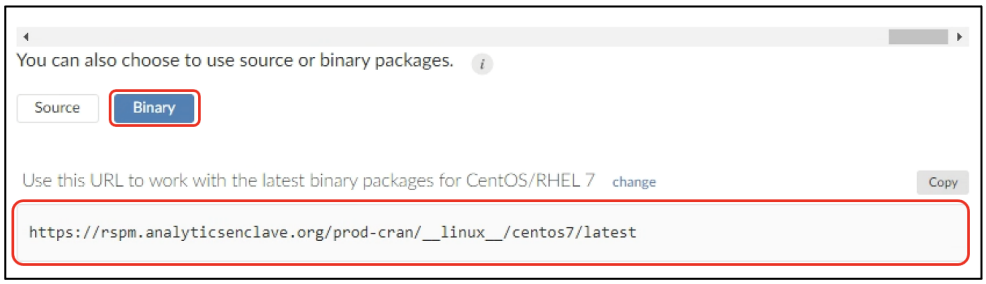
Select a specific date to use a fixed version of the repository i.e. the set of packages is added from CRAN as they existed on June 14, 2021, the date the source was created





Select binary or source packages



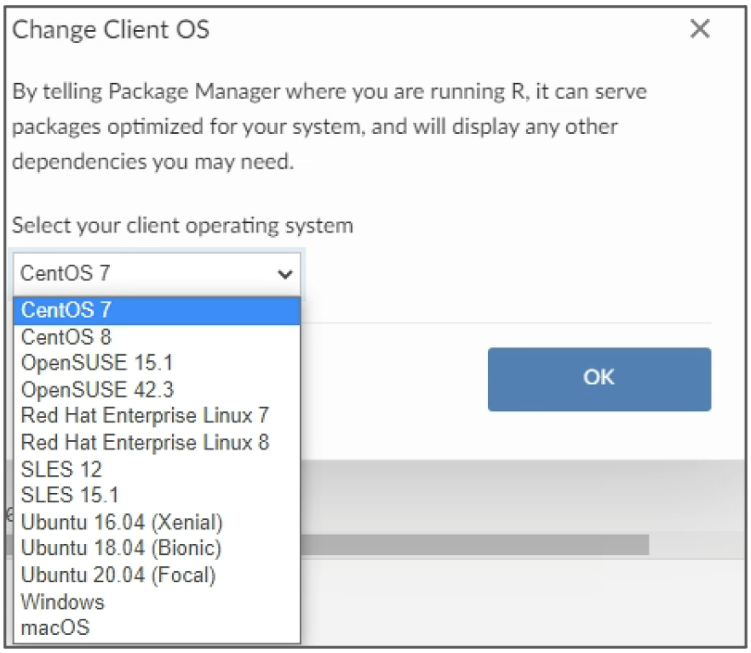


Each repository in RSPM will contain a Setup web page with instructions for configuring R to use RSPM. Once configured, you can access packages using standard functions such as install.packages(), available.packages(), packrak, and renv.

The repositories in RSPM are CRAN-like repositories thus you can use the usual R functions to access, query, and install packages.

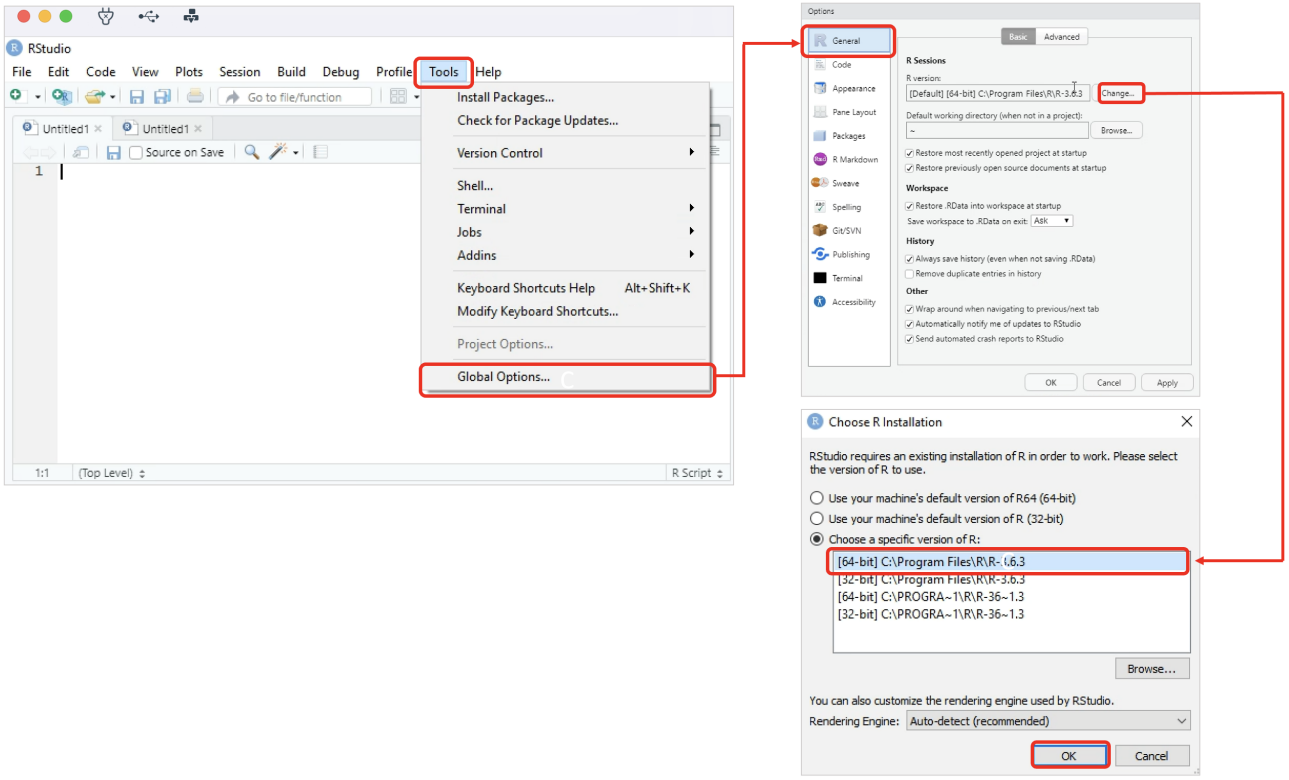
II. Configuring RSPM repositories

Install the system prerequisites for the repo's packages



Version Selection

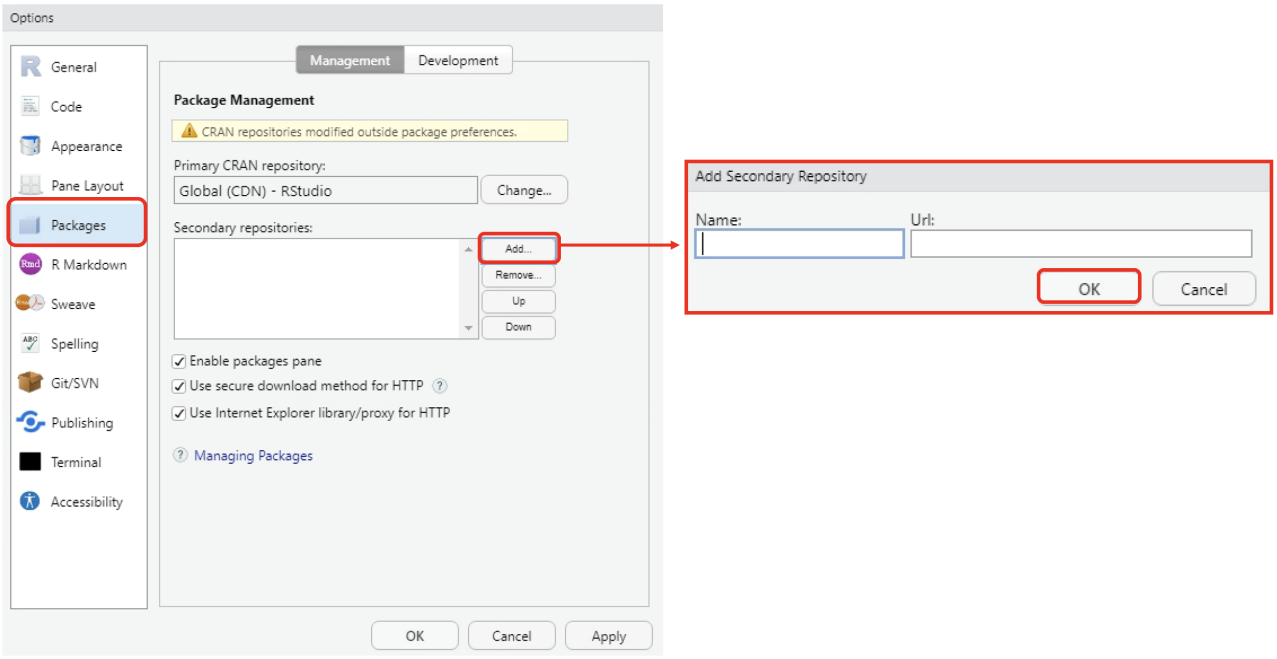
Selecting specific version of R as depicted in the diagram below. When you switch versions, remember to save your workspace before restarting the session to access the newly selected version of R you want to use. As of August 2021, the available versions are R 3.6.3 and R 4.0.4.



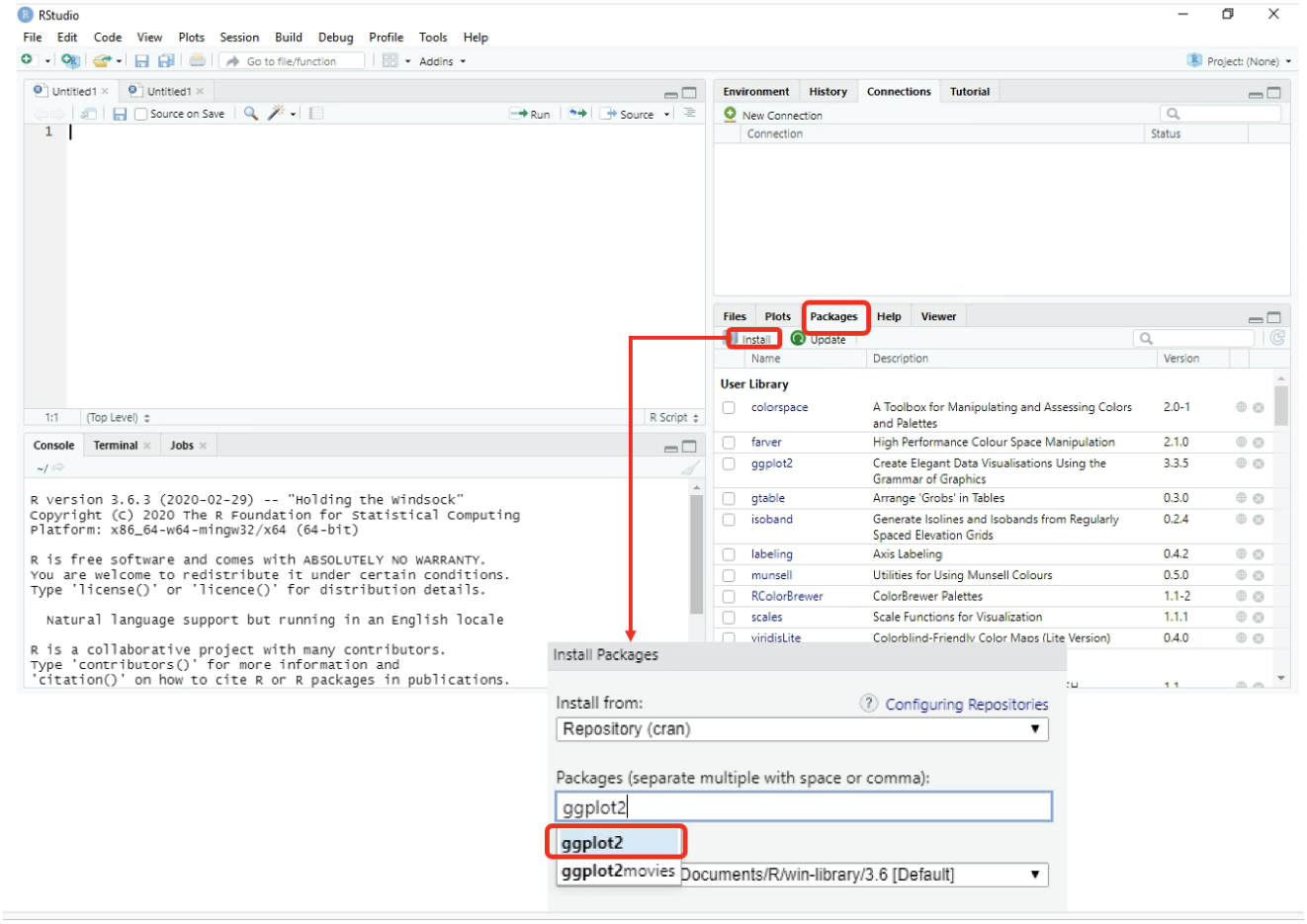
Using Packages INSIDE RStudio

In RStudio, go to the **Tools** section of the main toolbar and select **Global Options**. In the **Packages** sub-menu, the **Primary CRAN repo** is preset to Global (CDN) – RStudio. Click **Add** and type in the name and repository URL of the secondary repository and click **OK**.

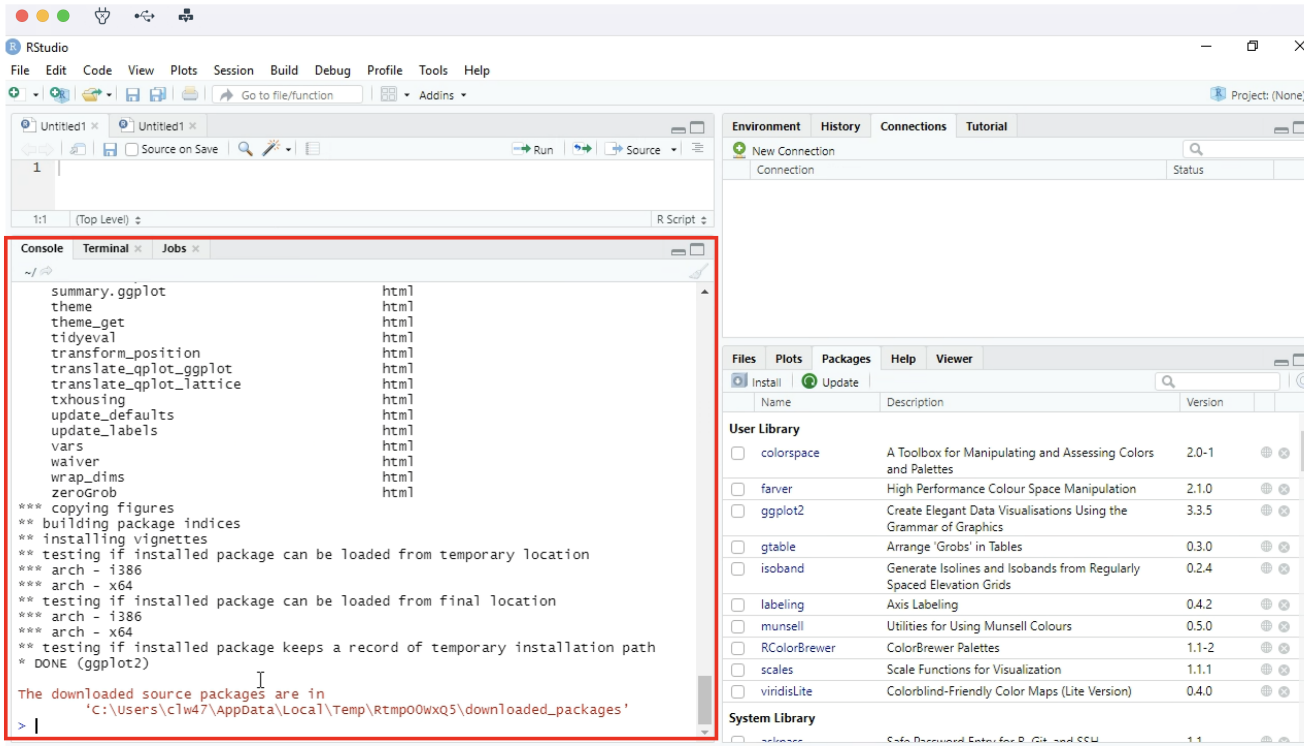
For projects requiring strict reproducibility, RStudio Support recommends configuring R to use a repository URL with a transaction ID. Versioning is available for all repository and source types.



Example 1: Installing ggplot2, a popular graphics package in R

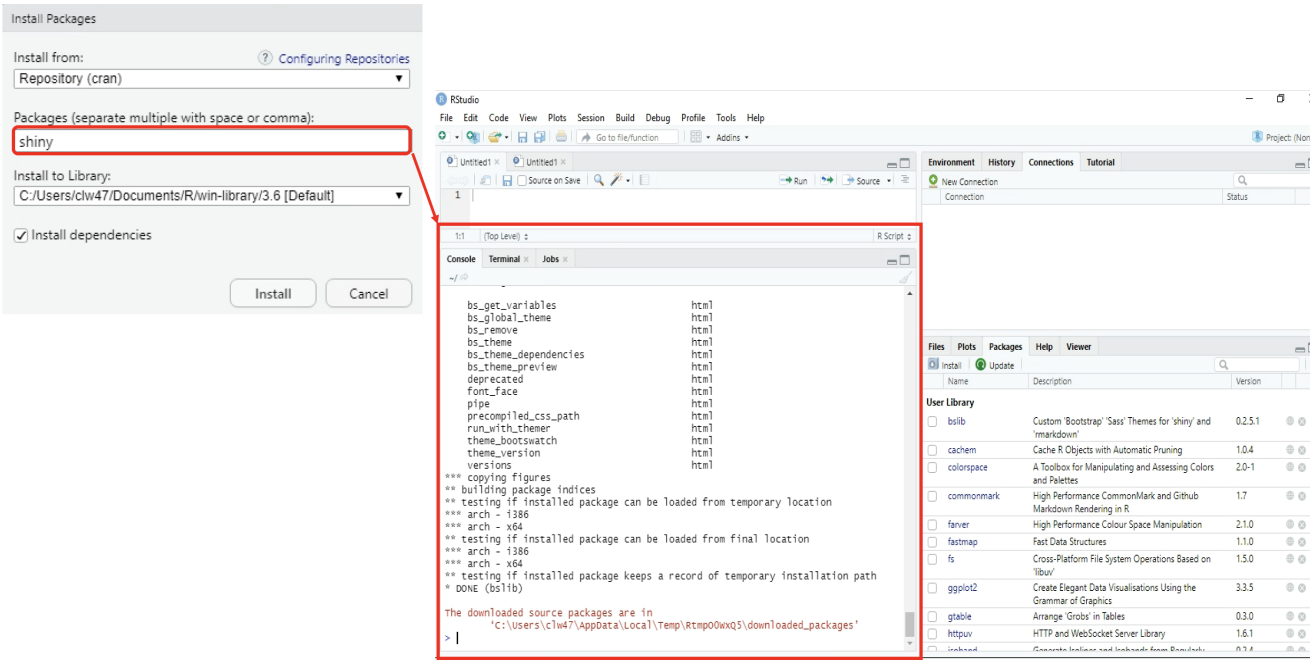


You can also run the following command install.packages("ggplot2") from the Console



Example 2 – Installing shiny

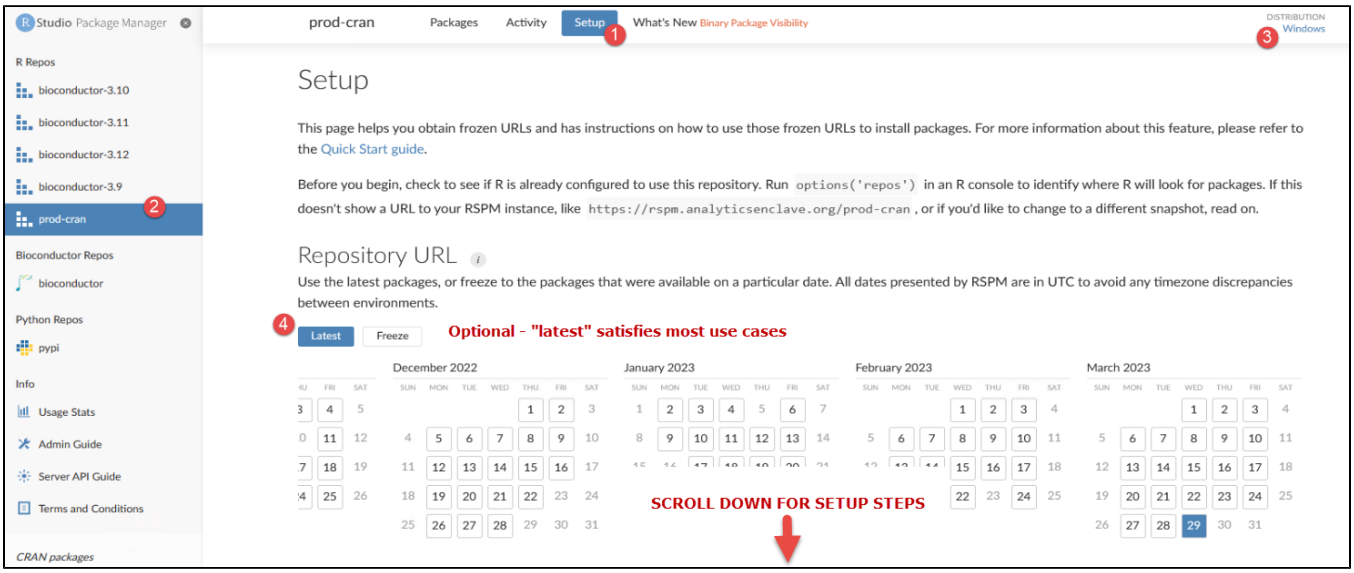
You can also run the following command install.packages("shiny") from the Console



Using Packages OUTSIDE RStudio

To configure R outside of RStudio, you can make use of the RSPM guided setup as follows.

1. Click **Setup**
2. Click **prod-cran** repository mirror
3. Choose your Distribution (OS)
4. Click **Latest**



Scroll down and follow the tailored RSPM instructions on the page based on your selections.

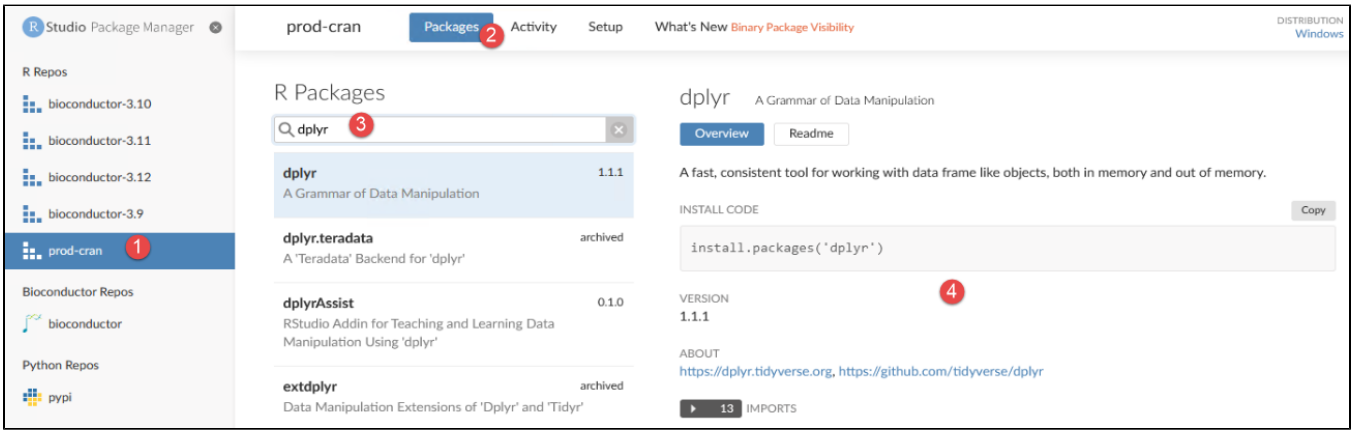
Add the following line to your R startup file (**`Rprofile.site`** or **`.Rprofile`**) to maintain the configuration across R sessions.

```
options(repos = c(REPO_NAME = "https://rspm.analyticsenclave.org/prod-cran/latest"))
```

III. Using RSPM to Search for Packages

RSPM is a public mirror of CRAN, Bioconductor and Pypi public repositories.

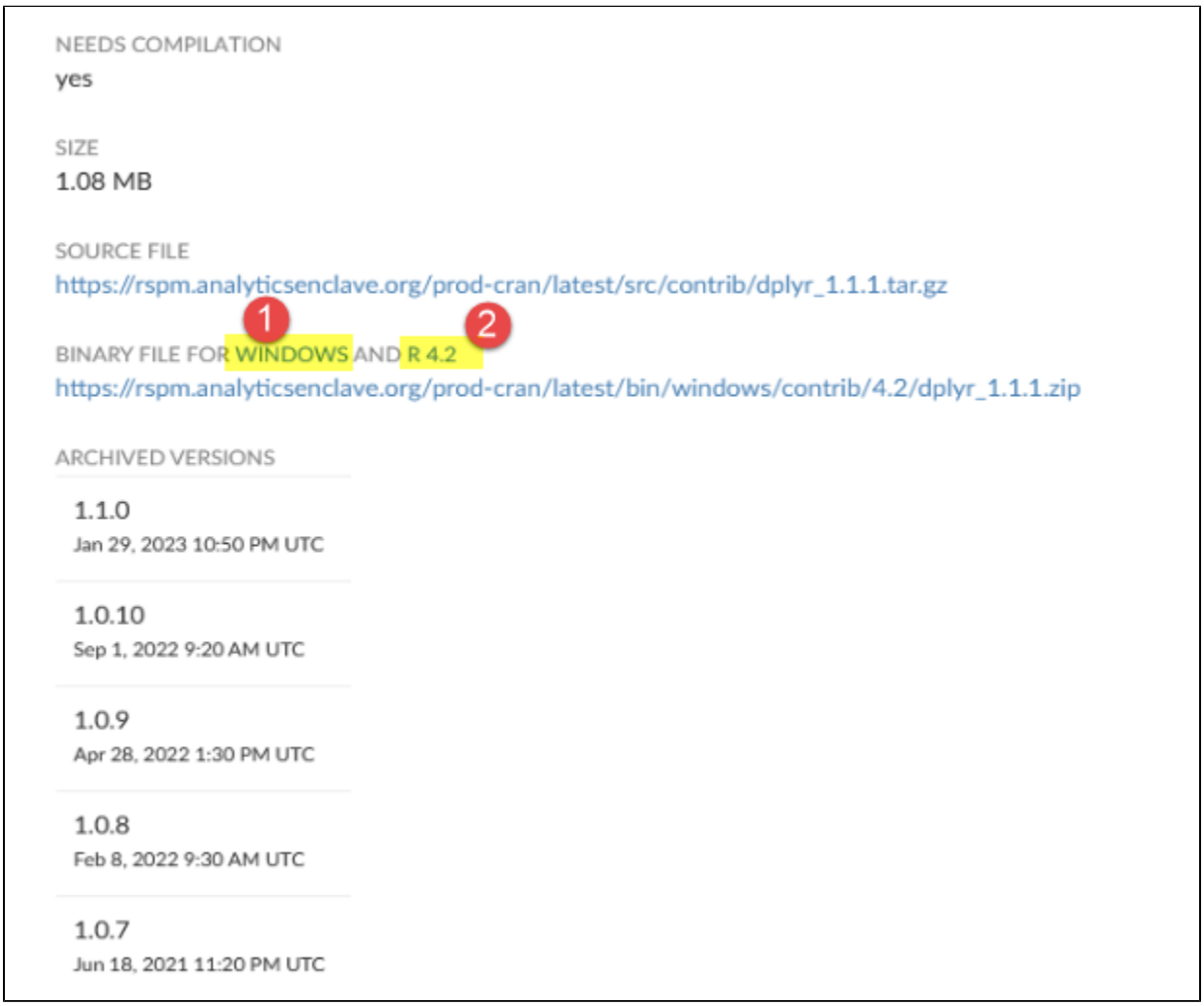
As such, RSPM simplifies the search for (and installation of) packages right from its Web UI, let's use it to search for the R package **dplyr** as follows :



As you can see, the Overview page provides important details such as installation code, source file, binary file and available versions of the package(s).

You may even download the OS-specific binary version of the package:

1. Change the Operating System seletion
2. Change the R version



IV. Relevant References

RStudio Package Manager Webinar - https://www.rstudio.com/resources/webinars/introduction-to-the-rstudio-package-manager/

Managing R with .Rprofile, .Renviron, Rprofile.site, Renviron.site, rsession.conf, and repos.conf

R Markdown Reference Guide - https://www.rstudio.com/wp-content/uploads/2015/03/rmarkdown-reference.pdf