

Instalación de R/RStudio

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GUIÓN

- Instalación de R
- Instalación de RStudio
- Instalación de paquetes necesarios
- Complementos



Nota: a la hora de seguir esta guía, si encontráis algún problema durante la instalación, podéis preguntar a vuestro servicio de informática o bien contactar conmigo a través de correo electrónico (mramon@jccm.es)

Instalación de R

1. Ir a la página del proyecto R (www.r-project.org) y descargarse la versión correspondiente al sistema operativo con el que trabajamos (Windows, Linux o OSX)
2. Elegir servidor de descarga y tipo versión del sistema operativo (32 o 64-bit)
3. Ejecutar el instalador (IMPORTANTE tener permisos de administrador para instalarlo. Si no dispones de ellos, pregunta al servicio de informática)

The screenshot shows the official website for The R Project for Statistical Computing. The URL in the address bar is r-project.org. The page features the R logo and navigation links for Home, Download (with a blue arrow pointing to CRAN), R Project, and R Foundation. The main content includes sections for Getting Started, News, and a sidebar with links for About R, Logo, Contributors, What's New?, Reporting Bugs, Conferences, Search, Get Involved: Mailing Lists, Developer Pages, R Blog, Foundation, and Members.

The R Project for Statistical Computing

Getting Started

R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS. To [download R](#), please choose your preferred [CRAN mirror](#).

If you have questions about R like how to download and install the software, or what the license terms are, please read our [answers to frequently asked questions](#) before you send an email.

News

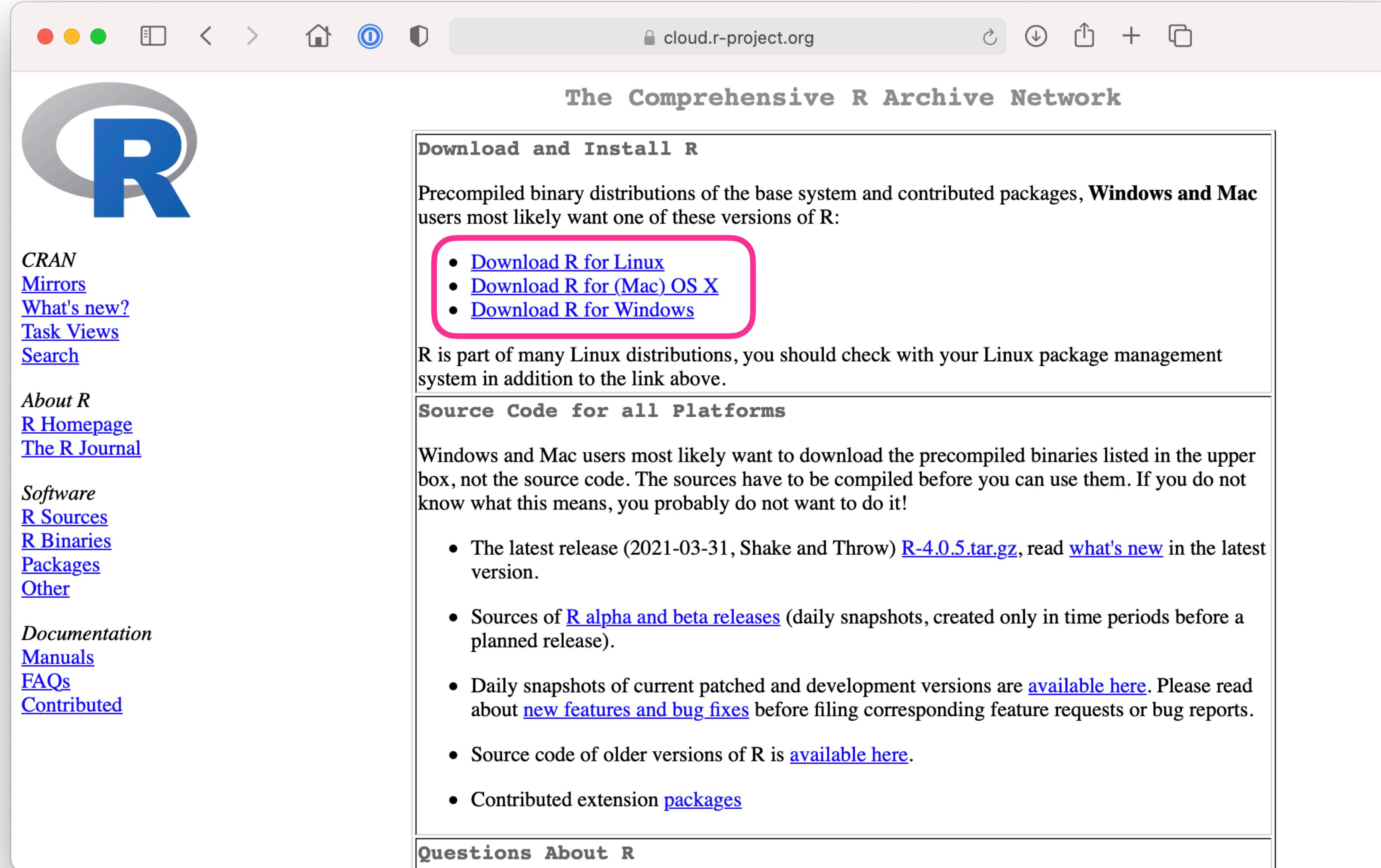
- [R version 4.0.5 \(Shake and Throw\) prerelease versions](#) will appear starting Wednesday 2021-03-24. Final release is scheduled for Wednesday 2021-03-31.
- [R version 4.0.4 \(Lost Library Book\)](#) has been released on 2021-02-15.
- Thanks to the organisers of useR! 2020 for a successful online conference. Recorded tutorials and talks from the conference are available on the [R Consortium YouTube channel](#).
- [R version 3.6.3 \(Holding the Windsock\)](#) was released on 2020-02-29.
- You can support the R Foundation with a renewable subscription as a [supporting member](#)

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](#).

Location	Mirror URL	Description
0-Cloud	https://cloud.r-project.org/	Automatic redirection to servers worldwide, currently sponsored by Rstudio
Algeria	https://cran.usthb.dz/	University of Science and Technology Houari Boumediene
Argentina	http://mirror.fcaglp.unlp.edu.ar/CRAN/	Universidad Nacional de La Plata
Australia	https://cran.csiro.au/ https://mirror.aarnet.edu.au/pub/CRAN/ https://cran.ms.unimelb.edu.au/ https://cran.curtin.edu.au/	CSIRO AARNET School of Mathematics and Statistics, University of Melbourne Curtin University
Austria	https://cran.wu.ac.at/	Wirtschaftsuniversität Wien
Belgium	https://www.freestatistics.org/cran/ https://ftp.belnet.be/mirror/CRAN/	Patrick Wessa Belnet, the Belgian research and education network
Brazil	https://nbcgib.uesc.br/mirrors/cran/ https://cran-r.c3sl.ufpr.br/ https://cran.fiocruz.br/ https://vps.fmvz.usp.br/CRAN/	Computational Biology Center at Universidade Estadual de Santa Cruz Universidade Federal do Paraná Oswaldo Cruz Foundation, Rio de Janeiro University of São Paulo, São Paulo

Elegimos un servidor del que descargar el programa. Podemos elegir cualquiera, normalmente el servidor que mantiene *RStudio* o el correspondiente a nuestro país



The screenshot shows a web browser window displaying the CRAN (Comprehensive R Archive Network) homepage. The URL in the address bar is `cloud.r-project.org`. The page features the CRAN logo (a stylized 'R' inside a circle) and a sidebar with various links like 'CRAN', 'Mirrors', 'What's new?', 'Task Views', 'Search', 'About R', 'R Homepage', 'The R Journal', 'Software', 'R Sources', 'R Binaries', 'Packages', and 'Other'. The main content area is titled 'The Comprehensive R Archive Network' and contains sections for 'Download and Install R' and 'Source Code for all Platforms'. The 'Download and Install R' section provides links for Linux, Mac OS X, and Windows users, with the Linux links highlighted by a pink rounded rectangle. The 'Source Code for all Platforms' section lists various sources and versions of R, including alpha/beta releases, daily snapshots, and source code for older versions. A 'Questions About R' section is also present at the bottom.

The Comprehensive R Archive Network

Download and Install R

Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most likely want one of these versions of R:

- [Download R for Linux](#)
- [Download R for \(Mac\) OS X](#)
- [Download R for Windows](#)

R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

Source Code for all Platforms

Windows and Mac users most likely want to download the precompiled binaries listed in the upper box, not the source code. The sources have to be compiled before you can use them. If you do not know what this means, you probably do not want to do it!

- The latest release (2021-03-31, Shake and Throw) [R-4.0.5.tar.gz](#), read [what's new](#) in the latest version.
- Sources of [R alpha and beta releases](#) (daily snapshots, created only in time periods before a planned release).
- Daily snapshots of current patched and development versions are [available here](#). Please read about [new features and bug fixes](#) before filing corresponding feature requests or bug reports.
- Source code of older versions of R is [available here](#).
- Contributed extension [packages](#)

Questions About R

Elegimos la versión del sistema operativo con la que trabajamos

R for Windows

Subdirectories:

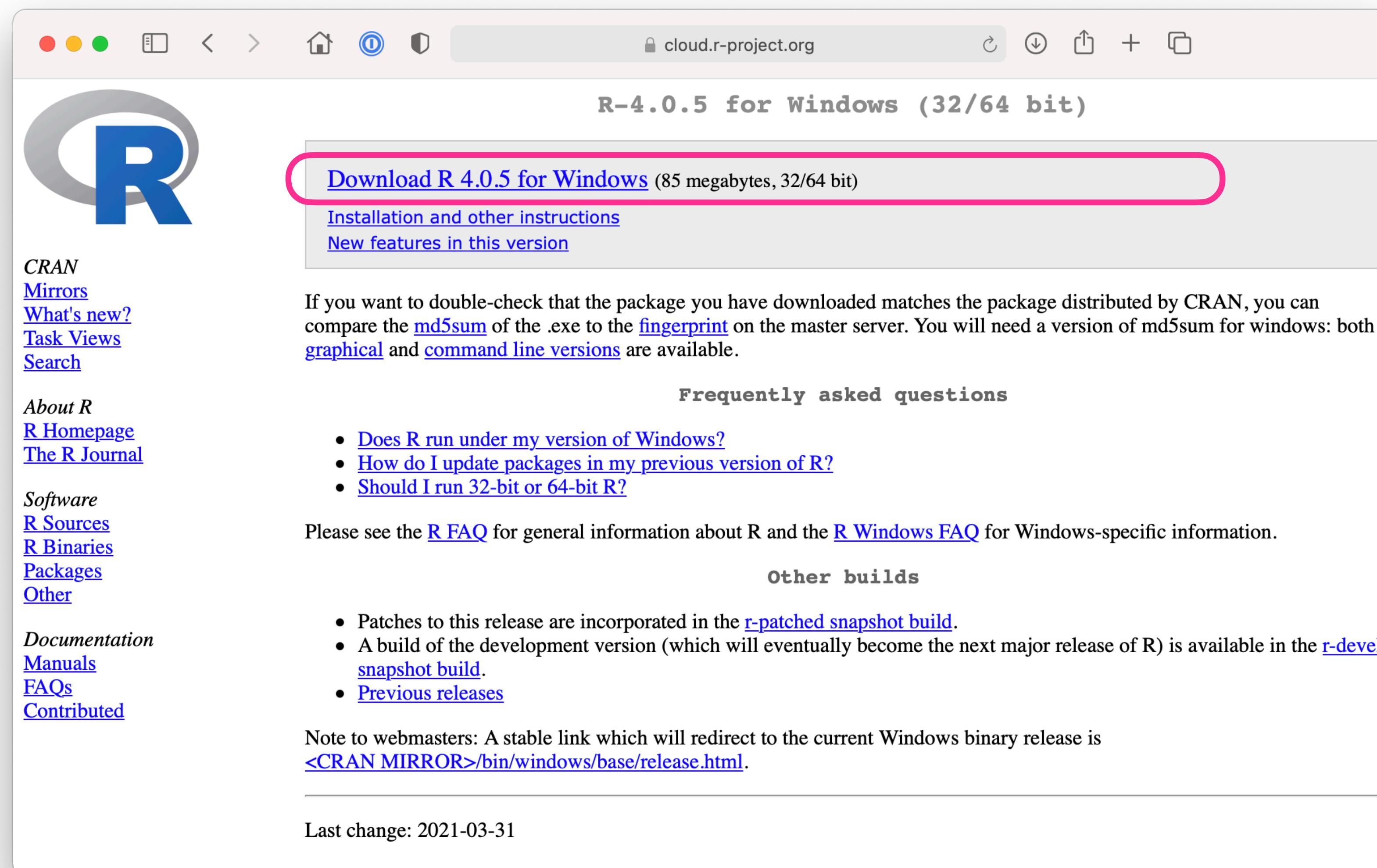
- [base](#) Binaries for base distribution. This is what you want to [install R for the first time](#).
- [contrib](#) Binaries of contributed CRAN packages (for R >= 2.13.x; managed by Uwe Ligges). There is also information on [third party software](#) available for CRAN Windows services and corresponding environment and make variables.
- [old contrib](#) Binaries of contributed CRAN packages for outdated versions of R (for R < 2.13.x; managed by Uwe Ligges).
- [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.

Elegimos el programa base



The screenshot shows a web browser window with the URL cloud.r-project.org in the address bar. The main content is titled "R-4.0.5 for Windows (32/64 bit)". On the left, there's a large R logo and a sidebar with links for CRAN, About R, Software, and Documentation. The central area has a prominent red oval highlighting the "Download R 4.0.5 for Windows (85 megabytes, 32/64 bit)" link. Below it are links for "Installation and other instructions" and "New features in this version". A note about md5sum and fingerprinting is present, followed by a "Frequently asked questions" section with links to R FAQ, How do I update packages, and Should I run 32-bit or 64-bit R?. A "Other builds" section lists r-patched snapshot build, r-devel snapshot build, and Previous releases. At the bottom, a note for webmasters provides a stable redirect link. The footer indicates the last change was on 2021-03-31.

R-4.0.5 for Windows (32/64 bit)

[Download R 4.0.5 for Windows](#) (85 megabytes, 32/64 bit)

[Installation and other instructions](#)

[New features in this version](#)

If you want to double-check that the package you have downloaded matches the package distributed by CRAN, you can compare the [md5sum](#) of the .exe to the [fingerprint](#) on the master server. You will need a version of md5sum for windows: both [graphical](#) and [command line versions](#) are available.

Frequently asked questions

- [Does R run under my version of Windows?](#)
- [How do I update packages in my previous version of R?](#)
- [Should I run 32-bit or 64-bit R?](#)

Please see the [R FAQ](#) for general information about R and the [R Windows FAQ](#) for Windows-specific information.

Other builds

- Patches to this release are incorporated in the [r-patched snapshot build](#).
- A build of the development version (which will eventually become the next major release of R) is available in the [r-devel snapshot build](#).
- [Previous releases](#)

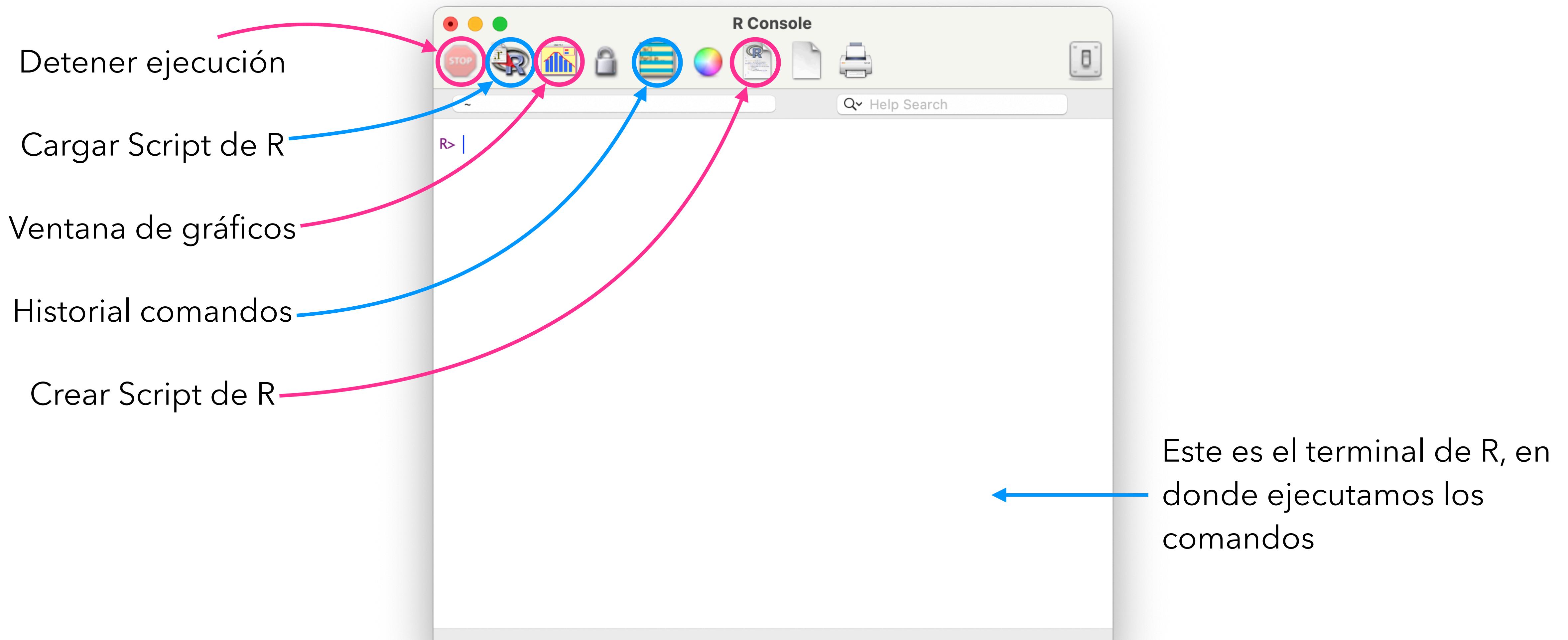
Note to webmasters: A stable link which will redirect to the current Windows binary release is
<CRAN MIRROR>/bin/windows/base/release.html.

Last change: 2021-03-31

Descargamos el programa. En la web tenéis un enlace a instrucciones de instalación así como las características nuevas en esa versión (respecto a la anterior). También hay un apartado de FAQ

Instalación de R

4. A lo largo de la instalación, existe la posibilidad de configurar alguna cosa. En nuestro caso vamos a aceptar la configuración por defecto
5. Al finalizar, tendremos acceso al programa R
6. Aunque se puede trabajar directamente con la interfaces de R, es conveniente usar algún IDE (*integrated development environment: software para la creación de aplicaciones que combina las herramientas habituales de los desarrolladores en una única interfaz gráfica de usuario*) como RStudio



Esta es la interface gráfica de R (en OSX)

Instalación de RStudio

1. Ir a la página de RStudio (<https://www.rstudio.com>) y descargarse la versión correspondiente al sistema operativo con el que trabajamos (Windows, Linux o OSX)
2. Elegir la versión gratuita de RStudio
3. Ejecutar el instalador (IMPORTANTE tener permisos de administrador para instalarlo. Si no dispones de ellos, pregunta al servicio de informática)

A screenshot of a web browser displaying the RStudio homepage. The URL in the address bar is <https://www.rstudio.com>. The page features a dark blue background with a large, faint graphic of interlocking gears on the left side. At the top, there is a navigation bar with links for DOWNLOAD, SUPPORT, DOCS, COMMUNITY, and a search icon. Below the navigation bar, there are several dropdown menu links: Products (which is highlighted with a pink rectangle), Solutions, Customers, Resources, About, and Pricing. A promotional banner in the center of the page announces a "Live Webinar | April 27th at 1pm ET" and the title "Why Your Enterprise Needs Code-First Data Science". A "LEARN MORE" button is located at the bottom of this banner.

Products ▾

Solutions ▾

Customers

Resources ▾

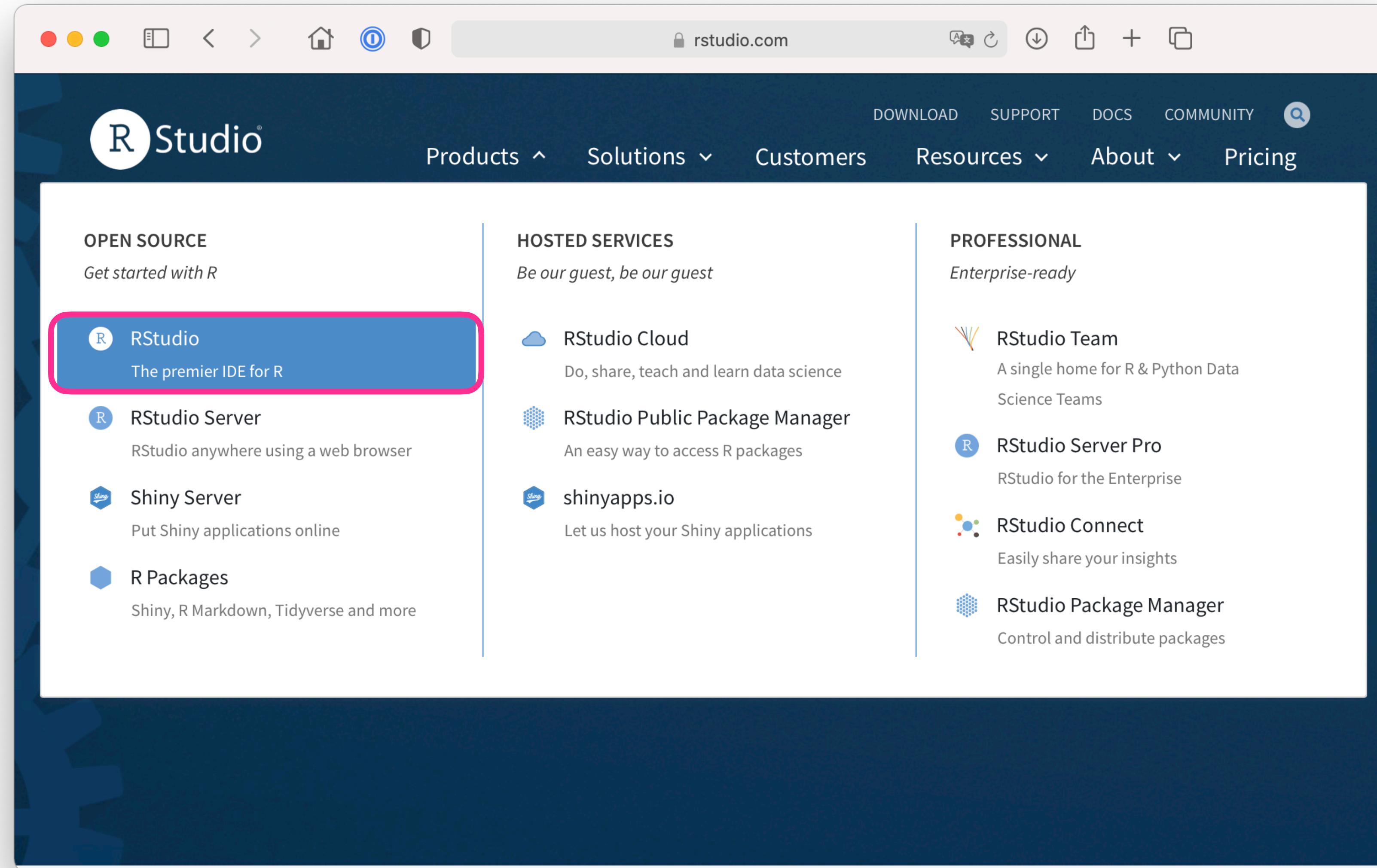
About ▾

Pricing

Live Webinar | April 27th at 1pm ET

Why Your Enterprise Needs
Code-First Data Science

LEARN MORE



En el menú Productos, elegimos RStudio

The screenshot shows the RStudio website (rstudio.com) displayed in a web browser. The main page features a large blue header with the RStudio logo and navigation links for DOWNLOAD, SUPPORT, DOCS, COMMUNITY, Products, Solutions, Customers, Resources, About, and Pricing. A secondary window or overlay is visible, also titled 'rstudio.com', which displays a message about an announcement and compares two versions of RStudio: RStudio Desktop and RStudio Server.

RStudio

Take control of your R code

RStudio is an integrated development environment (IDE) for R that provides a rich interface for writing and editing R code, highlighting editor that supports direct code execution, debugging and workspace management.

RStudio is available in **open source** and **commercial** editions (Windows, Mac, and Linux) or in a browser container (RStudio Server Pro (Debian/Ubuntu, Red Hat/CentOS, and SUSE Linux)).

[Read the Announcement](#)

There are two versions of RStudio:

- RStudio Desktop**
Run RStudio on your desktop
- RStudio Server**
Centralize access and computation

Take a tour of RStudio's IDE

Elegimos la versión de escritorio

The screenshot shows a web browser window displaying the RStudio Desktop website at rstudio.com. The page has a light gray background with a white header bar containing standard browser controls (red, yellow, green buttons, back, forward, home, search, refresh) and a URL bar showing the site address. Below the header, the RStudio logo is displayed, followed by the text "R Studio Desktop". On the left side, there is a vertical sidebar with the word "Overview" centered. The main content area is divided into two sections: "Open Source Edition" and "RStudio Desktop Pro". The "Open Source Edition" section is highlighted with a red rounded rectangle border. It contains a list of features:

- Access RStudio locally
- Syntax highlighting, code completion, and smart indentation
- Execute R code directly from the source editor
- Quickly jump to function definitions
- View content changes in real-time with the Visual Markdown Editor
- Easily manage multiple working directories using projects
- Integrated R help and documentation
- Interactive debugger to diagnose and fix errors
- Extensive package development tools

The "RStudio Desktop Pro" section follows, preceded by a thin horizontal line. It begins with the text "All of the features of open source; plus:" followed by a list of additional features:

- A commercial license for organizations not able to use AGPL software
- Access to priority support
- [RStudio Professional Drivers](#)
- Connect directly to your RStudio Server Pro instance remotely

At the bottom of the "RStudio Desktop Pro" section, another thin horizontal line separates it from a final list item:

- Priority Email Support

Elegimos la versión estándar (gratuita)

A screenshot of the RStudio Desktop application running on a Mac. The interface includes a top menu bar, a toolbar with various icons, and a main workspace divided into several panes. One pane shows a code editor with R code, another shows a file browser with project files, and a third shows a scatter plot.

RStudio Desktop 1.4.1106 - [Release Notes](#)

1. Install R. RStudio requires [R 3.0.1+](#).
2. Download RStudio Desktop. Recommended for your system:

 [DOWNLOAD RSTUDIO FOR MAC](#)
1.4.1106 | 153.35MB

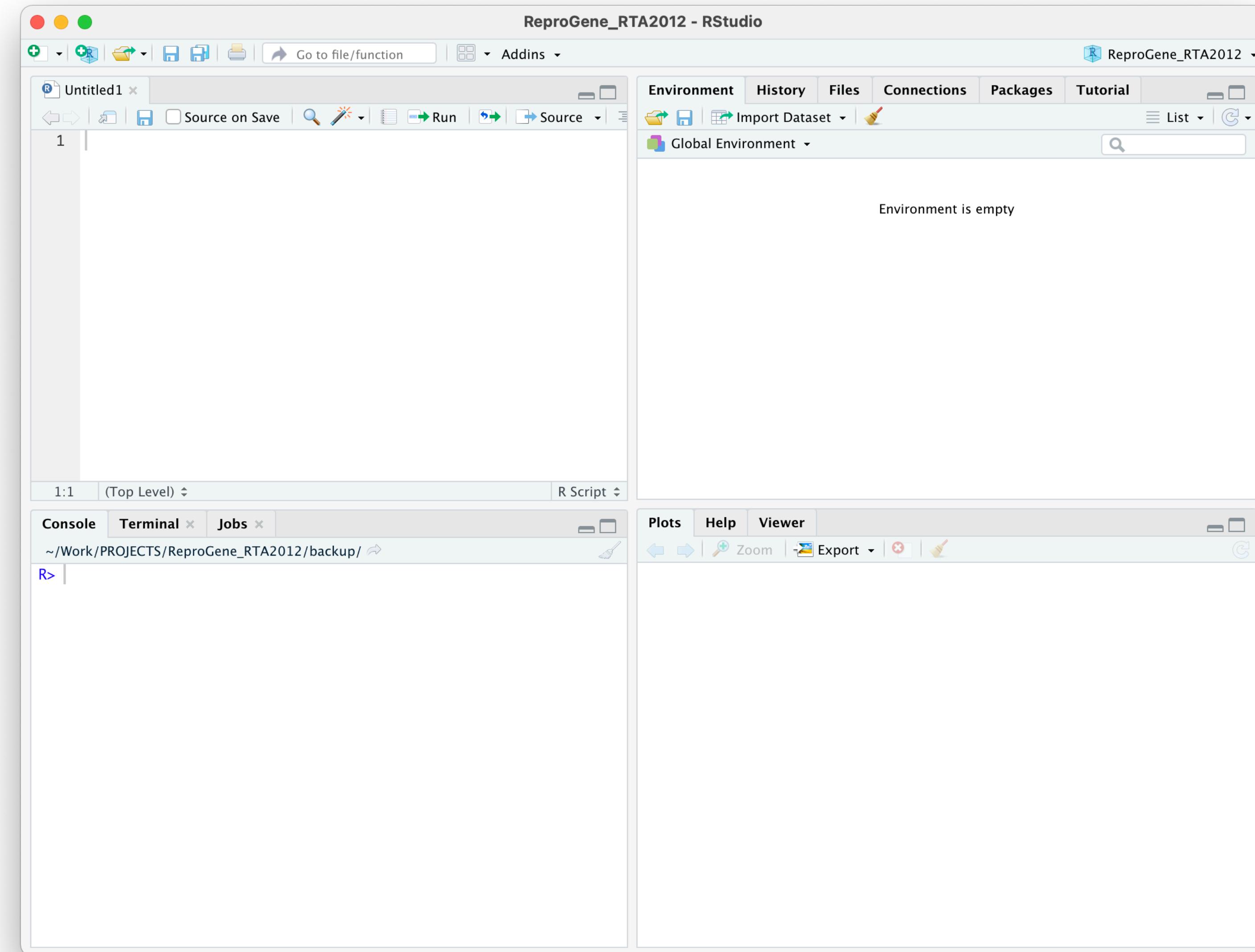
Requires macOS 10.13+ (64-bit)

All Installers

Linux users may need to import [RStudio's public code-signing key](#) prior to installation, depending on the operating system's security policy.

RStudio requires a 64-bit operating system. If you are on a 32 bit system, you can use an [older version of RStudio](#).

Descargamos la versión que nos aparece (detecta nuestro sistema operativo). La web nos recuerda que tenemos que tener instalado R



Esta es la interface gráfica de RStudio

Instalación de RStudio

4. Una vez instalado, podemos abrir RStudio y ejecutar R desde la IDE, además de editar scripts, explorar archivos, etc...
5. RStudio tiene muchas opciones de personalización
6. En clase veremos la IDE en detalle

Instalación de paquetes

1. Un paquete de R (package) es una colección de funciones y/o datos
2. Por defecto, R instala una serie de paquetes básicos. Ejecuta en la consola de R el comando `sessionInfo()`
3. Durante el curso vamos a usar una serie de paquetes adicionales. Para instalarlos:
 - a. Abre RStudio.
 - b. Abre el script llamado `intro2R_packages.R` dando el botón de la carpeta que hay en la esquina superior izquierda.
 - c. Una vez abierto, dale al botón “Source” que hay en la ventana del editor de scripts, arriba a la derecha.
 - d. Comenzará la instalación de los paquetes
4. Si prefieres, lo podemos hacer durante el curso

Complementos

1. Puede ser interesante instalar un editor de scripts (Visual Studio Code; Sublime Text, Textwrangler, Atom, etc)
2. Es interesante familiarizarse con el terminal (*cmd* en Windows; *shell* en Linux/OSX) para explorar archivos y hacer operaciones básicas de manera rápida y “sencilla”
3. En caso de trabajar de forma habitual con desarrollo de programas es conveniente usar un sistema de control de versiones (*VCS: versión control system*) como SVN o Git