R Setup

Tim Graham, Carly Green, Michael Green

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Contents

1. Introduction

1.1 Purpose of Document

This document will guide you on how to install and setup R, RStudio and Rtools on your machine, so that the Fiji FNMS project can be run on your machine.

1.2 Systems to be Installed

- **R** is the programming language that this project is written in, this must be installed for the project to run on your machine.
- **RStudio** is an integrated development environment (IDE) which is commonly used by R developers, this will be used to navigate the project's code base.
- **Rtools** is a set of programs that is required on Windows to build R packages from source.

2. Pre-requisites

- Windows 64-bit machine
- Admin privileges on your user account
- R and Rstudio not currently installed on your machine

3. Installing R

To start with, you must download the appropriate distribution of R. To do this visit Comprehensive R Archive Network and click on **Download R for the first time** and then click on **Download R 4.1.2 for Windows** an exe file will then download to your machine. **Note R version may have changed since time of writing**

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old contrib	Binaries of contributed CRAN packages for outdated versions of R (managed by Uwe Ligges).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.

R-4.1.2 for Windows (32/64 bit)

Download R 4.1.2 for Windows (86 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?

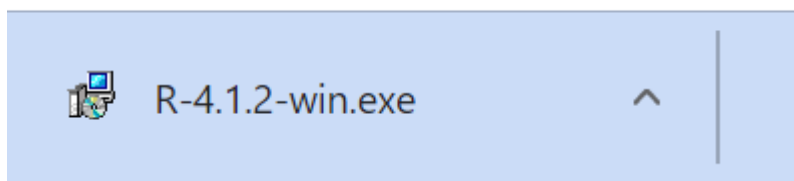Please see the R FAQ for general information about R and the R Windows FAQ for Windows-specific information.

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.

Run the .exe file that has downloaded to your machine. Ensuring that your user account has administrator privileges.

Proceed through the installation wizard, accepting all default settings. Once you have done this, R is installed and you can proceed to the installation of RStudio.

4. Installing RStudio

Start by downloading the latest version of Rstudio from the RStudio website. This will download a .exe file to your machine.

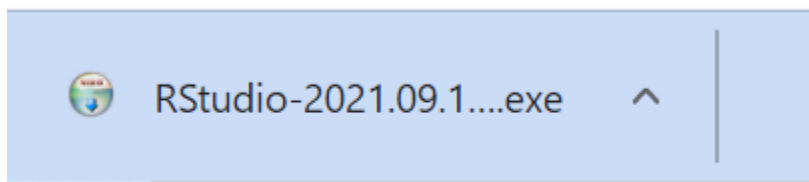Open the .exe file, this will launch the RStudio installation wizard, proceed through the installation wizard, accepting all default settings.

5. Installing Rtools

5.1 Installation

To install Rtools please visit the R for Windows Build Tools Archive and download the version which corresponds to the version of R that you installed in section 3 of this manual. This will download a .exe file to your machine.
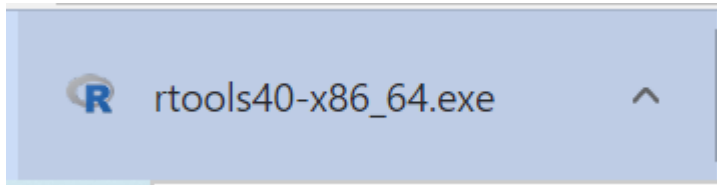
Rtools Downloads

Some of the tools are incompatible with obsolete versions of R. We maintain one actively updated version of the tools, and other "frozen" snapshots of them. We recom release of R.

The current version of this file is recorded here: VERSION.txt. **This version matches the R version installed in this manual**

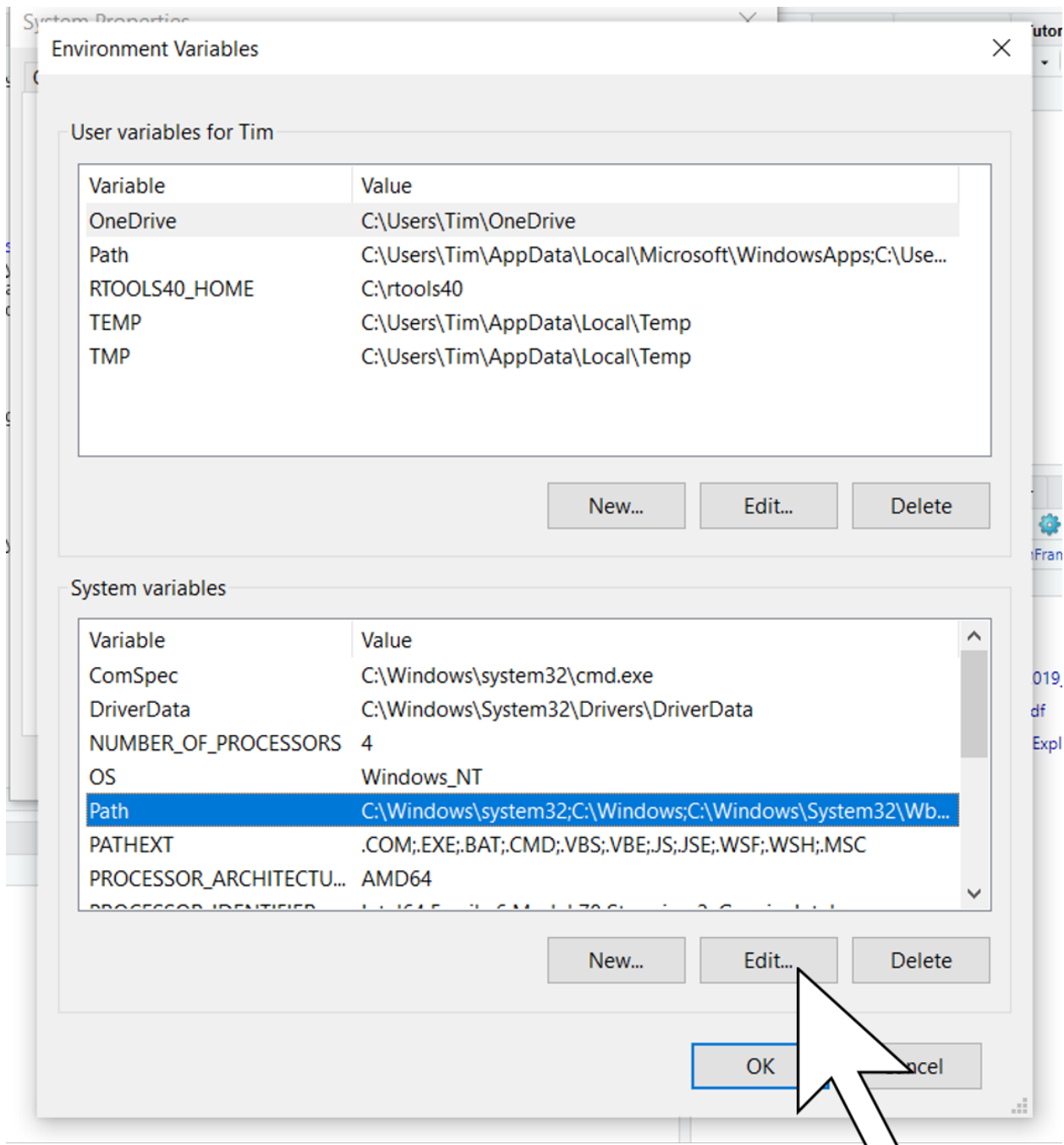| Download	R compatibility	Frozen?
Windows 64-bit: rtools40-x86_64.exe (recommended: includes both i386 and x64 compilers) Windows 32-bit: rtools40-i686.exe (i386 compilers only)	R 4.0 and up	No
Rtools35.exe	R 3.3.x to 3.6.x	Yes
Rtools34.exe	R 3.3.x to 3.6.x	Yes
Rtools33.exe	R 3.2.x to 3.3.x	Yes
Rtools32.exe	R 3.1.x to 3.2.x	Yes
Rtools31.exe	R 3.0.x to 3.1.x	Yes
Rtools30.exe	R > 2.15.1 to R 3.0.x	Yes
Rtools215.exe	R > 2.14.1 to R 2.15.1	Yes
Rtools214.exe	R 2.13.x or R 2.14.x	Yes
Rtools213.exe	R 2.13.x	Yes
Rtools212.exe	R 2.12.x	Yes

Open the .exe file, this will launch the Rtools installation wizard, proceed through the installation wizard, accepting all default settings.

R rtools40-x86_64.exe ∧

5.2 System Settings

In order for Rtools to work on your machine you must update your Windows System Variables. To do this:

1. Go to Windows settings
2. System
3. About
4. Advanced system settings
5. Environment variables

6. Select **Path** under System Variables and click edit
7. Click **New** and paste the following **C:\rtools40\usr\bin**
8. Click **OK** and you are finished

Edit environment variable   ✕

%SystemRoot%\system32
%SystemRoot%
%SystemRoot%\System32\Wbem
%SYSTEMROOT%\System32\WindowsPowerShell\v1.0\
%SYSTEMROOT%\System32\OpenSSH\
C:\Program Files (x86)\Intel\Intel(R) Management Engine Compone…
C:\Program Files\Intel\Intel(R) Management Engine Components\D…
C:\Program Files\TortoiseSVN\bin
C:\rtools40\usr\bin

New

Edit

Browse…

Delete

Move Up

Move Down

Edit text…

OK   Cancel