rsetup

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2023-11-07

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Introduction

> **Tip**
>
> Having an up-to-date environment is the first good practice.

Part I

Installation

Windows 10/11

Prerequisites

The **Windows Subsystem for Linux (WSL)** enables you to access the power of both Windows and Linux at the same time on a Windows machine. WSL lets you install a Linux distribution (such as Ubuntu, OpenSUSE, Kali, Debian, Arch Linux, etc.) and use Linux applications, utilities, and Bash command-line tools directly on Windows, unmodified, without the overhead of a traditional virtual machine or dualboot setup.

> ⚠ Warning
>
> You must use **Windows 10/11** to run WSL.

This module is required to install **Docker Desktop**.

To install **WSL**, open PowerShell or Windows Terminal in **Administrator mode** by right-clicking and selecting "Run as administrator", and enter the following command:

```
## Install Windows Subsystem for Linux ----
wsl --install
```

Restart your machine to complete the installation.

This command enables the features necessary to run WSL and install the **Ubuntu distribution** of Linux. After the reboot, a terminal will ask you to pick a **username** and a **password** for Ubuntu.

Finally, just ensure that you use the version 2 of **WSL**. Close and reopen PowerShell or Windows Terminal in **Administrator mode** by right-clicking and selecting "Run as administrator", and enter the following command:

```
## Set WSL default version ----
wsl --set-default-version 2
```

That's it! You have install Ubuntu as a Windows App.

> **Update your Linux system regularly**
>
> Keep your Ubuntu distribution up-to-date by running:
>
> ```
> ## Update Linux packages ----
> sudo apt update && sudo apt upgrade
> ```

Installation

Software	Description	Website
R	The R environment	link
Rtools	A toolbox to build R packages from source	link
RStudio Desktop	Integrated development environment (IDE) for R	link
Pandoc	Document converter used by `rmarkdown`	link
Quarto CLI	Scientific publishing system built on Pandoc	link
Git	Version control software	link
Docker Desktop	Containerization software	link

We are going to install the required software by using **Chocolatey**, a package manager for Windows. A package manager is a way to get software (and software updates) onto your machine without much work on your part. It's the Windows equivalent of `yum`, `pacman` or `apt-get`.

To install **Chocolatey**, open PowerShell or Windows Terminal in **Administrator mode** by right-clicking and selecting "Run as administrator", and enter the following command:

```
## Install Chocolatey Package Manager ----
Set-ExecutionPolicy Bypass -Scope Process -Force; [System.Net.ServicePointManager]::Securi
```

Check your installation by running:

```
## Get Chocolatey version ----
choco --version
# Chocolatey v2.2.2
```

It's time to install the required softwares:

```
## Install R environment ----
choco install r r.studio rtools

## Install git ----
choco install git

## Install literate programing tools ----
choco install pandoc quarto

## Install Docker ----
choco install docker-desktop
```

In addition, we need to install the package `quarto`:

```
## Install quarto package ----
install.packages("quarto")
```

Finally, let's install a `LaTeX` distribution to convert documents from `.Rmd` (or `.qmd`) to `.pdf`. We are going to install a lightened distribution w/ the package `tinytex`.

```
## Install tinytex package ----
install.packages("tinytex")

## Install LaTeX distribution ----
tinytex::install_tinytex()
```

> **!** Important
>
> If you already have a `LaTeX` distribution, do not use `tinytex`.

Check

⚠ Restart your machine.

Open **RStudio** and run:

```
## Get R version ----
R.version.string
# "R version 4.3.2 (2023-10-31)"
```

```
## Check if git is installed ----
Sys.which("git")
#                                 git
# "C:\\PROGRA~1\\Git\\cmd\\git.exe"

## Check if Rtools is installed ----
Sys.which("make")
#                                 make
# "C:\\rtools43\\usr\\bin\\make.exe"

## Check if Pandoc is installed ----
Sys.which("pandoc")
#                                                       pandoc
# "C:\\Users\\janedoe\\AppData\\Local\\Pandoc\\pandoc.exe"

## Check if Quarto is installed ----
Sys.which("Quarto")
#                                                                 Quarto
# "C:\\Users\\janedoe\\AppData\\Local\\Programs\\Quarto\\bin\\quarto.exe"

## Check if LaTeX is installed ----
Sys.which("pdflatex")
#                                                                    pdflatex
# "C:\\Users\\janedoe\\AppData\\Roaming\\TinyTex\\bin\\windows\\pdflatex.exe"

## Check if Docker is installed ----
Sys.which("docker")
#                                                         docker
# "C:\\PROGRA~1\\Docker\\Docker\\RESOUR~1\\bin\\docker.exe"

## Install package from sources ----
install.packages("jsonlite", type = "source")
```

Congratulations

You have installed a working environment for data science w/ and . **Now follow instruction to configure your system.**

macOS

...

Ubuntu/Debian

...

Arch Linux

...

Part II

Configuration

RStudio

...

git

...

GitHub SSH keys

...

GitHub Personal Access Token

...