RAINFOREST ALLIANCE QGIS GUIDANCE INSTALLING QGIS IN OSGEO4W AND PYTHON.

Version 1.0

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1. INTRODUCTION

What is QGIS

QGIS is an open-source, user-friendly, and professional GIS application licensed under the GNU General Public License. It runs on Linux, Unix, Max OSX, Windows, and Android and supports numerous vectors, raster, and database formats and functionalities.

This document will guide how to use QGIS tool to:

- 1) Download and install QGIS in OSGeo4W
- 2) Set up Python for QGIS

The first section shows how to download and set up QGIS. In the second section, you can see how to configure python and install the required packages to run the QGIS risk tool.

Please note:

QGIS 3.2.4 Tisler for Windows 10 was used to create this guidance document.

2. DOWNLOADING QGIS IN OSGeo4W

To download QGIS go to the <u>official page</u> and select the option QGIS in OSGeo4W (recommended for regular users) and download the installer.

ownload QGIS	for your platform
nary packages (installers) are ava	ilable from this page.
e current version is QGIS 3.24.3	Tisler' and was released on 13.05.2022.
e long-term repositories currently	offer QGIS 3.22.7 'Białowieża'.
GIS is available on Windows, mac	OS, Linux and Android.
e are currently in feature freeze p	ecceding the release of QGIS 3.26. Please consider testing the prereleases. See road map.
NSTALLATION DOWNLOADS	ALL RELEASES SOURCES
Download for Windows	
Download for Windows	ended for regular users):
Oownload for Windows	ended for regular users): 04W Network installer a ³
Download for Windows	ended for regular users): o4W Network Installer a ⁿ as Install and select QGIS to install the <i>latest release</i> or QGIS LTR to install the <i>long term release</i> . e several optional packages including non-free software. To avoid those you have to use the Advanced or qgis-ttr in the desktop section.
Download for Windows	ended for regular users): o4W Network Installer s ^a as install and select QGIS to install the <i>latest release</i> or QGIS LTR to install the <i>long term release</i> . e several optional packages including non-free software. To avoid those you have to use the Advanced or qgIs-ttr in the desktop section. etups from OSGeo4W v1 using this repository are not supported. You need to do a fresh install or use a

Figure 1. QGIS installer.

Once the installer has been downloaded, execute it, and follow the next instructions:

١.	Select Advance Install			
OSGe	eo4W Setup	-		×
	OSGeo4W Net Release Setup Program		۲	
	This setup program is used for the initial installation of the OSGeo4W environment as well as all subseq updates. Make sure to remember where you saved it.	juent		
	The pages that follow will guide you through the installation. Please note that OSGeo4W co			
	O Express Install			
	Advanced Install			
	< Back	t>	Can	icel

Figure 2. Install QGIS using the Advanced Install

2. Select install from the internet

OSGeo4W Setup - Choose Installation Type	-		×
Choose A Download Source Choose whether to install or download from the internet, or install from files in a local directory.		0	۲
Instal from internet			
© <u>D</u> ownload Without Installing			
O Install from Local Directory			
< <u>B</u> ack	<u>N</u> ext >	Ca	incel

Figure 3. Install QGIS from the internet.

After selecting install from the internet, it will be required to define a root install directory. By default, the installer tool points to C:\ in this case, leave it. In case of C:\ is not automatically selected, please select C:\OSGeo4W.

3. Select installation just for me and add an icon to Start Menu.

OSGeo4W Setup - Choose Installation Directory	- 0	×
Select Root Install Directory Select the directory where you want to install OSGeo4W. Also cho few installation parameters.	oose a	æ
Root Directory		
C:\OSGeo4W	Browse	
Install For		
All Users (RECOMMENDED)		
OSGeo4W will be available to all users of the system.	Create icon on Desktop	
(e) Just Me OSGeo4W will only be available to the current user. Only select this if you lack Admin. privileges or you have specific needs.	Add icon to Start Menu	
	< Back Next > Can	cel

Figure 4. (default) Root directory "C:\OSGeo4W

4. The next window(s) will be left by default as well.

()	,			
OSGeo4W Setup - Select Local Package Directory		-		×
Select Local Package Directory Select a directory where you want Setup to store the installation files it downloads. The directory will be created if it does not already exist.				۲
Local Package Directory				
C:\Users\JMendoza\AppData\Local\Temp		Browse		
Start menu name				
OSGeo4W				
	< Back	Next >	С	ancel
	. 2001			

Figure 5. Keep the default setting.

5. Select the internet connection selecting "Use System Proxy Settings".

OSGeo4W Setup - Select Connection Type	-		×
Select Your Internet Connection Setup needs to know how you want it to connect to the internet. Choose the appropriate settings below.		(۲
Use System Proxy Settings Direct Connection Use HTTP/FTP Proxy: Proxy Host Port 80			
< Back Nex	d >	Can	cel

Figure 6. Select your internet connection step

6. Select http://ftp.osuosl.org option when asked to pick a download site

Note: in case the recommended site does not work, try the other two sites.

hoose A Do	wnload Site			4	6
Choose a si	e from this list, or add your own sites	to the list			0
	Available Download Sites:				
	http://download.osgeo.org				
	http://ftp.osuosl.org				
	http://www.horbit.de				
User URL:			Add	i i	
					_

Figure 7. Select the site where to download QGIS (https://ftp.osuosl.org).

- 7. The next step is to activate the packages to be installed together with QGIS, click on "skip" to enable the installation of:
 - a. qgis: QGIS Desktop and,
 - b. qgis-full: QGIS full Desktop

Note: The software version 3.24 may be different from the image below

earch	Qlear			○ <u>K</u> eep	○ Prev ● Curr ○ Egp View Category
Category	New	B	S	Size	Package
E All 😯 Default			-		
E Commandin	e_Utilities 😯 Default				
E Desktop	Default				
	Skip	nja	n/a	448k	alkis-import: norGIS ALKIS Import
	Skip	nja	nja	423k	gpsbabel-gui: GPSBabel GUI Frontend
	Skip	nja	nja	91,851k	grass: GRASS GIS 7.8
	Skip	nja	nía	95,384k	grass8: GRASS GIS 8.0
	Skip	nja	nía	24k	libzip-tools: libzip (executables)
	3.24.1-2	\boxtimes		40,023k	qgis: QGIS Desktop
	Skip	nja	nja	113,656k	qgis-dev: QGIS nightly build of the development b
	Skip	nja	nía	1k	qgis-dev-full: QGIS nightly build of the development
	Skip	nja	n/a	1,056,698k	qgis-dev-pdb: Debugging symbols for QGIS nightly
	3 .24.1-2	\times		1k	qgis-full: QGIS Full Desktop (meta package)
	() Skip	nja	nja	40,864k	qgis-tr: QGIS Desktop (long term release)
	€ Skip	nja	nja	99,510k	qgis-tr-dev: QGIS nightly build of the long term rele
	4 Skip	nja	nja	1k	qgis-tr-dev-tull: QGIS nightly build of the long term
	• Skip	nja	nja	949,516k	qgis-tr-dev-pdb: Debugging symbols for QGIS nigt
	e Skip	nja	nja	IK 00.000	qgis-tr-full: QGIS Full Desktop (meta package; Ion
	• Skip	ηία	nja	90,969k	gis-tr-pap: Debugging symbols for the QGIS long
	ey skip	nja	nji G	33,252K	gis-pap. Depugging symbols for QGIS
	ey skip	nja	n/a	38,433K	agis re-dev; agais nightly build of the latest releas
	• skip	nja	nja	IK	quistercevituri. Qicito nightiy build of the latest reli

Figure 8. Select the packages to be installed with QGIS

8. Finally, accept the additional packages that will be installed and then license conditions.

OSGeo4V	V Setup - Resolve Dependencies	8-0		×
Warning! The foll	Unnet Dependencies Found owing packages are required but have not been selected.		(Ð
avce00	(2.0.0-3) The AVCE00 commandline utilities for Arc/Info E00 conversion Required by: grass		^	
base	(1.0.0-18) OSGeo4W base package Required by: setup, python3-setuptools, qt5-libs, python3-core, netcdf, openssl			
cairo	(1.172-7) Cairo is a 2D graphics library with support for multiple output devices (Runtime) Required by: poppler			
curl	(7.75.0-1) The CURL HTTP/FTP library and commandline utility (Runtime) Required by: saga, proj90-runtime, gdal304-runtime, pdal-libs, netcdf, proj82-runtime, curl-ca-bundle			
curl-ca-b	undle (7.75.0-3) The CURL HTTP/FTP library and commandline utility (certificates) Required by: curl, openssl			
exiv2	(0.27.3-2) Image metadata library (runtime) Required by: qgis-common			
expat	(22.10-4) The Expat XML Parser library (Runtime)		, ~	
Install the	ese packages to meet dependencies (RECOMMENDED)			
	< Back	Next >	Can	cel

Figure 9. Accept all the terms and conditions to start the installation.

2) SET UP PYTHON FOR QGIS

After installing QGIS on your computer, we can start with the configuration of Python. This is a critical step to enable QGIS to work with Python.

1. Go to C:\OSGeo4W and create a .txt file, to do this right-click to open the window > select New > Text Document and name the file pygis.txt

Name		Date modified	Туре
View Sort by Group by Refresh Customise this folder	> > 	6/5/2022 4:18 PM 6/5/2022 4:18 PM 6/5/2022 4:11 PM 6/5/2022 4:10 PM 6/5/2022 4:11 PM 6/5/2022 4:11 PM 6/5/2022 4:11 PM	File folder File folder File folder File folder File folder File folder File folder
Paste shortcut Give access to	>	2/18/2021 1:33 PM 10/9/2020 11:59 PM 6/10/2022 10:40 PM	Windows Batch Fi Icon Windows Comma
New Properties	>	Folder Shortcut	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Microsoft Access Database Bitmap image Microsoft Word Document Microsoft Access Database Microsoft PowerPoint Prese Microsoft Publisher Docum Rich Text Format	entation lient
	03	Microsoft Excel Worksheet	er.

Figure 10. Create a .txt file in "C:\OSGeo4W.

2. Open the new pygis.txt and copy and paste the following lines into the file. if you prefer you can also download the file <u>here</u> and go to step 3.

@echo off
Set OSGEO4W_ROOT=C:\OSGeo4W
call "%OSGEO4W_ROOT%"\bin\o4w_env.bat
@echo off
path %PATH%;%OSGEO4w_ROOT%\apps\qgis\bin
Path %PATH%;%OSGEO4W_ROOT%\apps\grass\grass78\bin
path %PATH%;C:\OSGeo4W\apps\Qt5\bin
path %PATH%;C:\OSGeo4W\apps\Python39\Scripts
set PYTHONPATH=%PYTHONPATH%;%OSGEO4W_ROOT%\apps\qgis\python
set PYTHONHOME=%0SGEO4w_ROOT%\apps\Python39
cmd.exe



Figure 11. Create a txt file in "C:\OSGeo4W" and paste the text as above.

Once you have copied the lines into the pygis file, proceed by saving it as a "cmd" file by doing the following:

Go to File > Save As, and there modify the name by adding the extension ".cmd" to the name and proceed to save the file.



Figure 12. Saving the txt file as a "pygis.cmd" file.

Manage OSGeo4W App Tools OSGeo4W Windows (C:) > OSGeo4W						
📕 apps	6/5/2022 4:18 PM	File folder				
🧵 bin	6/5/2022 4:18 PM	File folder				
🧵 doc	6/5/2022 4:11 PM	File folder				
etc	6/5/2022 4:10 PM	File folder				
📕 lib	6/5/2022 4:11 PM	File folder				
share	6/5/2022 4:11 PM	File folder				
📜 var	6/5/2022 4:18 PM	File folder				
SGeo4W	2/18/2021 1:33 PM	Windows Batch File	1 KB			
𝔅 OSGeo4W	10/9/2020 11:59 PM	lcon	6 KB			
💿 pycharm	6/10/2022 10:40 PM	Windows Command Script	1 KB			
🖭 pygis	6/9/2022 4:25 PM	Windows Command Script	1 KB			
pygis	6/23/2022 11:36 AM	Text Document	0 KB			

Figure 13. The file stored in the OSGeo4W folder location.

3. Now is the time to open the pyqgis.cmd file and test the connexion. To execute the file do double click in pyqgis.cmd to deploy the command prompt window.

1. Once the cmd is open you will see this window				
C:\OSGeo4W>				
C:\windows\system32\cmd.exe				
Microsoft Windows [Version 10.0.19044.1766] (c) Microsoft Corporation. All rights reserved.				
C:\0SGeo4W>				
2. Type python and press ENTER.				
C:\O\$Geo4W> python				
C:\OSGeo4W>python Python 3.9.5 (tags/v3.9.5:0a7dcbd, May 3 2021, 17:27:52) [MSC v.1928 64 bit (AMD64)] on win32 Type "help", "copyright", "credits" or "license" for more information. >>>				
3. Now type import qgis.core and press ENTER.				
>>> import qgis.core				
C:\OSGeo4W>python Python 3.9.5 (tags/v3.9.5:0a7dcbd, May 3 2021, 17:27:52) [MSC v.1928 64 bit (AMD64)] on win32 Type "help", "copyright", "credits" or "license" for more information. >>> import qgis.core >>>				
4. Type exit python typing exit() and press ENTER				
>>> exit()				
C:\windows\system32\cmd.exe				
Microsoft Windows [Version 10.0.19044.1766] (c) Microsoft Corporation. All rights reserved.				
C:\OSGeo4W>python Python 3.9.5 (tags/v3.9.5:0a7dcbd, May 3 2021, 17:27:52) [MSC v.1928 64 bit (AMD64)] on win32 Type "help", "copyright", "credits" or "license" for more information. >>> import qgis.core >>> exit()				
C:\0SGeo4W>				

If you do not see any errors when calling python or QGIS, it means that the setup was successful.

4. The next step is to install the followed python library:

5. pip install openpyxl
C:\OSGeo4W> pip install openpyxl
C:\windows\system32\cmd.exe
Microsoft Windows [Version 10.0.19044.1766] (c) Microsoft Corporation. All rights reserved.
C:\OSGeo4W>pip install openpyxl

5. Troubleshooting

This section includes some possible errors and solutions the user may encounter when installing Qgis in OSGeo4W. If the problem you are facing is not documented, please contact RA.

Problem	Solution
Problem with OSGeo4w installer file	Download the installer file using this
	link and repeat the installation
There are no available download sites	instructions.
OSGeo4W Setup - Choose Download Site(s) − □ ×	
Choose A Download Site	
Choose a site from this list, or add your own sites to the list	
Available Download Sites:	
Add	