



Soil Survey Geographic Database (SSURGO) Portal Installation Instructions – USDA CEC Computers

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1. Overview

The following sections detail the instructions for downloading and installing Python, SSURGO Portal, and DB Browser.

1.1. Required Software

- Python 3.10.2
- SSURGO Portal

Note: *The developers recommend the latest version of the SSURGO Portal.*

1.2. Optional Software

- DB Browser 3.12.2

1.3. Assumptions

This guide assumes the following:

- You are installing software on a USDA CEC computer.
- Your operating system is Windows 10 or greater.¹
- You use Microsoft Edge for your web browser.²
- You have not already installed Python on your computer.³
- You have not already installed DB Browser on your computer.
- You use WinZip for handling .zip files.

¹ While SSURGO Portal was designed to work with Windows 10, it should work with Windows 11 and Ubuntu.

² SSURGO Portal can run in other browsers besides Microsoft Edge and will launch in whatever default browser is set.

³ Python is included with ArcGIS, ArcGIS Pro, ArcGIS Desktop, and QGIS. If a user has this version of Python, it will not affect the Python 3.10.2 installation.

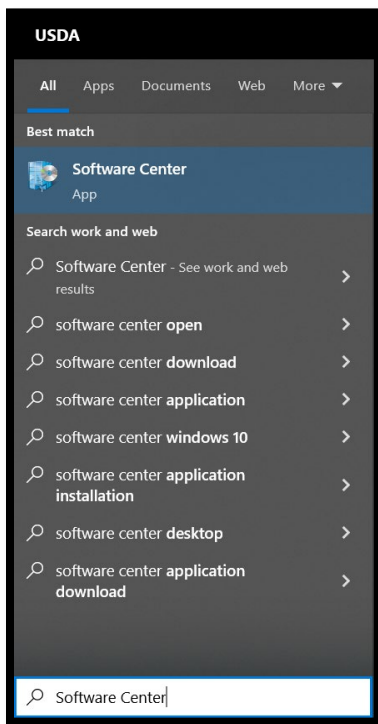
2. Python Installation

SSURGO Portal requires Python. All development and testing of SSURGO Portal were done on Python 3.10.2; therefore, the developers recommend using Python 3.10.2. SSURGO Portal should also work with Python 3.9 and 3.11 version, but these were not thoroughly tested. The portal will not work with versions of Python that are older than 3.9 or newer than 3.11.

Once installed, Python runs in the background; further interaction with Python is not necessary.

To install Python, complete the following steps:

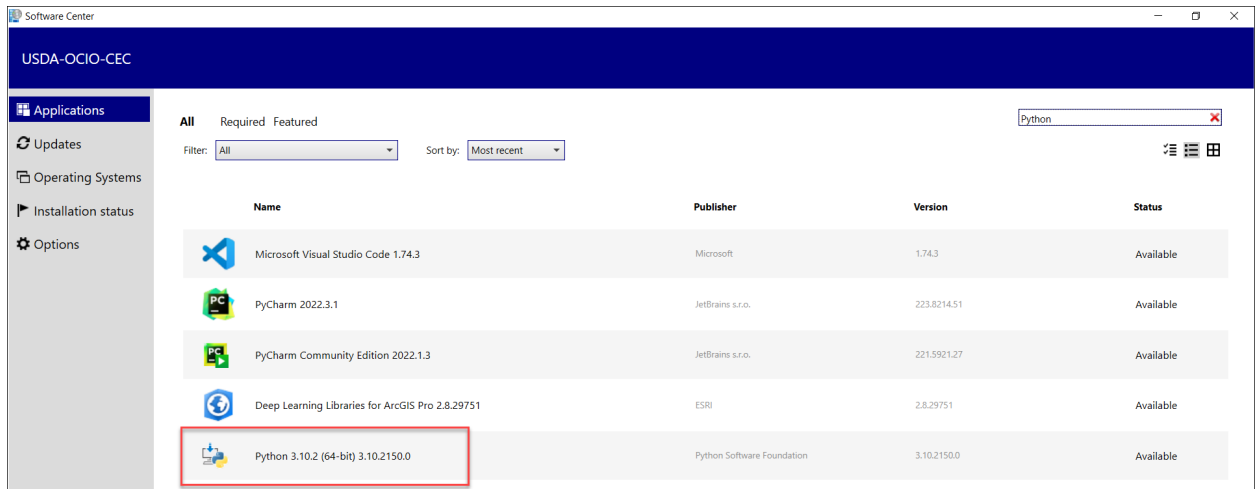
1. In the Windows search bar, type **Software Center**.
2. Click on the **Software Center App**.



3. The **Software Center** window opens. In the **Search** field, type **Python** and click the **magnifying glass** or press the **Enter** key.

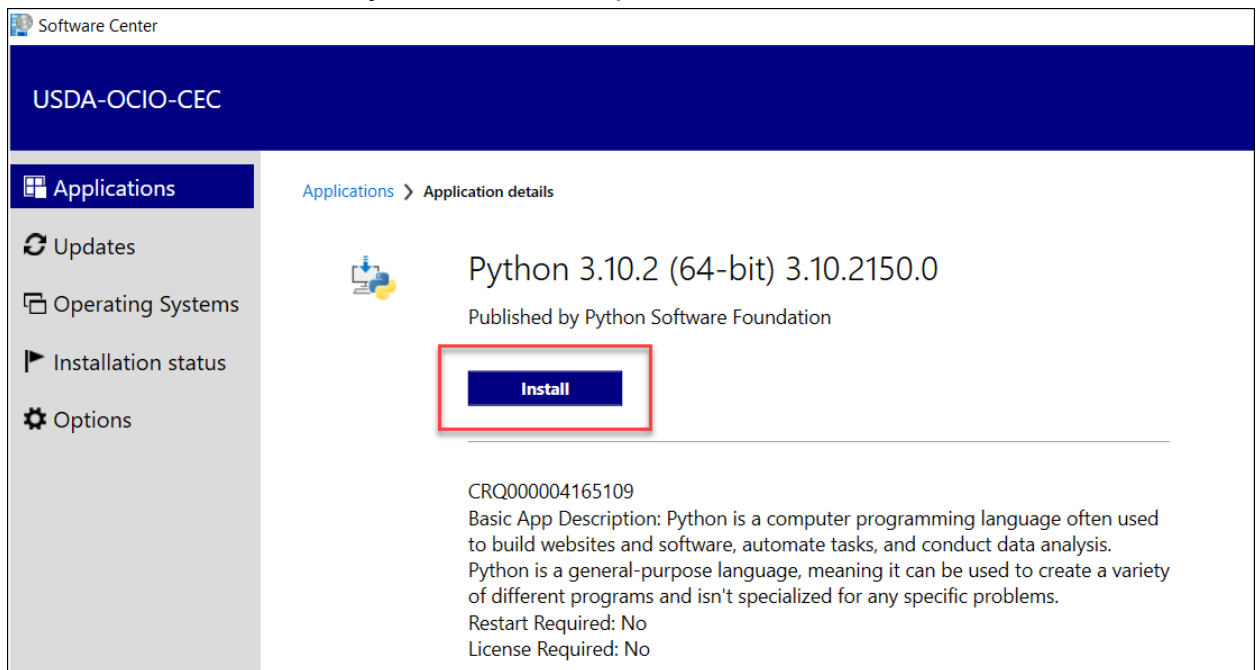


4. Select **Python 3.10.2 (64-bit) 3.10.2150.0** from the search results.



Note: Other versions of Python may appear in the Software Center, but you should install Python 3.10.2.

5. Click **Install** to start the Python installation process.



6. Once the installation is complete, the **Install** button should change to **Uninstall**, which indicates that the installation was successful. You can now close the window.

3. SSURGO Portal Installation

3.1. Download and Initialization Instructions

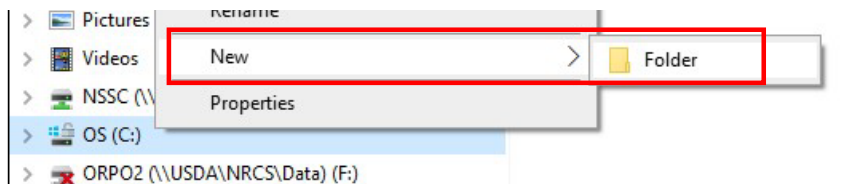
SSURGO Portal comes in a zip file, which you will download to a local folder and unzip. While not required, the developers recommend creating a folder on the **C:** drive entitled **SSURGO Portal**. If using a different folder, avoid placing the SSURGO Portal on a remote server or in the Cloud.

Note: *This guide references the C:\SSURGO Portal folder.*

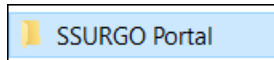
SSURGO Portal is a Python application executable file and has a .pyz extension. The .pyz file comes in a zip file, which you must unzip (i.e. extracted). Once unzipped, a file with the .pyz extension should appear. Opening this .pyz file runs SSURGO Portal, which will open in your default browser.

To install SSURGO Portal, complete the following steps:

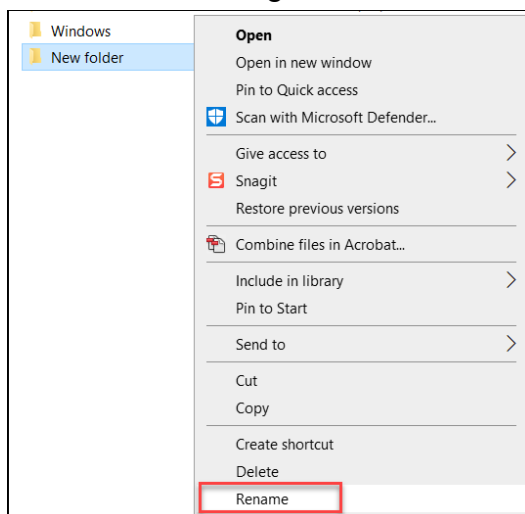
1. Open **Window File Explorer**, right-click on the **C:** drive, select **New**, and then select **Folder**.



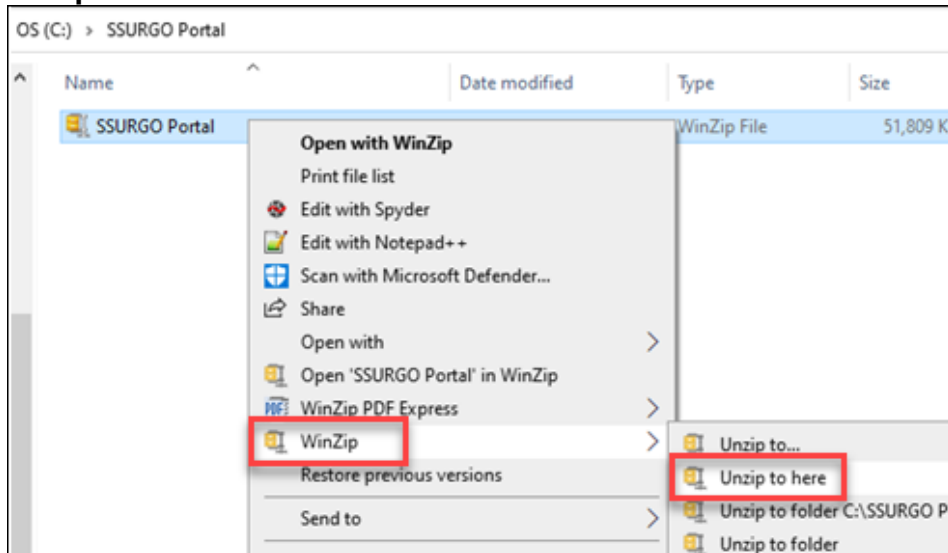
2. Name the folder **SSURGO Portal**.



3. You can also rename the folder by right-clicking on the on the newly created folder and selecting **Rename**.



4. [Click this link](#) to download the SSURGO Portal.zip file. Download the link to **C:\SSURGO Portal**.
5. In **Windows Explorer**, go to the **SSURGO Portal.zip** file, right-click, and select **Unzip to here**.

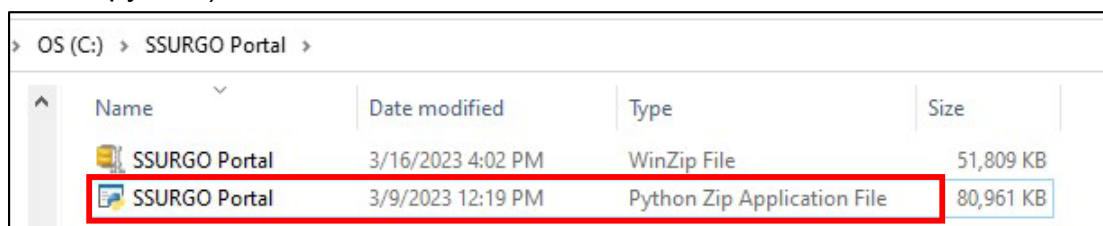


Note: This step and screenshot are using WinZip 27.0. If using a different version of WinZip or other software, the interface may appear different. If you don't have WinZip installed, you may need to use "Extract All."

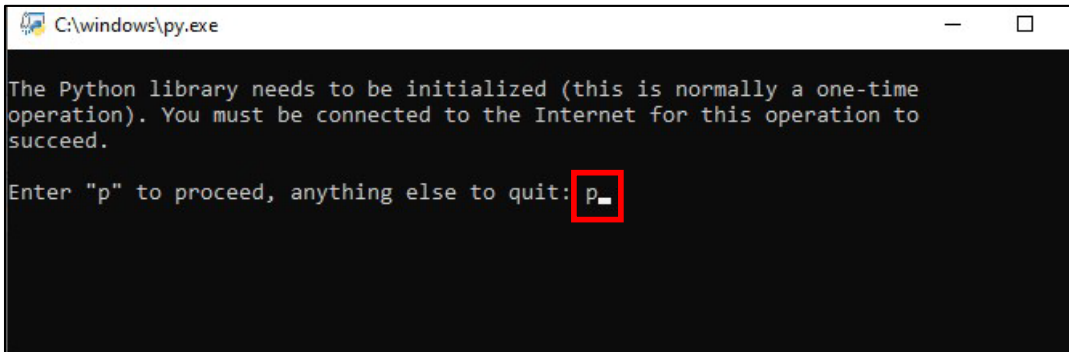
The action adds a Python Zip Application File called **SSURGO Portal** to the **C:\SSURGO Portal** folder, as depicted in the figure below. Under **Type**, it may read **PYZ**. This is the file used to run SSURGO Portal.

You can delete the WinZip as it is no longer needed.

6. Double-click on the **SSURGO Portal Python Zip Application File** (SSURGO Portal .pyz file).



- A **CMD** window opens with a set of instructions. Type **p** and then press the **Enter** key.

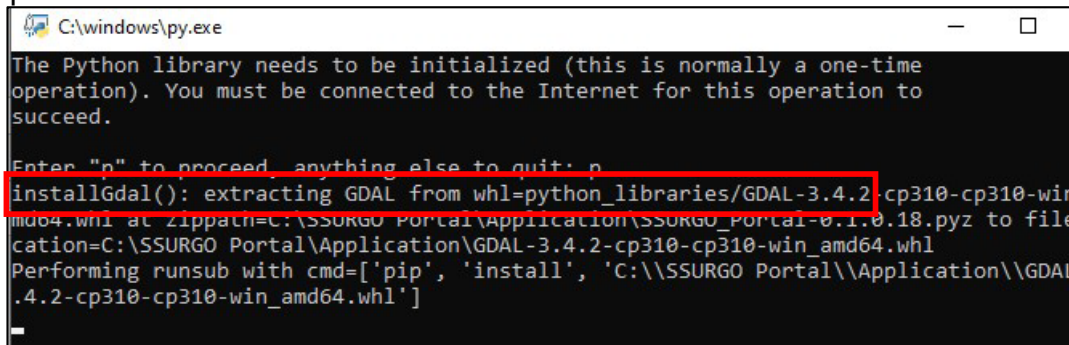


```
C:\windows\py.exe

The Python library needs to be initialized (this is normally a one-time
operation). You must be connected to the Internet for this operation to
succeed.

Enter "p" to proceed, anything else to quit: p_
```

A message about the Geospatial Data Abstraction Library (GDAL) installation appears.

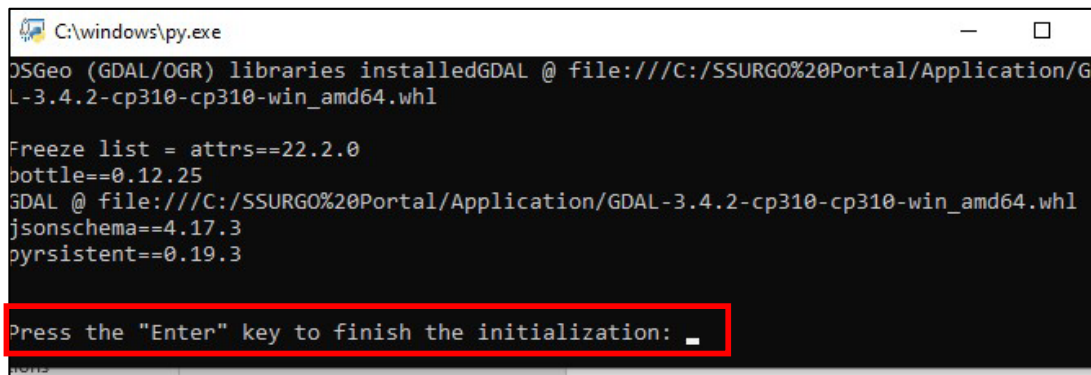


```
C:\windows\py.exe

The Python library needs to be initialized (this is normally a one-time
operation). You must be connected to the Internet for this operation to
succeed.

Enter "p" to proceed, anything else to quit: p
installGdal(): extracting GDAL from whl=python_libraries/GDAL-3.4.2-cp310-cp310-win_
amd64.whl at zippath=C:\SSURGO Portal\Application\SSURGO_Portal-0.1.0.18.pyz to file
cation=C:\SSURGO Portal\Application\GDAL-3.4.2-cp310-cp310-win_amd64.whl
Performing runsub with cmd=['pip', 'install', 'C:\\SSURGO Portal\\Application\\GDAL
.4.2-cp310-cp310-win_amd64.whl']
```

- When the window displays **Press the “Enter” key to finish the initialization**, press the **Enter** key.



```
C:\windows\py.exe

OSGeo (GDAL/OGR) libraries installedGDAL @ file:///C:/SSURGO%20Portal/Application/G
L-3.4.2-cp310-cp310-win_amd64.whl

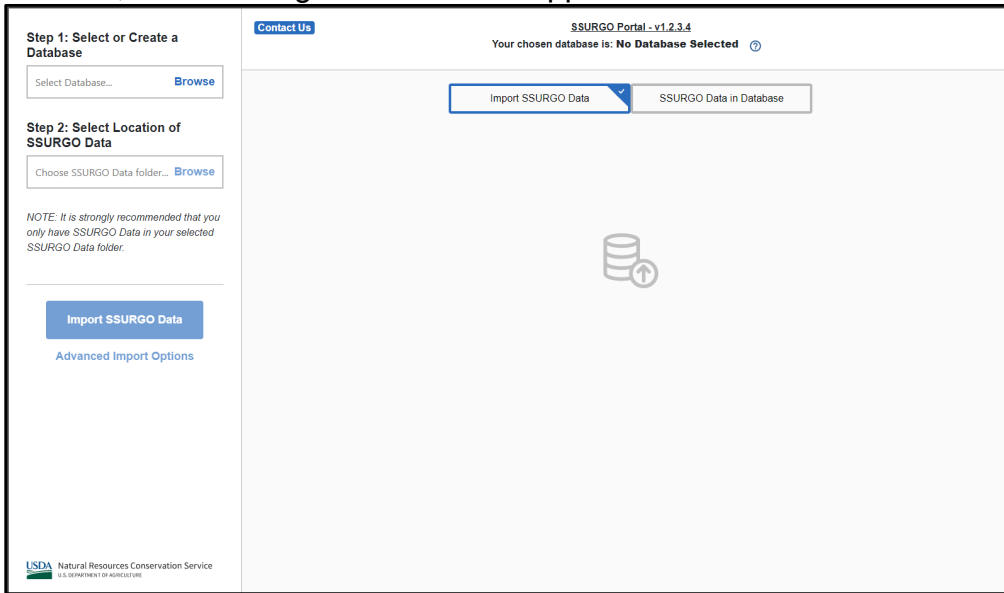
Freeze list = attrs==22.2.0
pottle==0.12.25
GDAL @ file:///C:/SSURGO%20Portal/Application/GDAL-3.4.2-cp310-cp310-win_amd64.whl
jsonschema==4.17.3
pysistent==0.19.3

Press the "Enter" key to finish the initialization: _
```

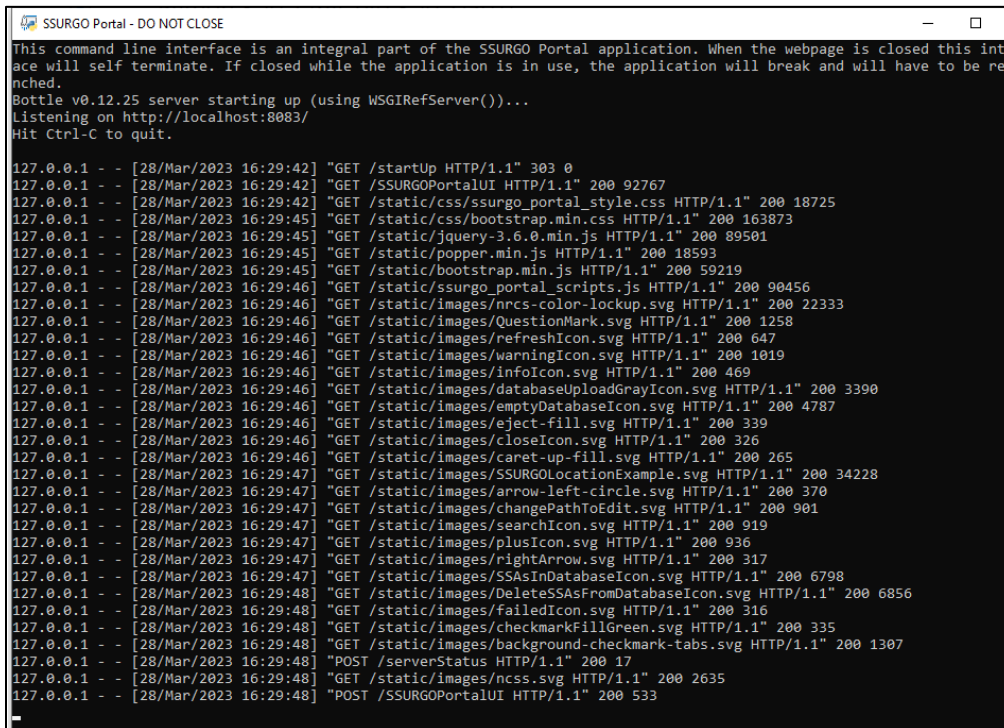
Note: You only need to enter **p** in the **CMD** prompt once during the installation process.



- Confirm that the installation was successful by double-clicking on the **SSURGO Portal Python Zip Application File**. **SSURGO Portal** should open in the default browser; the following screen should appear.



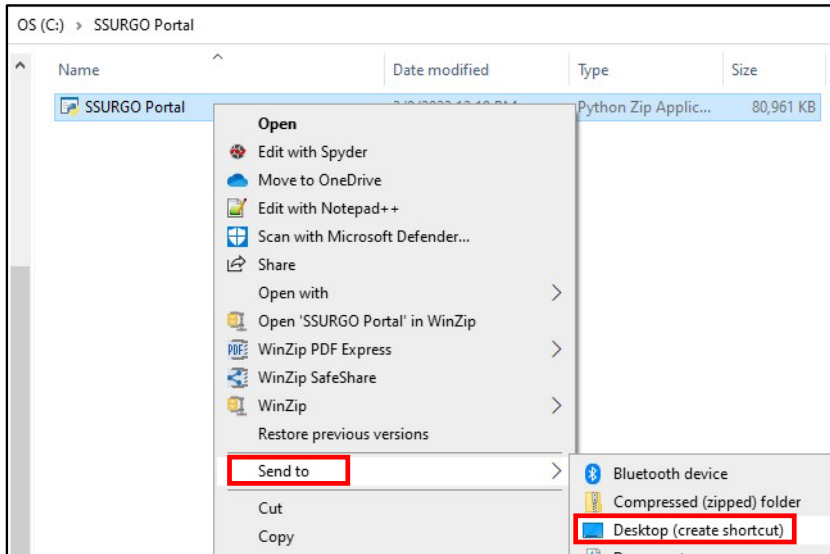
- The CMD prompt opens again and displays the following screen. You do not need to enter anything. You can minimize the screen, but **do not close** the CMD prompt. If you close the CMD prompt, SSURGO Portal will stop working.



3.2. Create a Desktop Shortcut

To create an optional, but recommended, shortcut and run SSURGO Portal from this location, complete the following steps:

1. In Windows Explorer, navigate to the **SSURGO Portal.pyz** file, right-click, select **Send to**, and select **Desktop (create shortcut)**.



2. The following icon is added to your desktop. Double-click the icon to open SSURGO Portal.



4. DB Browser Installation

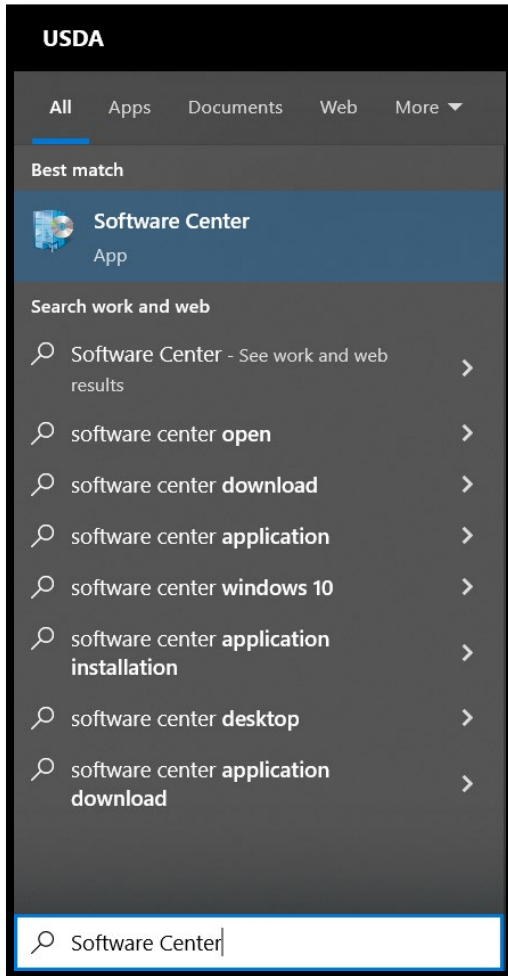
4.1. Download Instructions

While optional, DB browser is the recommended tool for viewing the contents of the SQLite SSURGO template database and for using SQL to query the database. Its use is similar to how Microsoft Access allows you to view and query Access Database files (.mdb and .accdb). You can view the database through ArcGIS Desktop, ArcGIS Pro, QGIS, and any other applications that work with SQLite and GeoPackage databases.

At the time this guide was written, DB Browser 3.12.2 was the most current version. Presumably newer versions will replace 3.12.2 in the Software Center, and the developers anticipate that they will open SQLite SSURGO template databases.

To install the DB Browser, complete the following steps:

1. In the Windows search bar, enter **Software Center**.
2. Click on the **Software Center App**.



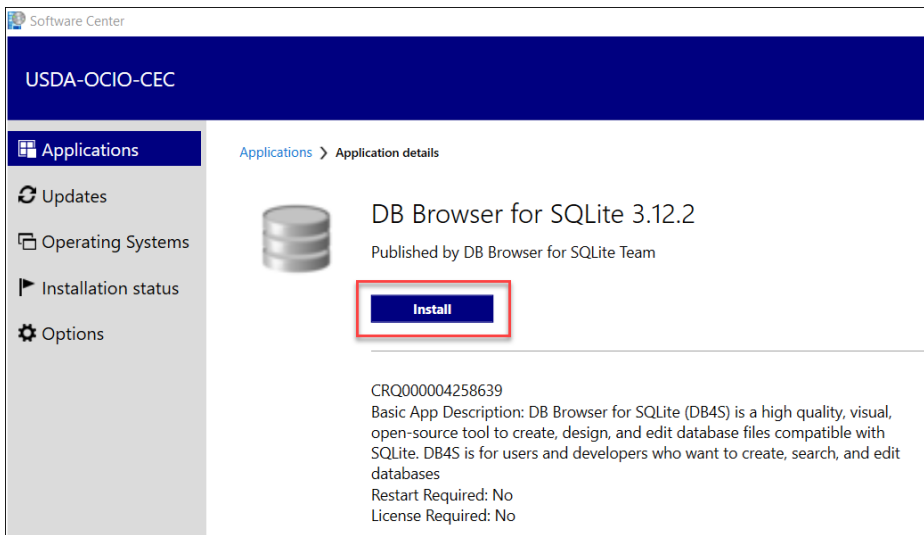
3. The **Software Center** window opens. In the **Search** field, type **DB Browser** and click the **magnifying glass** or press the **Enter** key.



- Select **DB Browser for SQLite 3.12.2** from the search results.



- Click **Install** to start the Python installation process.



- Once the installation is complete, the **Install** button should change to **Uninstall**, which indicates that the installation was successful. You can now close the window.

Below is an example of an **SQLite SSURGO template** database viewed with DB Browser 3.12.2.

The screenshot shows the 'DB Browser for SQLite' application window displaying a table of data. The table has 14 columns: comppct_l, comppct_r, comppct_h, compname, compkind, majcompflag, otherph, localphase, slope_l, slope_r, slope_h, and slope. The data is as follows:

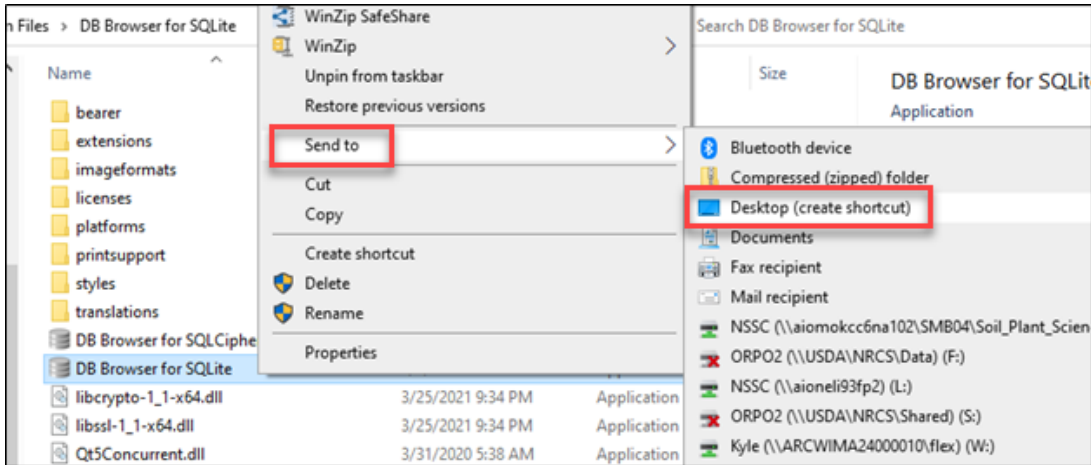
	comppct_l	comppct_r	comppct_h	compname	compkind	majcompflag	otherph	localphase	slope_l	slope_r	slope_h	slope
1	NULL	3	NULL	Sandall	Series	Yes	NULL	NULL	35.0	45.0	55.0	
2	NULL	55	NULL	Ireland	Series	Yes	NULL	NULL	35.0	45.0	55.0	
3	NULL	16	NULL	Hymas	Series	Yes	NULL	NULL	35.0	45.0	55.0	
4	NULL	6	NULL	Ririe	Series	Yes	NIRR	NULL	5.0	15.0	25.0	
5	NULL	5	NULL	Richmond	Series	Yes	NULL	NULL	30.0	40.0	50.0	
6	NULL	9	NULL	Bancroft	Series	Yes	NIRR	NULL	3.0	8.0	12.0	
7	NULL	3	NULL	Heglar	Series	Yes	NIRR	NULL	10.0	20.0	30.0	
8	NULL	3	NULL	Rexburg	Series	Yes	NIRR, WARM	NULL	3.0	8.0	12.0	
9	NULL	11	NULL	Ricrest	Series	Yes	NULL	NULL	20.0	40.0	60.0	
10	NULL	12	NULL	Ridgecrest	Series	Yes	NULL	NULL	20.0	40.0	60.0	
11	NULL	32	NULL	Sheege	Series	Yes	NULL	NULL	20.0	40.0	60.0	

4.2. Create a Desktop Shortcut

To create an optional, but recommended, shortcut and run DB Browser from this location, complete the following steps.

You will need to know where DB Browser was installed. It should be in C:\Program Files\DB Browser for SQLite.

1. In Windows Explorer, navigate to the **DB Browser for SQLite** file, right-click, select **Send to**, and select **Desktop (create shortcut)**.



2. The following icon is added to your desktop. Double-click the icon to open the DB Browser.



4.3. Set Up SQLite Databases to Open in DB Browser by Default

Microsoft Windows can be set to always use DB Browser to open SpatialLite and GeoPackage databases. While this is optional, the developers recommend it because it makes it possible to click on the SQLite SSURGO Template database in Windows File Explorer and have it open in DB Browser.

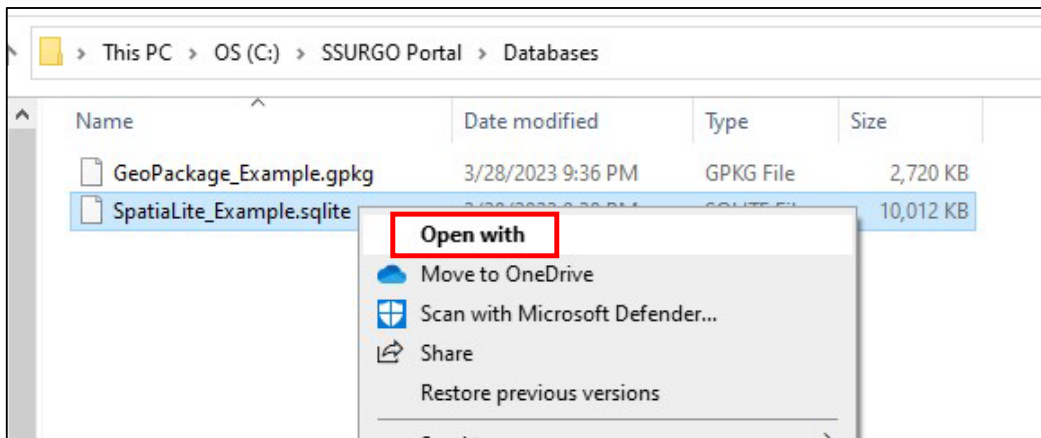
Perform this step after creating an SQLite SSURGO Template database using SSURGO Portal. In SSURGO Portal, there is an option to create either a GeoPackage or a SpatialLite SQLite database.

For each template version, complete the following steps:

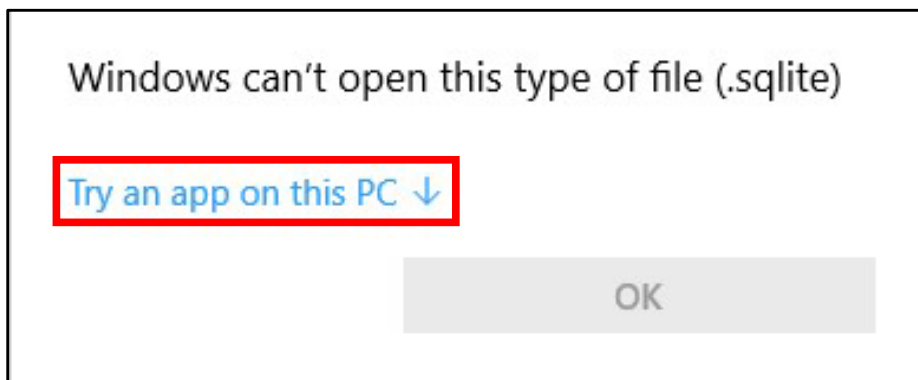
1. Using Windows File Explorer, go to the location of the SQLite SSURGO Template databases.

Note: *GeoPackage SQLite files have a .gpkg extension and the SpatialLite SQLite files have an .sqlite extension.*

2. Right-click on an **SQLite SSURGO Template** database and select **Open with**.



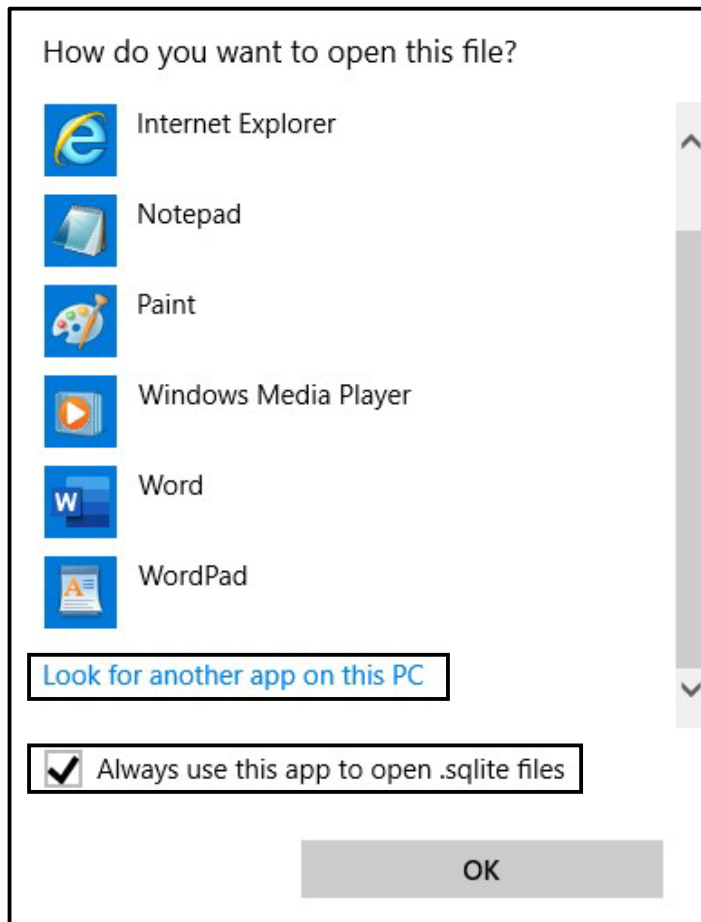
3. Click **Try an app on this PC** ↓.



4. Click the **Always use this app to open .sqlite files** checkbox, and then scroll down and click **Look for another app on this PC**.

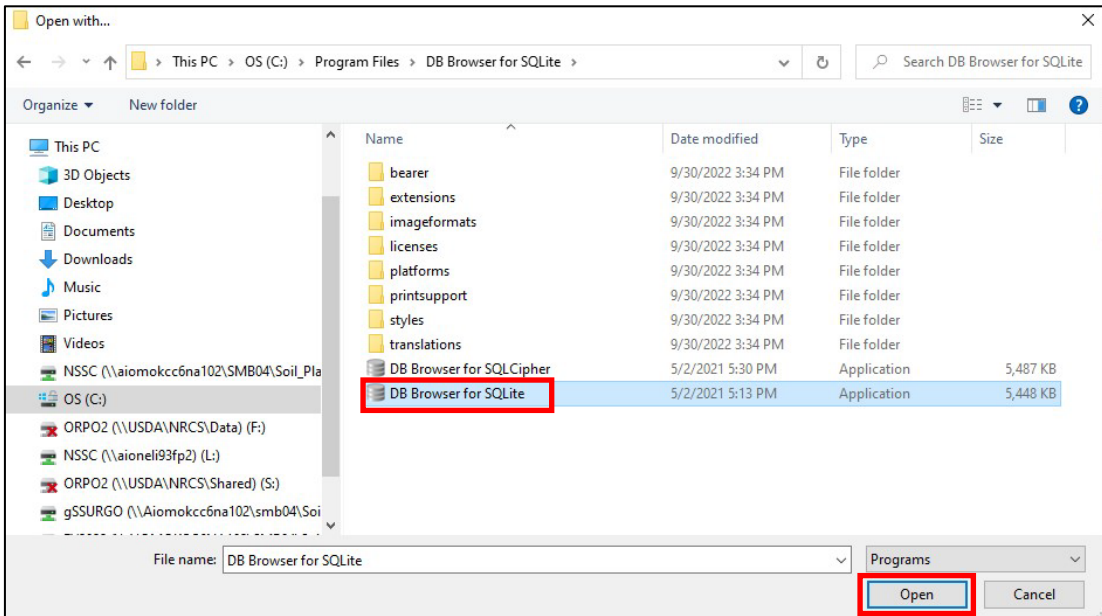
Note: *It may be necessary to scroll to the end of the list of apps to see the **Look for another app on this PC** option.*

*The message states either **.gpkg** or **.sqlite**, depending on the database chosen in Step 2.*





Go to where DB Browser was installed, click **DB Browser for SQLite**, and then click **Open**.



This action opens the DB Browser and the selected SQLite SSURGO Database in DB Browser. You should see the DB Browser database icon for all SQLITE and GPKG files in Windows Explorer.

