**Installing the package of Python+GDAL+Matplotlib**

**Windows OS**

Reference: <https://sandbox.idre.ucla.edu/sandbox/tutorials/installing-gdal-for-windows>

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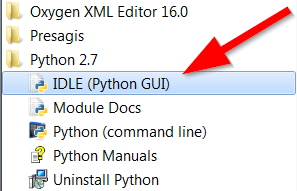
**Step 1: Install Python**

Python is a programming language that is necessary for GDAL. Download the latest **3.x version** of python. Note the scripts of lab tutorials were written in **Python 3**. If you are using **Python 2**, the scripts (e.g.., the print function) are not compatible.

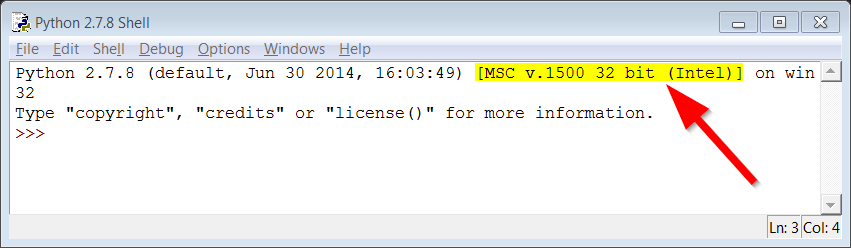
Python can be downloaded here: <https://www.python.org/downloads/>

Install python with the default options and directories.

After installation, go to Python –> IDLE (Python GUI) to find out what version of Python you are using:



Make a note of the number that shows the version of your Python in the top right, as highlighted below:



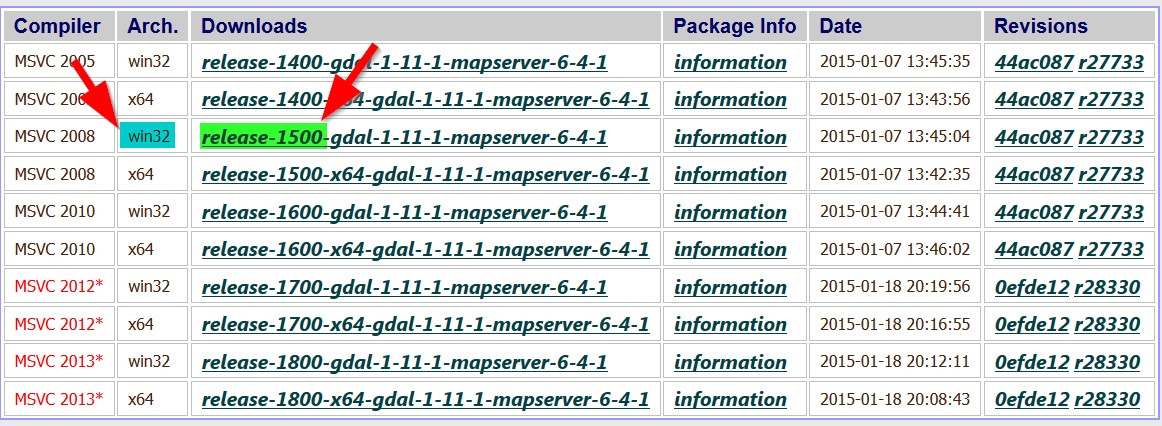
Note: MSC v.1500 might be different from what you have if you are using a different Python version. Please make a note of that number. If you installed the 64-bit version of Python, please remove the (x86) from the paths for the rest of the tutorial (but keep everything else the same).

# **Step 2: Install GDAL**

# **You should download “GDAL 3.1.2”, though this tutorial was written in Python version 2.7.**

Head over to [Tamas Szekeres’ Windows binaries](http://www.gisinternals.com/release.php) and download the appropriate GDAL Binary.

For this tutorial, we are using the MSC v.1500 on a 32-bit system, the picture below illustrates how to match the version with your own python version. The blue highlight is where you should look for either 64-bit or 32-bit systems, and the green shows the release-1500 number which should match the number from IDLE in step 4 above.



1. Clicking the link will take you to the list of binaries (installers) to download.



1. Locate the “core” installer, which has most of the components for GDAL.



1. After downloading your version, install GDAL with standard settings.
2. Next, return to the list of GDAL binaries and install the python bindings for your version of Python. (**for you, it should be python 3.x**)
3. Recall that we had installed Python 2.7 earlier, so we have to locate this version, as seen below:

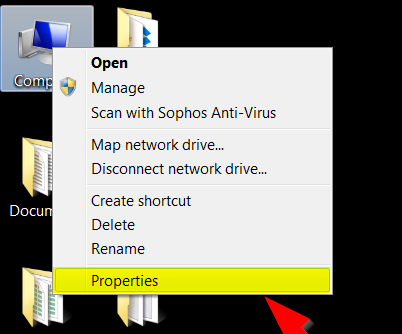


1. Download the Python bindings and install them.

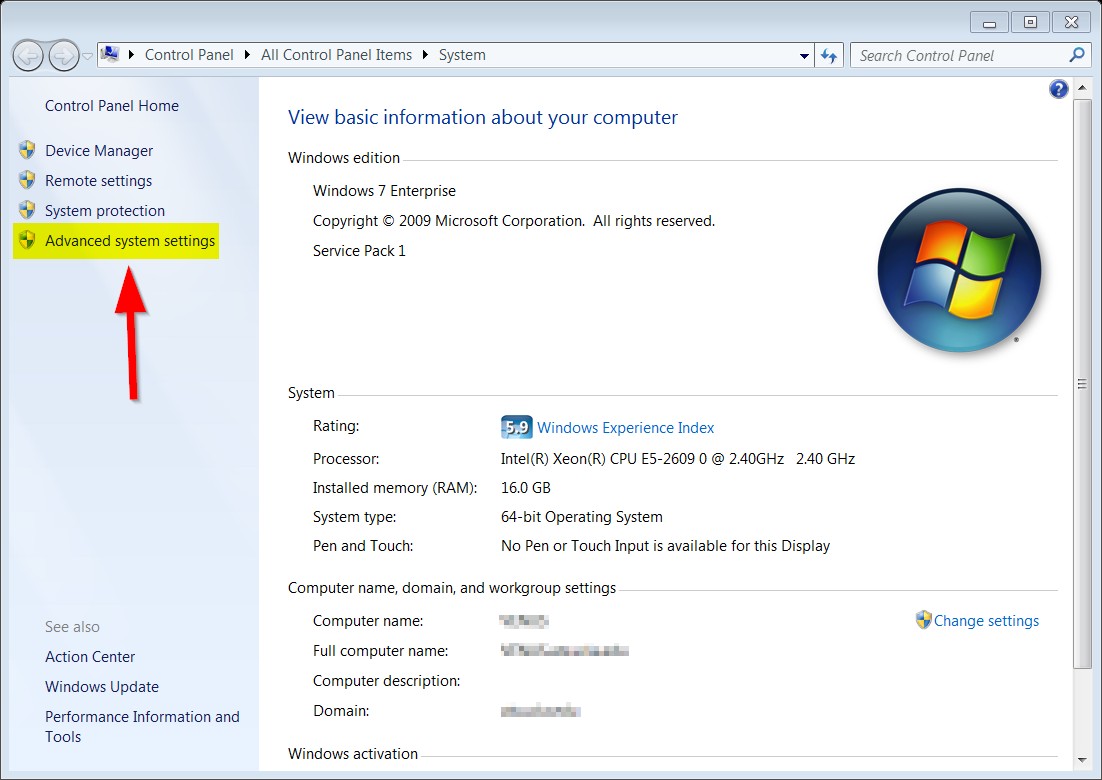
**Step 3: Adding Path Variables:**

We need to tell Windows system where the GDAL installations are located, so we need to add some system variables.

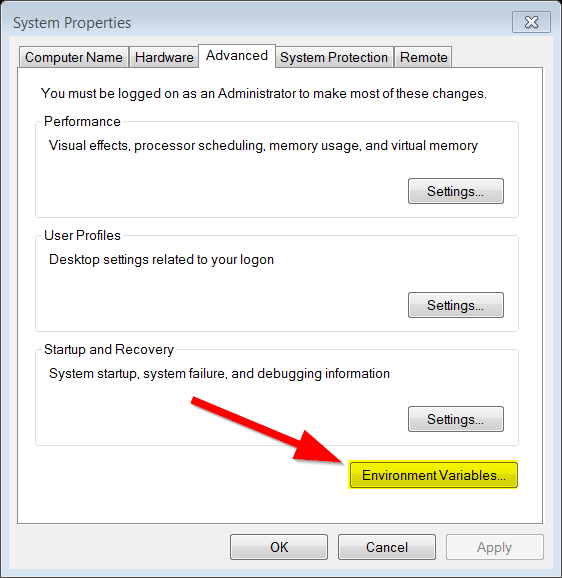
1. Right click on “Computer” on the desktop and go to “Properties”:



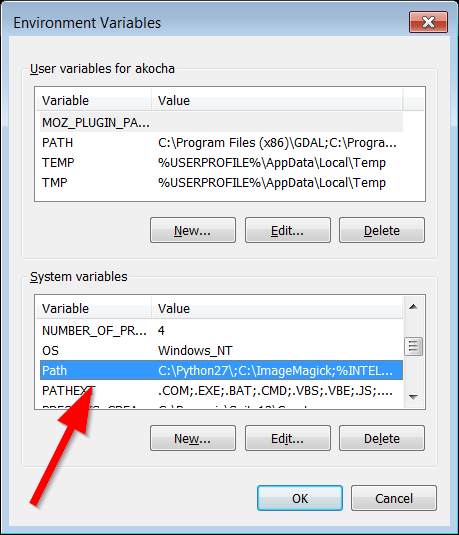
1. Click on Advanced System Properties



1. Select Environment Variables.



1. Under the System variables pane, find the ‘Path’ variable, then click on Edit.



1. Go to the end of the box and copy and paste the following:

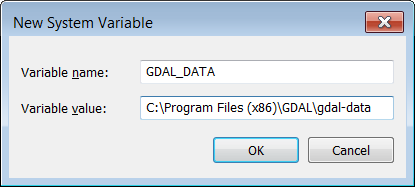
;C:\Program Files (x86)\GDAL

*Note: For 64-bit GDAL installations you would simply remove the (x86) after Program Files.*

1. In the same System variables pane, click on “New” and then add the following in the dialogue box:

Variable name: GDAL\_DATA

Variable value: C:\Program Files (x86)\GDAL\gdal-data



1. Click “OK”
2. Add one more new variable by clicking “New…”
3. Add the following in the dialogue box:

Variable name: GDAL\_DRIVER\_PATH

Variable value: C:\Program Files (x86)\GDAL\gdalplugins

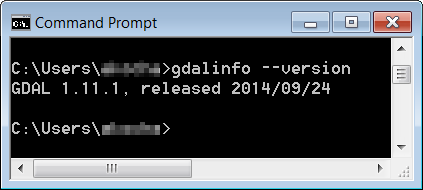
1. Click “OK”

# **Step 4: Testing the GDAL install**

1. Open the Windows command line, by going to the Start Menu -> Run ->Type in cmd and press Enter.
2. Type in

gdalinfo --version

1. Press Enter.
2. If you get the following result, then congratulations your GDAL installation worked smoothly!



# **Step 5: Install matplotlib**

# Install pip: https://pip.pypa.io/en/stable/installing/

# Install Matplotlib: https://matplotlib.org/users/installing.html

**Installing the package of Python+GDAL+Matplotlib MAC OS**

1. **Install Python**

Download and install Python 3.x here: <https://www.python.org/downloads/>

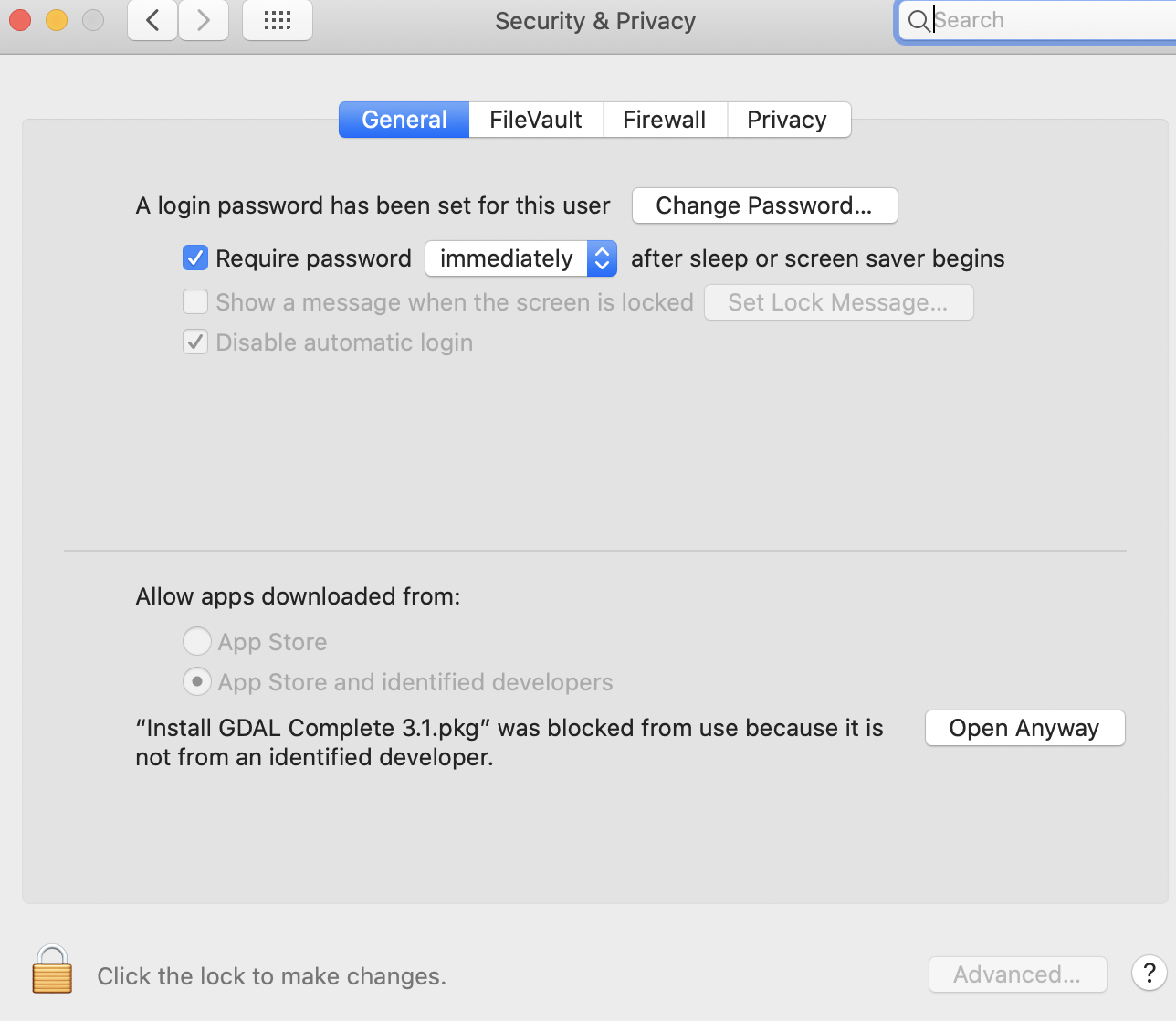
1. **Install GDAL**

Install the GDAL: **GDAL\_Complete-3.1.dmg**

(It is compressed in GE529\_install\_gdal\_python\_Mac.zip)

Or you can download it here: <http://www.kyngchaos.com/software/frameworks/#gdal_complete>

May require your permission to install it, choose “Open Anyway”



1. **Setup GDAL environment**

After installation, open your Terminal, type

echo 'export PATH=/Library/Frameworks/GDAL.framework/Programs:$PATH' >> ~/.bash\_profile

source ~/.bash\_profile

You can check if you are correctly installed it:

gdalinfo --version

1. **Install Matplotlib**

First, you need to install pip. See: <https://pip.pypa.io/en/stable/installing/>

Note that the script “get-pip.py” has been already download for you. But feel free to download the script “get-pip.py” from the link above.

In the terminal, cd to the directory where your script “get-pip.py” locates.

To install pip, in the terminal, type:

python get-pip.py

Install matplotlib via pip. See: <http://matplotlib.org/faq/installing_faq.html>

python -m pip install -U pip

python -m pip install -U matplotlib