

Contents

Using Spyder with ArcGIS Pro 2.8: Home Use (Your Own Computer)	.1
Download and Install ArcGIS Pro	.1
Clone the default environment in ArcGIS Pro	.1
Install Spyder in the cloned ArcGIS Pro Environment	.2
Set Spyder as the default script editor in ArcGIS Pro	.7
More Spyder resources	.9

Using Spyder with ArcGIS Pro 2.8: Home Use (Your Own Computer)

Spyder is the "Scientific Python Development Environment." It is an integrated development environment (IDE) for programming written in Python, for Python, and designed by and for scientists, engineers, and data analysts: <u>https://www.spyder-ide.org/</u>

If you're reading this guide from SF State's Institute for Geographic Information Science, you're likely using Spyder with ArcGIS Pro. If that's the case, keep in mind that In the ArcGIS world, because we're in this transition phase between ArcMap, which uses Python 2.7, and ArcGIS Pro, Python 3.x, ESRI's solution was to use virtual environments in order to not break most of our C:\python27 installs. There is an open source package management system that helps manage virtual environments called "conda". Conda is <u>automatically installed</u> when you install ArcGIS Pro. Not to be confused with "Anaconda", which is a standalone scientific package management system based on conda. So in short, we recommend that you first download/install ArcGIS Pro, which will come with the "conda" package from which you can install Spyder.

Download and Install ArcGIS Pro

- 1. For instructions how to download and install ArcGIS Pro, visit: <u>https://gis.sfsu.edu/arcgis-pro-installation-instructions</u>
 - Note that if you have a previous version of ArcGIS Pro already installed on your computer, you may need to follow ESRI guides that will help you clear out ArcGIS Pro from a system that cannot fully uninstall the software: https://esribelux.com/helpdeskitem/clean-uninstall-of-arcgis-pro/
 - b. If you have trouble with installation of ArcGIS Pro after working through the instructions provided online, you may call ESRI technical support for help as a part of our site license agreement (note that ESRI <u>only</u> offers students help with installation—if you have other questions, you'll need to consult one of the university's ESRI Approved callers)

Clone the default environment in ArcGIS Pro

On a good day, this should take around 30 minutes to do right

2. Once you have ArcGIS Pro installed, open ArcGIS Pro and choose Python→Manage Environments→Clone Default (this may take several minutes)



(c)	ArcGIS Pro - MyProject1 - Map	?	- 0	×
New Open	Python Package Manager			•
Save	Project Environment			
Save As	arcgispro-py3 [C\Program Files\ArcGI5\Pro\bin\Python\envs\arcgispro-py3]			
Portals	Manage Environments ×			
Licensing	Active Environments Clone Remove			
Options	Update Packag			
Python Add-In Manager	Add Packages Add Packages C.\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3 C.\Program Files\ArcGIS\Pro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\Python\envs\arcGispro\bin\envs\arcGispro\bin\envs\arcGispro\bin\envs\arcGispro\bin\envs\arcGispro\bin\envs\arcGispro\envs\arcGispro\envs\arcGispro\bin\envs\arcGispro\bin\envs\arcGispro\envs\arcGispro\bin\envs\arcGi			
Help		Uninstall		
About		nx theme		
Exit				
		d configurable sy to install/use as		- 1
		ter is selected as		
	crtime 1.0.001			v

3. Check the new cloned environment bubble and choose **OK**

- 4. Restart ArcGIS Pro so the changes to your environment are saved (confirm that arcgispropy3-clone is set in the ArcGISPro Project Environment when you reopen Pro)
- 5. Type **Python Command Prompt** into your Start Menu (you don't want Python Command <u>Line</u>, which will likely be the first option that pops up as you start typing into the Start Menu)
 - a. *Note that on a home computer you may need to right-click on Python Command Prompt and Run as Administrator*

Install Spyder in the cloned ArcGIS Pro Environment

.	Shortcut Tools Application Tools A	rcGIS Pro		- 0	\times
File Home Share View	Manage Manage				~ 🕐
← → · · ↑ 📜 C:\ProgramData\N	ficrosoft\Windows\Start Menu\Program	s\ArcGIS\ArcGIS Pro	~ Ū	Search ArcGIS Pro	P
	^ Name	^		Date modified	-
	😥 ArcGIS F	ro Online Help		1/10/2019 1:43 PM	
	🔊 ArcGIS F	ro		1/10/2019 1:43 PM	
	P* IPython			1/10/2019 1:43 PM	
	😴 Jupyter	Notebook		1/10/2019 1:43 PM	
	🗂 Python	Command Prompt		1/10/2019 1:43 PM	
	🗾 🎫 Python	nteractive Terminal		1/10/2019 1:43 PM	

6. The Python Command Prompt window will open and should show the cloned environment (arcgispro-py3-clone) at the beginning:



Python Command Prompt	_		×
(arcgispro-py3-clone) C:\Users\ AppData\Local\ESRI\conda\envs\arcgispro-py3-clone>			^
7. Type conda install spyder			
Python Command Prompt - conda install spyder	_		×
(arcgisnro-nv3-clone) (:\Users) (AnnData\Local\ESRT\conda\envs\arcgisnro-nv3-clone)conda instal	l spyd	0 2	^

- 8. Type **y** when asked if you want to proceed.
- 9. You'll see a series of packages being installed (this may take a few minutes)
- 10. There are several ways to launch the Spyder IDE, the two most obvious ones are:
 - a. In Python Command Prompt, type spyder (pictured below)
 - b. OR search for the spyder application in the Start Menu

Administrator: Python Command Prompt	_	×
		~
(arcgispro-py3) C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3>spyde	r	

- 11. You probably will see a message about a newer version of Spyder that's available, click OK:
- 12. If you see this message, it means you should update Spyder 3 to Spyder 5 using conda again by going back to the Python Command Prompt. Start by doing a dry run so you don't mess anything up. Type:

```
conda update spyder --no-pin --dry-run
```

🏧 Python Command Prompt - conda update spyder --no-pin --dry-run

arcgispro-py3-clone) C:\Users______\AppData\Local\ESRI\conda\envs\arcgispro-py3-clone>conda update spyder --no-pin --dry-run etching package metadata

13. You'll see something like the following that will show you which packages will be installed fresh, which packages will be updated (and what version they'll be updated to), and which packages will be downgraded—If you are a Python guru and know that you don't want some of these things to change, then don't make this update and do some research on your own to identify which packages you do want to update. The main thing we care about is updating Spyder 3 to Spyder 4 or 5.



i	👞 Python Command Prompt		
F	(arcgispro-py3-clone) C:\Us etching package metadata . Solving package specificati		
F	Package plan for installati	on in environment C:\Users\913692057\AppData\Local\ESRI\conda\envs\arcgispro-py3-clone:	
	The following NEW packages	vill be INSTALLED:	
	diff-match-patch: flake8: intervaltree: libspatialindex: paramiko: pathtools: pethtools: pydocstyle:	3.1.7-py36he774522_1 20200713-py_0 3.8.3-py_0 3.8.3-py_1 1.9.3-h33f27b4_0 2.7.1-py_0 0.1.2-py_1 4.8.0-py36_0 5.0.2-py_0 1.4.0-py36h62dcd97_0 0.3.4-py_1	
	pyyaml: qdarkstyle: rtree: sortedcontainers: ujson:	3.12-py36h1d1928f_1	
	The following packages will	be UPDATED:	
		0.16.0-py36_0 esri> 0.17.1-py36_0 5.3.1-py36_0 esri> 6.1.2-py36_0 esri 3.3.6-py36_0> 4.1.4-py36_0 0.5.2-py36_0> 1.9.2-py36_0	

14. Remove just the --dry-run and go ahead with the update when you're ready—make sure you keep the --no-pin because this will allow you to update even though the current download of Pro doesn't

(arcgispro-py3-clone) C:\Users\ \AppData\Local\ESRI\conda\envs\arcgispro-py3-clone>conda update spyderno-p	pin
--	-----

15. When prompted to Proceed, type ${f y}$



Solving package specifica	tions: .					
Package plan for installa	tion in environment C:\	Users	\AppData	Local\ESRI\conda\e	nvs\arcgispro-py3-c	lone:
The following NEW package	s will be INSTALLED:					
argh:	0.26.2-py36_0					
autopep8:	1.4.4-py_0					
bcrypt:	3.1.7-py36he774522_0					
diff-match-patch:	20181111-py_0					
flake8:	3.8.2-py_0					
intervaltree:	3.0.2-py 0					
libspatialindex:	1.9.3-h33f27b4_0					
paramiko:	2.7.1-py_0					
pathtools:	0.1.2-py_1					
pexpect:	4.8.0-py36_0					
pydocstyle:	4.0.1-py_0					
pynacl:	1.3.0-py36h62dcd97_0					
python-jsonrpc-server	: 0.3.4-py_0					
python-language-serve	r: 0.31.9-py36_0					
pyyaml:	3.12-py36h1d1928f_1					
qdarkstyle:	2.8.1-py_0					
rtree:	0.9.4-py36h21ff451_1					
sortedcontainers:	2.1.0-py36_0					
ujson:	1.35-py36hfa6e2cd_0					
watchdog:	0.10.2-py36_0					
yaml:	0.1.6-vc14_0	esri	[vc14]			
yapf:	0.28.0-py_0					
The following packages wi	ll be UPDATED:					
jupyter_client:	5.3.1-py36_0	esri	> 6.1.2-py36_0	esri		
spyder:	3.3.6-py36_0		> 4.1.3-py36_0			
spyder-kernels:	0.5.2-py36_0		> 1.9.1-py36_0			
The following packages wi	ll be DOWNGRADED:					
jedi:	0.16.0-py36_0	esri				
parso:	0.7.0-py_0		> 0.5.2-py_0			
Proceed ([y]/n)? y						

16. Launch the Spyder IDE





17. In the console of the Spyder IDE, type import arcpy after In [1] to verify that Spyder is working in your cloned environment. You should see In [2] appear.





- 18. Close and reopen ArcGIS Pro
- 19. Go to Settings→Python→Installed Packages should show that you have Spyder 4.1.4 installed now (and Spyder kernels 1.9.2)

Set Spyder as the default script editor in ArcGIS Pro

- 20. Once you have installed Spyder in the cloned ArcGIS Pro environment, you'll want to make Spyder the default script editor in Pro. Open Pro and go to the Project tab→Options→Geoprocessing
- 21. Enter the path to the **spyder.exe application** (if you don't remember where it was installed, check where the clone was installed in ArcGIS Pro→Settings→Manage Environments→



22. What you enter for your script editor should look something like the following screenshot except you won't have the 9-digit ID part for a home computer



Project	Set options for running geoprocessing tools and scripts
Current Settings	
Units	✓ Allow geoprocessing tools to overwrite existing datasets
Tasks	Remove layers that reference data overwritten by geoprocessing tools
Application	Add output datasets to an open map
General	Analyze script and model tools for ArcGIS Pro compatibility (1)
Map and Scene	Script Editor
Navigation	C:\Users\912345678\AppData\Local\ESRI\conda\envs\arcgispro-py3-clone\Scripts\spyder.exe
Selection	Landar
Editing	
Geoprocessing	Write geoprocessing operations to XML log file
Share and Download	Vrite geoprocessing operations to dataset metadata
Raster and Imagery	ModelBuilder Options
Display	Do not show warning when overwriting model from previous version
Layout	
Color Management	R-ArcGIS Support
CAD	Detected R home directories
Metadata	[R-4.0.2] C:\Program Files\R\R-4.0.2
Indexing	⚠️ Please install the ArcGIS R integration package 📴 💌
Location Referencing	

- 23. Choose **OK** and Restart ArcGIS Pro
- 24. Open a Script tool to verify that this launches Spyder so you know you're all good to go!



More Spyder resources

- Pristine arcgispro-py3
 <u>https://community.esri.com/docs/DOC-12021-python-at-arcgispro-22</u>
- Python Package Manager and Working with Python environments
 <u>https://pro.arcgis.com/en/pro-app/arcpy/get-started/what-is-conda.htm</u>
- More about virtual environments:
 https://realpython.com/python-virtual-environments-a-primer/
- Updating Spyder for ArcGIS Pro 2.5.2: more about –no-pin d—dry-run
 <u>https://community.esri.com/blogs/dan_patterson/2020/02/09/clone-arcgis-pro-25</u>
- Pinning Conda

http://damianavila.github.io/blog/posts/how-to-pin-conda.html