

# Resources

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# Setup to work with TapeMeasure

Setup to work with TapeMeasure

# Tape Measure Basic Step Up - SDK File & Virtualenv

This setup guide is for Windows 10/11 & Mac users only!

## System Requirements:

- Must have any python version above 3.6 (3.8 recommended).
  - No python? No problem! Download it [here](#).

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- You also must have a python code editor such as Virtual Studio Code (my choice but up to you).
  - Download VS Code [here](#). Make sure you install the one for your OS.
  - Please be sure to install the python extension.

\*Click on the extensions button

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\*Type “python” into the search bar and it should be the first option by Microsoft

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## Spot SDK File:

- Open Command Prompt and paste in the command:
  - `git clone https://github.com/boston-dynamics/spot-sdk.git`
- This should automatically install and unzip the Spot SDK
- If this doesn't work please install Git bash [here](#).
- If you're on Mac install homebrew by pasting:
  - `/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"`
  - If you don't want to install it there is a manual way to do it further down.

\*Should look like this:

A computer screen shot of a black screenDescription automatically generated

- After that we need to open the SDK as a workspace in Vs Code.
  - (Skip this and do your own thing if you're using a different software).
- To do this we need to locate the spot-sdk file. It will be located at where ever you indicated before the git clone command. In this example case it's located in drive C -> folder user -> Caicheng Li; giving you the address: C:\Users\Caicheng Li.
- If your on Mac open Finder -> Home -> spot-sdk
- Left click on the file and there should be an option to "Open with Code".
- If your on windows 11 you have to click on "show more options"
- If your on Mac open VS code and select open folder then refind the spot-sdk and open that file in vs code.

\*Should look something like this:

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After opening It should look something like this, with the contents of the folder on either the left or right-hand side of the window.

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- This is how you will access the spot-sdk (more on why it's important in a later doc)

If this for some reason does not work for you, you can manually install it by going [here](#).

\*Click on the green “Code” button

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\*Then click Download ZIP

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\*After it finishes downloading, right-click on the folder in your download and click on extract all

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\*Open the extracted folder and right-click it to “Open with Code.”

\*It should look something like this, with the contents of the folder on either the left- or right-hand side of the window.

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- This is how you will access the spot-sdk (more on why it's important in a later doc)

## Pip Installation:

- Open command prompt again.
- To check if you have pip installed use the command:
  - `py.exe -3 -m pip --version`

For Windows 11/Mac users:

- If you're on windows 11 use the command:
  - `python.exe -m pip --version`
- If you're on Mac use:
  - `python3 -m pip --version`
  - Pip comes preinstalled with python 3.4 and above so you should be good.
- It should always return a pip version number such as 19.2.1 (Version doesn't matter).
- If it pops up with nothing or an error contact one of the leads.

## Virtualenv

- This is the program you'll run commands in so it's important!
- Open up command prompt again and paste in:
  - `py.exe -3 -m pip install virtualenv`
- Then paste:
  - `py.exe -3 -m virtualenv my_spot_env`
- Then:
  - `.\my_spot_env\Scripts\activate.bat`

For Windows 11/Mac users:

- If your on windows 11 paste in:
  - `python.exe -m pip install virtualenv`
- Then:
  - `python.exe -m virtualenv my_spot_env`
- Then:
  - `.\my_spot_env\Scripts\activate.bat`

- If your on Mac paste in:
  - `python3 -m pip install virtualenv`
- Then:
  - `python3 -m virtualenv my_spot_env`
- Then:
  - `source my_spot_env/bin/activate`

\*Should look like something like this:

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- To go out of the virtual environment type in:
  - `deactivate`
- This should get rid of “(my\_spot\_env)”

## Spot Packages

- Make sure you're NOT in the virtual environment.
- Paste in the command:

- `python.exe -m pip install --upgrade bosdyn-client bosdyn-mission bosdyn-choreography-client`
- For Mac users:
  - `python3 -m pip install --upgrade bosdyn-client bosdyn-mission bosdyn-choreography-client`
- To verify you've installed correctly type in:
  - `python.exe -m pip list --format=columns | findstr bosdyn`
- For Mac users:
  - `python3 -m pip list --format=columns | grep bosdyn`

\*Should look something like this:

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- Next go into your python terminal by typing
  - `python.exe`
- Mac:
  - `python3`
- Then paste:
  - `import bosdyn.client`
- Then:
  - `help(bosdyn.client)`

\*Should look like this:

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After this you're all set up! If you run into any trouble while setting up contact @Cai or @Dwight Howard, II on Discord.

# VS Code setup for TapeMeasure

## Linux

### Ubuntu

1. First thing your going to want to do is **download the .deb** to the [VS Code download site](#). If you download the the .rpm file you will need to follow another guide.
2. Once the file has finished downloading you will want to **open up your files software and navigate to your downloads folder** or whenever you have set your browser to download.
3. Right click and then **Open in terminal**.
4. **Press Tab and Enter:**

```
sudo apt install ./code
```

5. Once the install has finished you will want to open up VS Code and then **Open folder** and you will want to find your Spot-SDK folder or workspace folder.

## Windows

### Windows 10/11

1. First thing your going to want to do is download the windows installer to the [VS Code download site](#).
2. Once the file has finished downloading you will want to run the installer.
3. Once the install has finished you will want to open up VS Code and then **Open folder** and you will want to find your Spot-SDK folder or workspace folder.

Setup to work with TapeMeasure

# New Page

# Docker

Docker

# Ubuntu Example Docker

# Spot SDK Guides

# Get-Image / Image-Viewer

## Verify Connection First

You will want to make sure that Spot and your computer are connected to the same network.

[Follow this guide.](#)

## Get Image

This will get an image from one of Tape Measures cameras!

### Windows 10/11

1. Start by opening up command prompt and getting into your virtual environment.
2. To get into virtual environment paste:

```
.\my_spot_env\Scripts\activate.bat
```

3. Paste in the command:

```
python.exe -m pip install -r requirements.txt
```

4. It's normal if it takes a little bit.
5. Next you will want to run the command:

```
python.exe get_image.py SPOT-IP --image-sources frontleft_fisheye_image --image-sources frontleft_depth # Replace SPOT-IP with the network address given to it
```

6. For username and password please see [Dwight!](#)

7. With Get-Image you'll find the images saved in the get\_image folder. Here is an example:



## For Mac & Ubuntu users:

1. You will want to navigate to the directory of your Spot-SDK
2. Then you will want to source your virtual environment so your computer knows where to access the files:

```
source my_spot_env/bin/activate
```

3. You're going to want to navigate to your spot-sdk folder
4. Then cd into your get\_image folder of the Spot SDK

```
cd ./python/examples/get_image
```

5. Paste the following command to make sure the required python packages are installed:

```
python3 -m pip install -r requirements.txt
```

6. It's normal if it takes a little bit.

7. Next you will want to run the command:

```
python3 get_image.py SPOT-IP --image-sources frontleft_fisheye_image --image-sources frontleft_depth # Replace SPOT-IP with the network address given to it
```

8. For username and password please see [Dwight!](#)

9. With Get-Image you'll find the images saved in the get\_image folder. Here is an example:



## Image-Viewer

For streaming one of Spot's cameras.

## Windows 10/11

1. Start by opening up command prompt and getting into your virtual environment.
2. To get into virtual environment paste:

```
.\my_spot_env\Scripts\activate.bat
```

3. Paste in the command:

```
python.exe -m pip install -r requirements.txt
```

4. It's normal if it takes a little bit.

5. Next you will want to run the command:

```
python.exe get_image.py SPOT-IP --image-sources frontleft_fisheye_image --image-sources frontleft_depth # Replace SPOT-IP with the network address given to it
```

6. For username and password please see [Dwight!](#)

7. With Get-Image you'll find the images saved in the get\_image folder.

- python.exe image\_viewer.py 192.168.200.39 --image-sources frontleft\_fisheye\_image
  - For more examples and optional adjustments [go to the Spot-SDK](#)

**\*IMPORTANT\*** When in streaming mode press ESC to exit the viewer.

\*You should get images such as this one:

**Want it to show you color? How about adjusting the picture's size? You can mess with arguments during meetings! So be there!**

# Camera Streams

This is an Spot-SDK python example edited by John Sermarini. Basically it stiches together Spot's front two RGB cameras and streams them back to the users computer.

This stream can be unreliable and be intensive to run. No current work is being done to optimize it.

[Live\\_Feed.zip](#)

# Verifying Connection to Spot

## Verifying Connection:

1. Make sure Tape Measure and your device are on the same network.
2. Ping Spot by opening command prompt and paste:

### Windows 10/11:

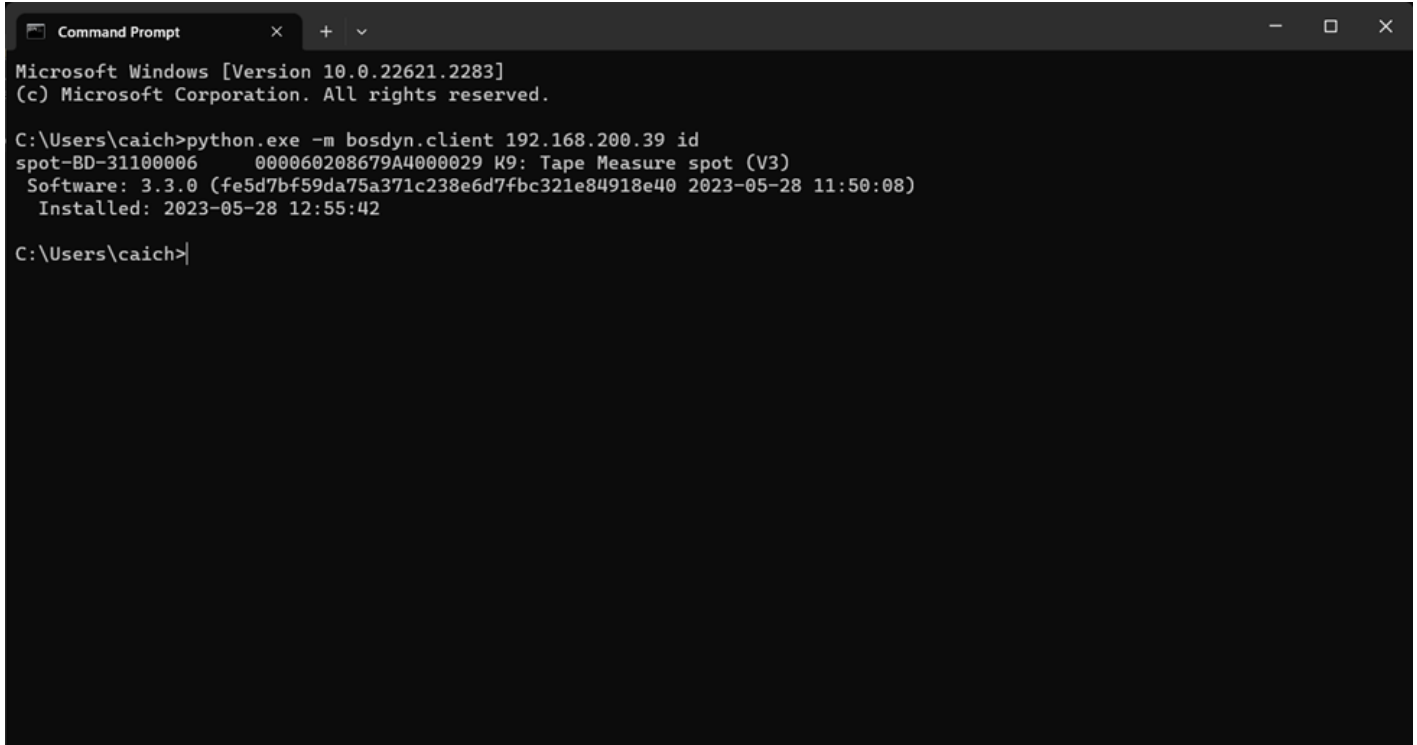
```
python.exe -m bosdyn.client SPOT-IP id # Replace SPOT-IP with the network address given to it
```

### For Mac & Ubuntu users:

```
python3 -m bosdyn.client SPOT-IP id # Replace SPOT-IP with the network address given to it
```

This should return Tape Measure's name and ID.

\*Should look something like this:



```
Microsoft Windows [Version 10.0.22621.2283]
(c) Microsoft Corporation. All rights reserved.

C:\Users\caich>python.exe -m bosdyn.client 192.168.200.39 id
spot-BD-31100006      000060208679A4000029 K9: Tape Measure spot (V3)
Software: 3.3.0 (fe5d7bf59da75a371c238e6d7fbc321e84918e40 2023-05-28 11:50:08)
Installed: 2023-05-28 12:55:42

C:\Users\caich>
```