**MANUAL FOR RUNNING MERAKI PYTHON PROGRAMS**

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**CREATED BY: RIVIERA SPERDUTO**

**FOR: SNIPES USA**

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INTRODUCTION

Hi there. This manual will show a user all steps needed to be able to successfully run the python programs that interact with the Meraki API. This is a high level guide that will be a supplement to the README files that each program should have.

There are 3 programs that were created. Those programs are:

1. updateMeraki\_SDWAN\_details: updates the tags and notes sections of SDWAN’s for different networks within the Meraki organization that SNIPES controls that are not up to date with information from a separate spreadsheet/csv file
2. getMeraki\_WAN\_Data\_Details: displays a GUI to the user that allows them to select n number of stores (networks) from the Meraki organization that SNIPES owns. Creates a spreadsheet of the upload/download traffic of all WANs and Cellular within the networks selected. Displays data in MB.
3. updateMeraki\_WAN\_Traffic\_Preferences: updates the flow preferences for WAN’s within all networks with certain MX devices. Makes sure that certain settings are set to false (load balancing, Active-Active VPN), that the preferred uplink WAN is WAN1 and that all traffic flow settings are set to “Any”. Does not affect the DC or HQ MX devices.

INSTALLING VS CODE

Before doing anything else, we need to install VS code (Visual Studio Code) to be able to install the relevant libraries we are using, and to be able to run the programs in case the executable file fails for any reason.

To do this follow these steps:

1. Go to <https://code.visualstudio.com/>

It should look similar to this:

A screenshot of a computer

Description automatically generated

1. Click on the Download for Windows button

It should automatically start downloading after clicking the previous button

1. Click the executable in your recent downloads, it will look similar to this, you may need to go into the downloads section of your browser to find it if not using chrome.

A screenshot of a browser window

Description automatically generated

1. Follow the steps in the wizard to complete setup, I recommend you follow the way I did it below:

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Hit install and let VS code do its thing.

A screenshot of a computer program

Description automatically generated

After installing, I recommend restarting your PC although it is not required.

INSTALLING PYTHON

To install Python follow these steps:

1. Go to: <https://www.python.org/>

It should look like this or similar to this:

A computer screen shot of a computer

Description automatically generated

1. Go to Downloads, hit the gray button:

If not using windows then you must find the proper release for your system

A screenshot of a computer

Description automatically generated

A download should automatically start

1. Click on the executable in your recent downloads:

A screenshot of a computer

Description automatically generated

You may need to go to the downloads section of your browser to be able to find it.

1. Go through the wizard steps, I recommend that you do the same steps I did:

A screen shot of a computer

Description automatically generated

Make sure the bottom check Add python.exe to PATH is selected!!!

Make sure to hit ‘Install Now’

Let the installer do its job

A yellow figure with text on it

Description automatically generated with medium confidence  
When you see Setup was successful screen just hit close and you should have Python on your PC now!

Although not necessary, I recommend restarting your PC after you install Python.

INSTALLING LIBRARIES FROM TERMINAL

First thing we need to do with VS Code before running our programs is making sure that we install the necessary libraries from the terminal. If we don’t do this, then the programs will not run because dependencies for the program will not be on your PC.

To do this follow these steps:

1. Open VS Code, you should have a screen that looks like this:

A screenshot of a computer

Description automatically generated

1. Go to terminal, New Terminal

A screenshot of a computer

Description automatically generated

1. You should see something that looks similar to this but with your name or your PC’s name (they might be the same)

A screenshot of a computer

Description automatically generated

1. Type in the following commands exactly as shown (without quote marks), one by one, waiting for install of one library before starting with another:

‘pip install meraki’

‘pip install pytest’

‘pip install guizero’

‘pip install openpyxl’

After each of these commands have successfully run, you are ready to download the programs and run them on your machine!

GET THE CODE

The code should be shared on SharePoint with Ed and Rob. They should be able to download the folder and then run the code with the executable provided. I will not provide steps for this.  
  
However if the above does not work for any reason, I have a backup method that you may try.

The backup method will be getting the code from GitHub after I post the updated version with no potential security vulnerabilities in it (deleting the API key, deleting the organization ID, deleting/obfuscating any other SNIPES related information in the code)

This will be the not fun way of doing it but that’s why it’s the back up way to do this, only do it in a last resort situation.

There will be no pictures for this but you should be able to follow along with the steps provided.  
  
you can find the repository with the necessary code here:

<https://github.com/rivie13/SNIPES_Internship_Python_Projects>  
(If programs are not up there, please wait a few days for me to put them up or ask me to put them up, but they should be up)

Go through the repository:

For each of the programs, download/copy the folders and all the contents inside and put it on your desktop.

!!!!! You will need to update the variables in the variable data files the API key and the orgID will be deleted for security purposes you must create your own API key and find the organization ID (look at the updateMeraki\_SDWAN\_details.py file to figure out how to do that) do this before running the program !!!!

When all folders are on your desktop, open the folders and look for the executable and try to run the program.

If the above does not work, please contact me, Riviera Sperduto, for assistance in getting the program running.

RUN THE CODE

IMPORTANT: GO TO EACH PROGRAMS README FILE TO GET MORE DETAILED DESCRIPTION!!!!!

If you were able to download the folders from SharePoint then you should be able to just click on the executables and run the code.  
  
If the code does not work from SharePoint then the most likely error is that the API key was deleted, in which case, you will need to generate a new API key and go to each of the variableData files within each of the programs and update the API key to the active one.  
  
Other errors that can occur during runtime: if the program does too many API calls at one time a 400 level error will occur, sometimes it will return an error saying your API key is invalid even though you just did a bunch of successful calls with the key, when this happens just try to run the program again.  
  
Non 400 level errors are errors that are not easily fixed and you will probably need to contact me, Riviera Sperduto, or another programmer to figure out what went wrong. Also errors that are not Meraki related and are instead due to program error (should not happen) will probably need to be fixed by me, or another programmer that knows Python.

IF THE EXECUTABLES DO NOT WORK:

There is another way that you can run the programs. Find the specific program file you are looking for it will be one of these 3 files:

updateMeraki\_SDWAN\_details.py

getMeraki\_WAN\_Data\_Details.py

updateMeraki\_WAN\_Traffic\_Preferences.py

when you find them, right click on the program and open it with VS Code (Visual Studio Code). In VS Code in the upper right corner you should see a play button. Click on it to run the program.

You can also run the program on the command line, more details should be in each programs README file.

EXTRANEOUS INFORMATION

The most important information here is that in the updateMeraki\_SDWAN\_details.py file it relies on a csv file that is created from a excel file. That excel file/csv file is called Snipes\_Inventory\_Network\_Specs(.xlsx or .csv). If the order of the columns change then the program will have to be changed to be able to make sure that proper data goes to the proper place! If you wish to add more data to the excel file please follow the formatting provided in the file.

Sometimes pytest will act weird if you have \_\_init.py\_\_ files in your packages (folders/directories). I have deleted them and for the most part everything seems to work. If you see one of those \_\_init\_\_.py files you should probably delete it but know you may need to add it back in later for things to work.

Make sure you generate a new API key and replace the old key in variableData.py files every program has their own variableData.py file so you will have to do it three times!!!

After encountering an error, try running the program again to see if it was a weird fluke. If you get 3 or more of the same error in a row, then the program has probably broke somehow and will need maintenance to be able to run again. In this case you may need to reach out to Riviera Sperduto to be able to fix the program, or another programmer who is familiar with Python.