

The screenshot shows a terminal window on the left and a PDF document on the right. The terminal window displays the output of the command `pip install netmiko`, showing the installation of various dependencies and the netmiko module itself. The PDF document, titled "Part 1: Install the netmiko Python module", provides instructions on how to install netmiko using pip and how to verify its installation. It also includes a section for connecting to IOS XE's SSH service using netmiko.

Part 1: Install the netmiko Python module

In this part, you will install netmiko module into your Python environment. Netmiko is a python module that simplifies ssh CLI connection to network devices. It has built in functionality to identify to commands, as well as apply new commands in the running configuration.

Explore the netmiko module on the project GitHub repository: <https://github.com/ktbyers/netmiko>

Step 1: Use pip to install netmiko.

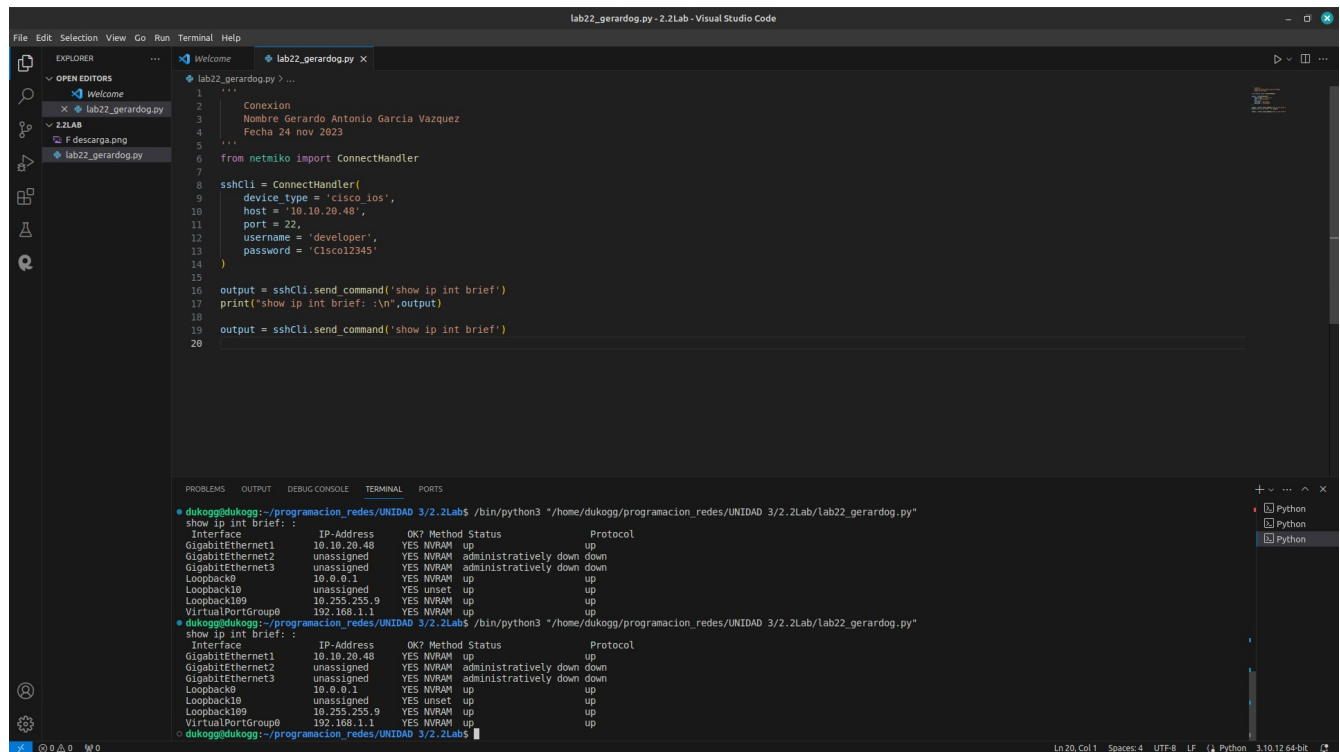
- Start a new Windows command prompt (cmd).
- Install netmiko using pip in the Windows command prompt:
`pip install netmiko`
- Verify that netmiko has been successfully installed. Start Python IDLE and in the interactive prompt import the netmiko module:
`import netmiko`

Lab – CLI Automation with Python using netmiko

Part 2: Connect to IOS XE's SSH service using netmiko

Connect to IOS XE's SSH service using netmiko.

The netmiko module provides a "ConnectHandler()" function to setup the remote ssh connection.



The screenshot shows a Visual Studio Code editor with a Python script named `lab22_gerarodg.py` open. The script uses the netmiko module to connect to a Cisco IOS device and execute the `show ip int brief` command. The terminal output shows the successful execution of the script, displaying the output of the command on the Cisco device.

```
1 '''
2 Conexión
3 Nombre Gerardo Antonio Garcia Vazquez
4 Fecha 24 nov 2023
5 ...
6 from netmiko import ConnectHandler
7
8 sshCli = ConnectHandler(
9     device_type = 'cisco_ios',
10     host = '10.10.20.48',
11     port = 22,
12     username = 'developer',
13     password = 'Cisc0l2345'
14 )
15
16 output = sshCli.send_command('show ip int brief')
17 print('show ip int brief: :\n',output)
18
19 output = sshCli.send_command('show ip int brief')
20
```

The terminal output shows the following:

```
• dukogg@dukogg:~/programacion_redes/UNIDAD 3/2.2Lab$ /bin/python3 ~/home/dukogg/programacion_redes/UNIDAD 3/2.2Lab/lab22_gerarodg.py
show ip int brief: :
Interface IP-Address OK? Method Status Protocol
GigabitEthernet1 10.10.20.48 YES NVRAM up up
GigabitEthernet2 unassigned YES NVRAM administratively down down
GigabitEthernet3 unassigned YES NVRAM administratively down down
Loopback0 10.0.0.1 YES NVRAM up up
Loopback10 unassigned YES unset up up
Loopback109 10.255.255.9 YES NVRAM up up
VirtualPortGroup0 192.168.1.1 YES NVRAM up up
• dukogg@dukogg:~/programacion_redes/UNIDAD 3/2.2Lab$ /bin/python3 ~/home/dukogg/programacion_redes/UNIDAD 3/2.2Lab/lab22_gerarodg.py
show ip int brief: :
Interface IP-Address OK? Method Status Protocol
GigabitEthernet1 10.10.20.48 YES NVRAM up up
GigabitEthernet2 unassigned YES NVRAM administratively down down
GigabitEthernet3 unassigned YES NVRAM administratively down down
Loopback0 10.0.0.1 YES NVRAM up up
Loopback10 unassigned YES unset up up
Loopback109 10.255.255.9 YES NVRAM up up
VirtualPortGroup0 192.168.1.1 YES NVRAM up up
```

Execute the Python script file and verify the results

Why does the output from “show ip int brief” not include the “loopback1” interface?

Al momento de consultar la información que realiza el comando no se encuentra la loopback1

How to execute and display the output from the “show ip int brief” command after the loopback interfaces was created?

Se necesita modificar el código

Add code to create a new loopback interface (loopback2) with the same IP address as on the existing loopback interface, only with a different description.

Execute the Python script file and verify the results.

Was the new loopback2 interface successfully created?

Faltan términos para que este correctamente creada

Was the new configuration change accepted, partially accepted or rejected?

El resultado es Rejected