Python Public IP in LInux

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Time required: 60 minutes

Python in Linux

Python3 is installed in most common Linux distributions. This tutorial is based on using Kali Linux.

NOTE: Commands, filenames, and directories are case sensitive.

Common Linux Commands

su – (change logon to root)

sudo (runs a command as root)

ifconfig

ls (lists files or directories)

cd (change directories)

mkdir (makes directories)

rmdir (removes directories)

cp (copy file)

rm (delete file)

chmod (modify file and directory security)

grep (search text file for characters)

passwd (create or change password)

Install Kali Linux

If you already have Kali Linux as a virtual machine, you can skip this part.

Kali Linux is available in a prebuilt virtual machine.

1. If you do not have VirtualBox on your computer, go to www.virtualbox.org.
2. Download and install the version for your operating system.
3. Go to https://www.kali.org/get-kali/#kali-virtual-machines
4. Download the 64-bit VirtualBox image. This can take some time as the file is 4 GB.
5. Double Click the file you have downloaded. It will ask to be imported into VirtualBox.
6. Start Kali Linux.
7. The username and password is **kali**

Tutorial 1: Public IP CLI

1. Logon to Kali Linux.
2. Start a Terminal session.

Geany is a simple IDE that we will use to code our Python program.

3. Install Geany: **sudo apt install geany**

You are in your home directory. We are going to make a folder to store our Python programs.

4. Create a folder: **mkdir Code**
5. Change to Code folder: **cd Code**

We are going to launch Geany and create our Python program file in the same command.

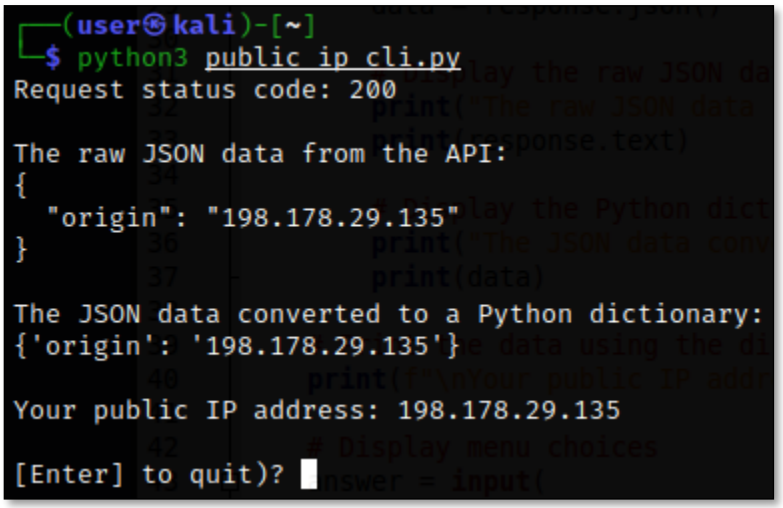
6. **geany public_ip.py**
7. The Geany IDE will open with public_ip_cli.py
8. Add the following code to the file.

```
"""
    Name: public_ip_cli.py
    Author:
    Created:
    Purpose: Get Public IP address from httpbin.org
"""

# Import the requests module
# pip install requests   # Windows
# pip3 install requests  # Linux
import requests

# URL for Public IP requests
API_URL = "http://httpbin.org/ip"
```

```

def main():
    # Use the requests.get() function with the parameter of the API_URL
    response = requests.get(API_URL)

    # If the status_code is 200, successful connection and data
    if response.status_code == 200:

        # Display the status code
        print(
            f"Request status code: {response.status_code}\n")

        # Convert the JSON data into a Python dictionary with key value pairs
        data = response.json()

        # Display the raw JSON data from the API for troubleshooting
        print("The raw JSON data from the API:")
        print(response.text)

        # Display the Python dictionary for troubleshooting
        print("The JSON data converted to a Python dictionary:")
        print(data)

        # Get the public IP value using the origin key
        public_ip = data.get("origin")

    # Print the data using the dictionary created from the API JSON data
    print(f"\nYour public IP address: {public_ip}")

    # Display menu choices
    answer = input(
        "\n[Enter] to quit)? ")


# Call the main method to start the program
main()
```

To run the program in Linux: At a terminal session: **python3 public_ip_cli.py**

Example run: Your public IP is likely to be different than the example.



Tutorial 2: Python Public IP Program GUI

Same program in Tkinter. Almost any Python program can be used in Windows or Linux.

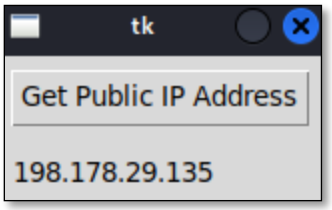
Create a Python program in Linux named **public_ip_gui.py**

```python
"""
    Name: public_ip_gui.py
    Author:
    Created:
    Purpose: Get Public IP address from httpbin.org
"""
from tkinter import *
from tkinter.ttk import *
import requests


class PublicIPGUI:

    def __init__(self):
        # URL API endpoint
        self.URL = "http://httpbin.org/ip"

        # Create Tkinter GUI
        self.root = Tk()
        self.root.geometry("+250+250")
        self.root.resizable(0, 0)

        self.create_widgets()
        mainloop()

#----------------------- GET AND DISPLAY API DATA -------------------------#
    def get_data(self, *args):
        # Use the requests.get() function to get API data
        response = requests.get(self.URL)

        # Convert the JSON data into a Python dictionary with key value pairs
        self.data = response.json()

        # Display API result
        self.lbl_display.configure(text=self.data.get("origin"))

#----------------------------- CREATE WIDGETS -----------------------------#
    def create_widgets(self):
        self.btn_get_data = Button(
            text="Get Public IP Address", command=self.get_data)
        self.lbl_display = Label(justify="left")

        self.btn_get_data.grid(row=0, column=0, sticky=W)
        self.lbl_display.grid(row=1, column=0, sticky=W)

        # Set padding for all widgets
        for child in self.root.winfo_children():
            child.grid_configure(padx=7, pady=7)

        # The enter key will activate the calculate method
        self.root.bind("<Return>", self.get_data)
        self.root.bind("<KP_Enter>", self.get_data)


# Create object to start program
public_ip_gui = PublicIPGUI()
```

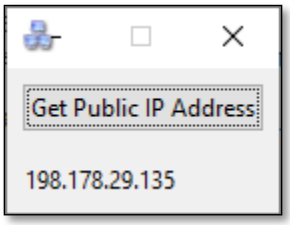
To run the program in Linux: At a terminal session: **python3 public_ip_gui.py**

Example run:

Linux



Windows



Assignment Submission

Linux has Firefox as a web browser. You can use that to submit your code files.

1. Attach all program files.
2. Attach a screenshot of each successful program run.
3. Submit the assignment in Blackboard.