Setting Up a Penetration Testing Environment with Essential Tools

Series of instructions for installing and configuring various tools and services on a Linux-based system (presumably Kali Linux or Ubuntu). Here's a breakdown of what each part does:

1. Postman Installation

- **Download Postman Tarball**: This downloads the latest version of Postman for Linux.
- **Extract the Tarball**: Extracts the downloaded .tar.gz file to /opt directory.
- **Create a Symlink**: Creates a symlink so that you can run Postman from the terminal using the postman command.
- **Run Postman**: Opens Postman by typing Postman in the terminal.

2. Install Git

- Installs Git, a version control tool, using the package manager (apt-get).

3. Install Docker

- Installs Docker and Docker Compose to manage containers on the system.

4. Install Go

- Installs Go (Golang), a programming language, using the apt package manager.

5. Create a New User

- **Create User**: Adds a new user with a home directory and a bash shell.
- **Set Password**: Assigns a password to the newly created user.

6. Setup for jwt_tool

- **Create Virtual Environment**: Creates a new Python virtual environment in the user's home directory.

- **Clone Repository**: Clones the jwt_tool repository from GitHub and installs dependencies using pip.
- **Run the Tool**: Executes jwt_tool.py from the virtual environment.

7. Install Kiterunner

- **Clone Kiterunner**: Clones the Kiterunner repository from GitHub.
- **Build**: Builds Kiterunner.
- **Create Symlink**: Creates a symlink for easy execution of the tool.

8. Setup for Arjun

- **Create Virtual Environment**: Creates a virtual environment for the Arjun tool.
- **Install Arjun**: Installs the Arjun tool in the virtual environment.
- **Change Directory Permissions**: Modifies the permissions for the /opt/Arjun directory if necessary to allow user modifications.

9. Install OWASP ZAP

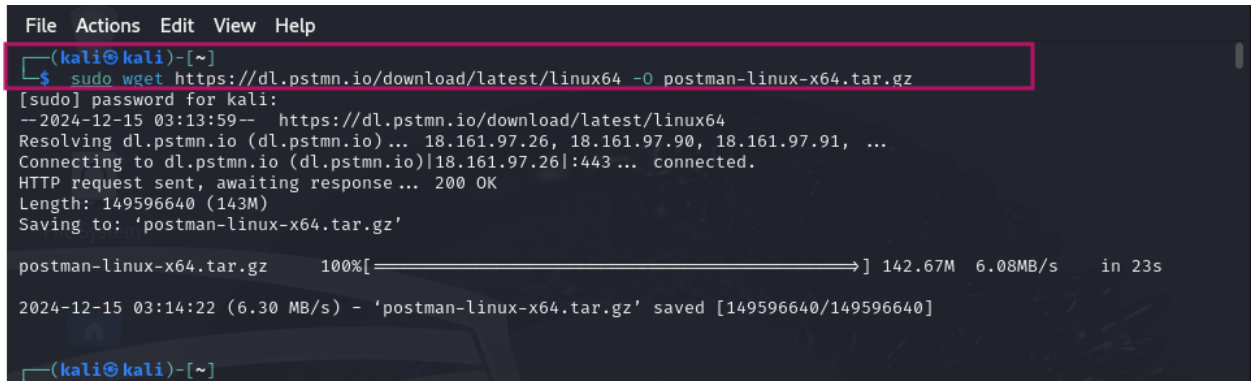
- Installs OWASP ZAP (Zed Attack Proxy), a tool used for security testing and vulnerability scanning.

These steps are typically followed for setting up various security and development tools on a Kali Linux or Ubuntu system.

- Download Postman Tarball

Command :

sudo wget https://dl.pstmn.io/download/latest/linux64 -O postman-linux-x64.tar.gz



- Extract the Tarball

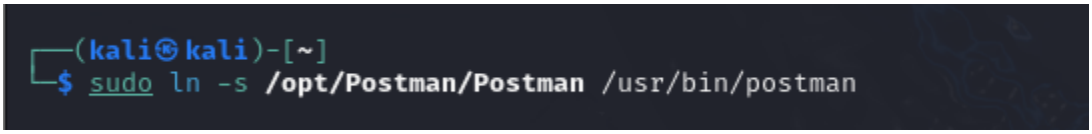
Command :

sudo tar -xvzf postman-linux-x64.tar.gz -C /opt

- Create a Symlink

Command :

sudo ln -s /opt/Postman/Postman /usr/bin/postman



- Run postman

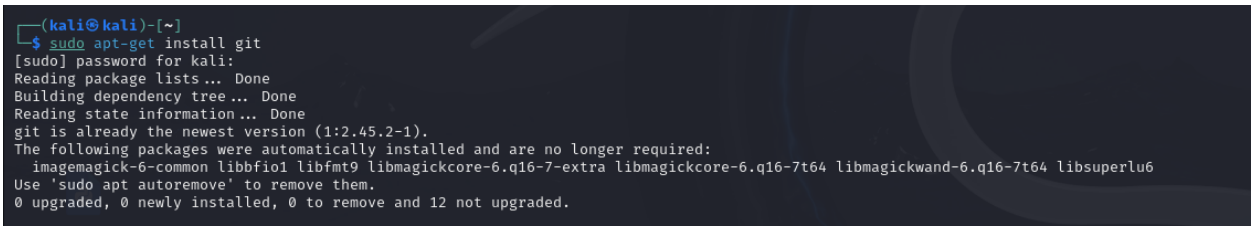
Command :

Postman

- Install Git

Command :

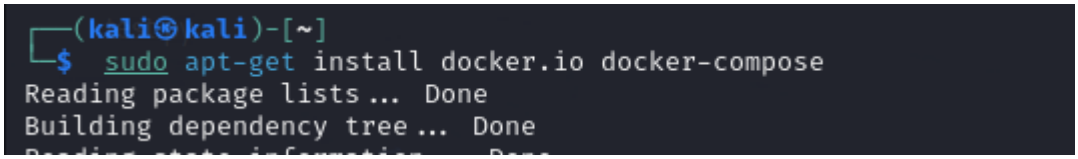
sudo apt-get install git

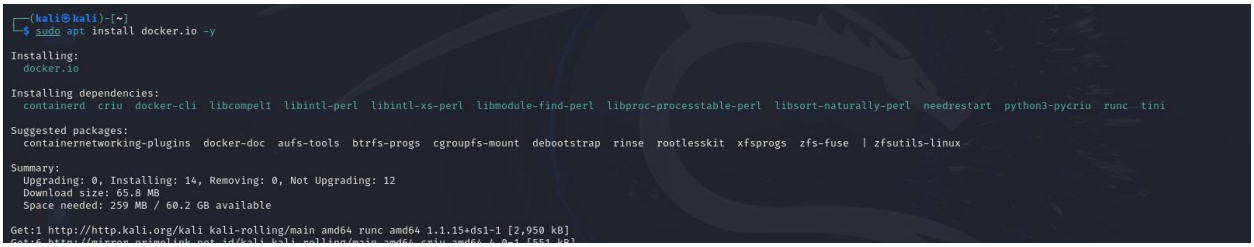


- Install Docker

Command :

sudo apt-get install docker.io docker-compose





- Install Go

Command :

sudo apt install golang-go

Create a New User in kali

Run the following command to create a new user:

Command :

sudo useradd -m -s /bin/bash <username>

- Replace <username> with the desired username.
- The -m flag creates the user's home directory.
- The -s flag specifies the shell to use (/bin/bash in this case).

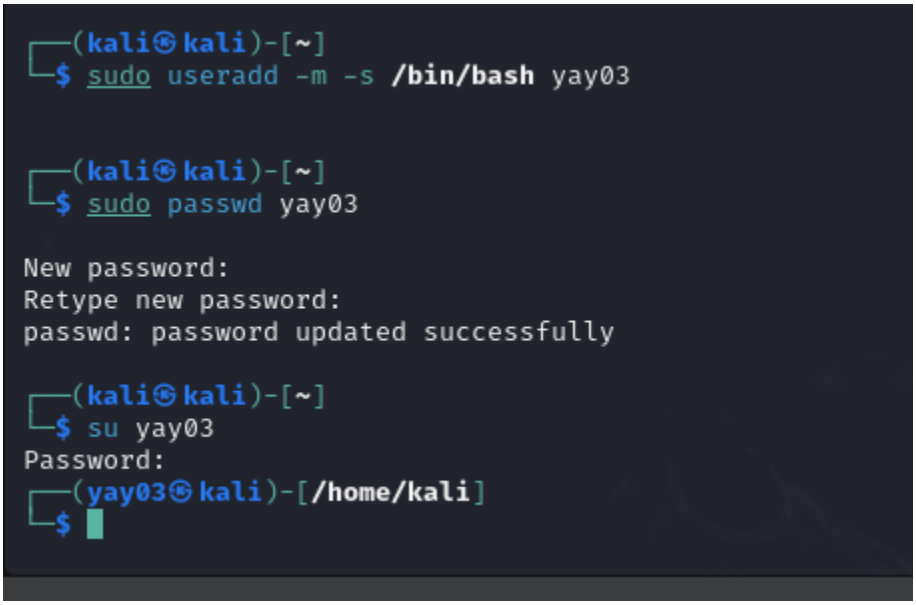
Step 3: Set a Password for the New User

Assign a password to the new user:

Command :

sudo passwd <username>

- Enter the password when prompted.



Option 1: Create Virtual Environment in Home Directory

1. Navigate to your home directory:

Command :

cd ~

2. Create a new folder for your jwt_tool and clone the repository there:

Command :

mkdir ~/jwt_tool

cd ~/jwt_tool

git clone https://github.com/ticarpi/jwt_tool

cd jwt_tool

3. Create the virtual environment in the new folder:

Command :

python3 -m venv venv

Activate the Virtual Environment

1. Activate the virtual environment:

Command :

source venv/bin/activate

After activation, your prompt should change to indicate the environment is active (e.g., (venv)).

Install the Required Packages

1. Use pip to install the required dependencies:

Command :

python3 -m pip install termcolor cprint pycryptodomex requests

These packages will be installed in the virtual environment, isolated from the system Python.

Step 4: Run the Tool

1. Run the tool using the Python interpreter in the virtual environment:

Command :

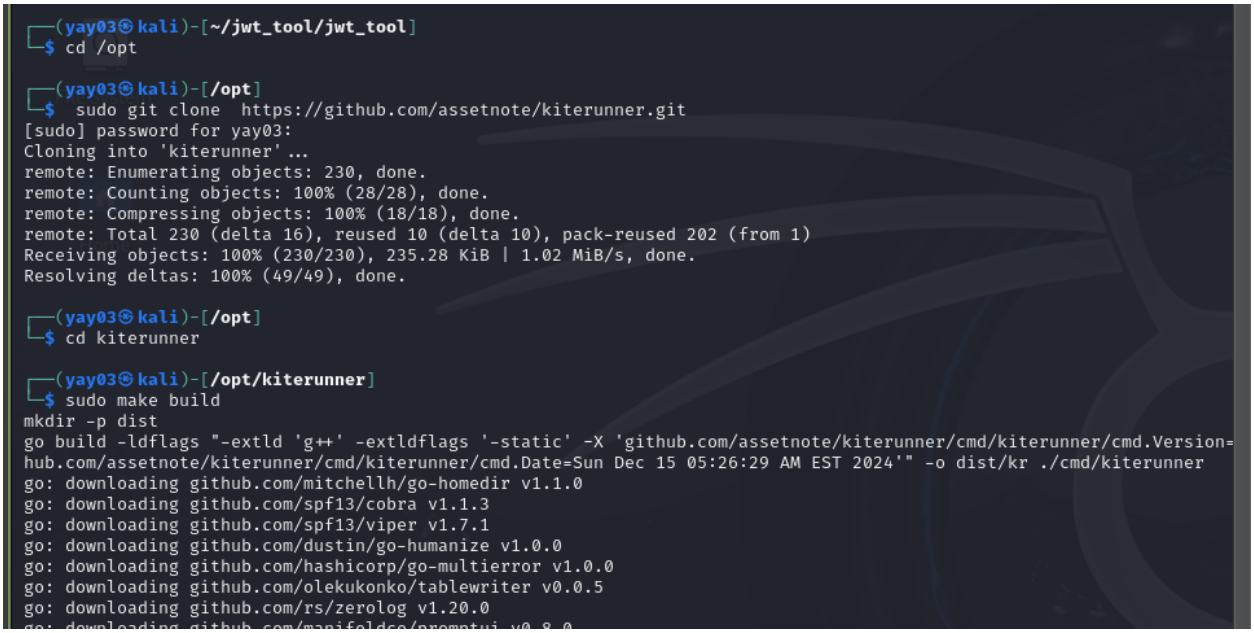
python3 jwt_tool.py

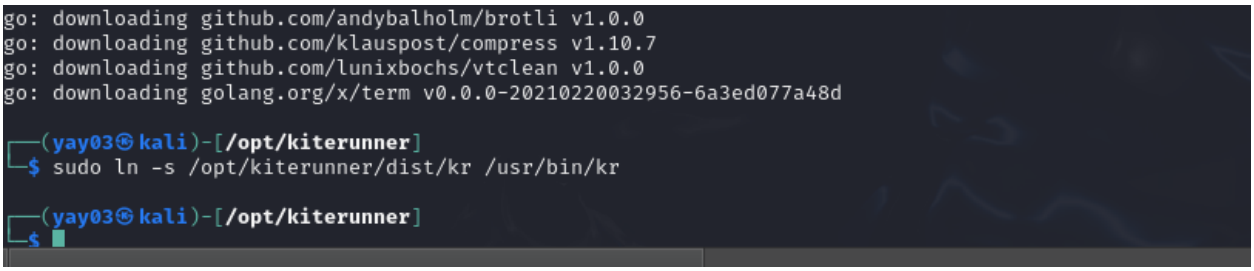
```
┌──(yay03㉿kali)-[/opt/jwt_tool]
└─$ cd ~

┌──(yay03㉿kali)-[~]
└─$ mkdir ~/jwt_tool
cd ~/jwt_tool
git clone https://github.com/ticarpi/jwt_tool
cd jwt_tool
Cloning into 'jwt_tool'...
remote: Enumerating objects: 237, done.
remote: Counting objects: 100% (99/99), done.
remote: Compressing objects: 100% (26/26), done.
remote: Total 237 (delta 92), reused 73 (delta 73), pack-reused 138 (from 1)
Receiving objects: 100% (237/237), 137.75 KiB | 1.06 MiB/s, done.
Resolving deltas: 100% (117/117), done.

┌──(yay03㉿kali)-[~/jwt_tool/jwt_tool]
└─$ python3 -m venv venv

┌──(yay03㉿kali)-[~/jwt_tool/jwt_tool]
└─$ source venv/bin/activate

┌──(venv)(yay03㉿kali)-[~/jwt_tool/jwt_tool]
└─$ python3 -m pip install termcolor cprint pycryptodomex requests
Collecting termcolor
  Downloading termcolor-2.5.0-py3-none-any.whl.metadata (6.1 kB)
Collecting cprint
  Downloading cprint-1.2.2.tar.gz (2.3 kB)
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing metadata (pyproject.toml) ... done
Collecting pycryptodomex
  Downloading pycryptodomex-3.21.0-cp36-abi3-manylinux_2_17_x86_64.manylinux2014_x86_64.whl.metadata (3.4 kB)
Collecting requests
  Downloading requests-2.32.3-py3-none-any.whl.metadata (4.6 kB)
Collecting charset-normalizer<4,≥2 (from requests)
  Downloading charset_normalizer-3.4.0-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl.metadata (34 kB)
Collecting idna<4,≥2.5 (from requests)
  Downloading idna-3.10-py3-none-any.whl.metadata (10 kB)
Collecting urllib3<3,≥1.21.1 (from requests)
  Downloading urllib3-2.2.3-py3-none-any.whl.metadata (6.5 kB)
Collecting certifi≥2017.4.17 (from requests)
  Downloading certifi-2024.12.14-py3-none-any.whl.metadata (2.3 kB)
Downloading termcolor-2.5.0-py3-none-any.whl (7.8 kB)
Downloading pycryptodomex-3.21.0-cp36-abi3-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.3 MB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 2.3/2.3 MB 5.2 MB/s eta 0:00:00
Downloading requests-2.32.3-py3-none-any.whl (64 kB)
Downloading certifi-2024.12.14-py3-none-any.whl (164 kB)
Downloading charset_normalizer-3.4.0-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (143 kB)
Downloading idna-3.10-py3-none-any.whl (70 kB)
Downloading urllib3-2.2.3-py3-none-any.whl (126 kB)
Building wheels for collected packages: cprint
  Building wheel for cprint (pyproject.toml) ... done
```

Activate

Install Kiterunner

- **sudo git clone https://github.com/assetnote/kiterunner.git**
- **cd kiterunner**
- **sudo make build**
- **sudo ln -s /opt/kiterunner/dist/kr /usr/bin/kr**





Option 1: Create the Virtual Environment in Your Home Directory

1. Change to your home directory:

Command :

cd ~

2. Create a virtual environment inside your home directory:

Command :

python3 -m venv arjun_venv

3. Activate the virtual environment:

Command :

source arjun_venv/bin/activate

4. Then, proceed to install the package in this virtual environment:

Command :

cd /opt/Arjun

python3 setup.py install

Option 1: Change the Directory Permissions

You can change the permissions of the /opt/Arjun directory to allow your user to write to it:

1. Run this command to give write access to your user:

Command :

sudo chown -R $USER:$USER /opt/Arjun

2. After that, try running the installation command again in the virtual environment:

Command :

python3 setup.py install

```
┌──(arjun_venv)─(kali㉿kali)-[/opt/Arjun]
└─$ sudo chown -R $USER:$USER /opt/Arjun

[sudo] password for kali:

┌──(arjun_venv)─(kali㉿kali)-[/opt/Arjun]
└─$ python3 setup.py install

running install
/home/kali/arjun_venv/lib/python3.12/site-packages/setuptools/_distutils/cmd.py:66: SetuptoolsDeprecationWarning: se
tup.py install is deprecated.
!!

        ********************************************************************************
        Please avoid running ``setup.py`` directly.
        Instead, use pypa/build, pypa/installer or other
        standards-based tools.

        See https://blog.ganssle.io/articles/2021/10/setup-py-deprecated.html for details.
        ********************************************************************************

!!
  self.initialize_options()
/home/kali/arjun_venv/lib/python3.12/site-packages/setuptools/_distutils/cmd.py:66: EasyInstallDeprecationWarning: e
asy_install command is deprecated.
!!

        ********************************************************************************
        Please avoid running ``setup.py`` and ``easy_install``.
        Instead, use pypa/build, pypa/installer or other
        standards-based tools.

        See https://github.com/pypa/setuptools/issues/917 for details.
        ********************************************************************************

!!
  self.initialize_options()
running bdist_egg
running egg_info
creating arjun.egg-info
writing arjun.egg-info/PKG-INFO
writing dependency_links to arjun.egg-info/dependency_links.txt
writing entry points to arjun.egg-info/entry_points.txt
writing requirements to arjun.egg-info/requires.txt
```

```
Installed /home/kali/arjun_venv/lib/python3.12/site-packages/idna-3.10-py3.12.egg
Searching for charset-normalizer<4,≥2
Reading https://pypi.org/simple/charset-normalizer/
Downloading https://files.pythonhosted.org/packages/bf/9b/08c0432272d77b04803958a4598a51e2a4b51c06640af8b8f0f908c18b
f2/charset_normalizer-3.4.0-py3-none-any.whl#sha256=fe9f97feb71aa9896b81973a7bbada8c49501dc73e58a10fcef6663af95e5079
Best match: charset-normalizer 3.4.0
Processing charset_normalizer-3.4.0-py3-none-any.whl
Installing charset_normalizer-3.4.0-py3-none-any.whl to /home/kali/arjun_venv/lib/python3.12/site-packages
Adding charset-normalizer 3.4.0 to easy-install.pth file
detected new path './idna-3.10-py3.12.egg'
Installing normalizer script to /home/kali/arjun_venv/bin

Installed /home/kali/arjun_venv/lib/python3.12/site-packages/charset_normalizer-3.4.0-py3.12.egg
Finished processing dependencies for arjun==2.2.7

┌──(arjun_venv)─(kali㉿kali)-[/opt/Arjun]
└─$
```

```
┌──(arjun_venv)─(kali㉿kali)-[/opt/Arjun]
└─$ arjun
```

- Install OWASP ZAP

Command : **sudo apt install zaproxy**

```
┌──(arjun_venv)─(kali㉿kali)-[~]
└─$ sudo apt install zaproxy
Installing:
  zaproxy

Summary:
  Upgrading: 0, Installing: 1, Removing: 0, Not Upgrading: 12
  Download size: 213 MB
  Space needed: 266 MB / 59.5 GB available

Get:1 http://kali.download/kali kali-rolling/main amd64 zaproxy all 2.15.0-0kali1 [213 MB]
Fetched 213 MB in 39s (5,525 kB/s)
Selecting previously unselected package zaproxy.
(Reading database ... 425503 files and directories currently installed.)
Preparing to unpack .../zaproxy_2.15.0-0kali1_all.deb ...
Unpacking zaproxy (2.15.0-0kali1) ...
Setting up zaproxy (2.15.0-0kali1) ...
Processing triggers for kali-menu (2024.4.0) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.

┌──(arjun_venv)─(kali㉿kali)-[~]
└─$

┌──(arjun_venv)─(kali㉿kali)-[~]
└─$
```

- Open zaproxy