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# Install and setup cowrie honeypot on Ubuntu

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## How to install and setup cowrie honeypot on Ubuntu?

**Overview:** This article describes how to install and set up the Cowrie honeypot on Ubuntu by changing the SSH port, installing dependencies, setting up a virtual environment, configuring Cowrie, redirecting traffic via iptables, and running the honeypot to log attacker activity.

### What is Cowrie honeypot?

The **Cowrie honeypot** is designed to impersonate SSH servers, specifically one with easily cracked credentials. Once an attacker logs in they will be accessing a fake Linux shell where they can execute commands which will look realistic. It will *record all the sessions* of an attacker. With **Cowrie**, the attacker will think they have hacked/attacked your server as if it was real. When an attacker tries to log into your server with the right username and password, the system will let them access a fake system in which they are not supposed to be.

**Honeypot keeps records of the attacker such as the commands he typed or the keys he pressed and all the activities of the attacker.**

The hosts *SSH daemon* will run on a highest port which is 22222, **Cowrie** will run on 2222, and port 22 (default SSH) will be redirected to 2222 using *iptables*. When the attacker connects to port 22 it will be redirected to our Honeypot on port 2222.

### How to install Cowrie?

Before installing cowrie and our dependencies, change the default SSH port 22 to port 22222 in **sshd\_config** file so that the attacker thinks that they are in real SSH port and *restart SSH* to see if it is listening to the newly configured port.

```
root@localhost:~# vi /etc/ssh/sshd_config

Replace port 22 with the highest port 22222 and restart ssh

root@localhost:~# systemctl restart ssh

root@localhost:~# systemctl status ssh
```

To confirm if it is listening to the newly configured port run the below command:

```
ssh [your-username]@localhost -p 22222
```

Now **install cowrie honeypot on ubuntu**

Step 1. Update the system

```
root@localhost:~# apt update
```

Step 2. **Install all the dependencies of Cowrie**

```
root@localhost:~# apt-get install git python-virtualenv libssl-dev  
build-essential libpython-dev python2.7-minimal authbind
```

Step 3. Add a user Cowrie

```
root@localhost:~# adduser --disabled-password cowrie
```

Step 4. Login in to the new user account **Cowrie**

```
root@localhost:~# su - cowrie
```

Step 5. Download the code for **cowrie**.

```
cowrie@localhost:~$ git clone  
http://github.com/micheloosterhof/cowrie
```

Step 6. Move into **cowrie** folder and create a new virtual environment for the tool by running the command below.

```
cowrie@localhost:~$ cd cowrie/  
  
cowrie@localhost:~/cowrie$ virtualenv cowrie-env
```

Step 7. Activate this new virtual environment.

```
cowrie@localhost:~/cowrie$ source cowrie-env/bin/activate
```

Step 8. Install the packages of Python that Cowrie needs to run

```
(cowrie-env) cowrie@localhost:~/cowrie$ pip install --upgrade pip  
  
(cowrie-env) cowrie@localhost:~/cowrie$ pip install --upgrade -r  
requirements.txt
```

Step 9. Create a copy of **cowrie.cfg.dist** so that we can edit that config file.

```
(cowrie-env) cowrie@localhost:~/cowrie$ cd etc/

(cowrie-env) cowrie@localhost:~/cowrie/etc$ cp cowrie.cfg.dist
cowrie.cfg
```

Step 10. Edit the config file by changing the hostname first and then enable telnet using any of the editors.

```
(cowrie-env) cowrie@localhost:~/cowrie/etc$ nano cowrie.cfg
```

```
# =====
[honey_pot]

# Sensor name is used to identify this Cowrie instance. Used by the database
# logging modules such as mysql.
#
# If not specified, the logging modules will instead use the IP address of the
# server as the sensor name.
#
# (default: not specified)
#sensor_name=myhostname

# Hostname for the honeypot. Displayed by the shell prompt of the virtual
# environment
#
# (default: svr004)
hostname = topsecret

# Directory where to save log files in.
#
# (default: log)
log_path = var/log/cowrie
```

```
[telnet]

# Enable Telnet support, disabled by default
enabled = true

# Endpoint to listen on for incoming Telnet connections.
# See https://twistedmatrix.com/documents/current/core/howto/endpoints.html#servers
# (default: listen_endpoints = tcp:2223:interface=0.0.0.0)
# (use systemd: endpoint for systemd activation)
# listen_endpoints = systemd:domain=INET:index=0
# For IPv4 and IPv6: listen_endpoints = tcp6:2223:interface=\: tcp:2223:interface=0.0.0.0
# Listening on multiple endpoints is supported with a single space separator
# e.g "listen_endpoints = tcp:2223:interface=0.0.0.0 tcp:2323:interface=0.0.0.0" will re
# use authbind for port numbers under 1024

listen_endpoints = tcp:2223:interface=0.0.0.0
```

Step 11. **Redirect traffic of port 22 and 23 to the high ports 2222 and 2223 using iptables**

```
root@localhost:~# iptables -t nat -A PREROUTING -p tcp --dport 22
-j REDIRECT --to-port 2222

root@localhost:~# iptables -t nat -A PREROUTING -p tcp --dport 23
-j REDIRECT --to-port 2223
```

Step 12. **Start cowrie.**

```
(cowrie-env) cowrie@localhost:~/cowrie$ bin/cowrie start

You can stop cowrie by running the following command

(cowrie-env) cowrie@localhost:~/cowrie$ bin/cowrie stop
```

Step 13. To see the logs in realtime in honeypot use below command.

```
(cowrie-env) cowrie@localhost:~/cowrie/var/log/cowrie$ tail -f
cowrie.log
```

Step 14. To get the **logs of Honeypot** use below command

```
(cowrie-env) cowrie@localhost:~/cowrie/var/log/cowrie$ cat
cowrie.log
```

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