

Cybersecurity Internship — Short Report: Basic Anonymity Workflow on Kali Linux

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1. Scope

This report covers:

- Installing and configuring `tor` and `proxychains4`.
 - Basic usage examples of `proxychains4` with applications.
 - Installing and using `macchanger` to randomize or set a specific MAC address.
 - How to revert MAC changes.
 - Quick verification steps.
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2. Environment

- OS: Kali Linux (Debian-based)
 - Tools used: `tor`, `proxychains4`, `macchanger`, `ip` / `ifconfig`, `nmcli` (if NetworkManager used)
 - Privileges: `sudo` required for install and network interface changes
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3. Tools & Installation

4.1 Install proxychains4 and tor

```
sudo apt update  
sudo apt install -y proxychains4 tor
```

4.2 Install macchanger

```
sudo apt update  
sudo apt install -y macchanger
```

4. Configure proxychains to use Tor

Open the proxychains configuration file and ensure Tor (local SOCKS) is configured as an endpoint:

```
sudo nano /etc/proxchains4.conf
```

Near the bottom of the file, set the chaining behavior and add a SOCKS5 line that points to the local Tor proxy (default port 9050):

```
# use dynamic_chain or strict_chain depending on your preference  
# dynamic_chain  
# or strict_chain  
socks5 127.0.0.1 9050
```

Save the file. Ensure Tor is running:

```
sudo systemctl enable --now tor  
ss -ltnp | grep 9050
```

5. Using proxychains4

Run commands through `proxychains4` to force them through the configured chain (Tor in this example):

```
proxychains4 curl https://check.torproject.org  
proxychains4 firefox
```

6. MAC address management with macchanger

Always bring the interface down before changing the MAC address and back up afterwards.

6.1 Check interface name

```
ip link  
# or  
ifconfig -a
```

6.2 Temporarily change MAC (random)

```
sudo ip link set dev wlan0 down  
sudo macchanger -r wlan0  
sudo ip link set dev wlan0 up  
ip link show wlan0
```

6.3 Set a specific MAC

```
sudo ip link set dev wlan0 down  
sudo macchanger --mac=12:34:56:78:9A:BC wlan0  
sudo ip link set dev wlan0 up  
ip link show wlan0
```

6.4 Revert to original hardware MAC

```
sudo ip link set dev wlan0 down  
sudo macchanger -p wlan0  
sudo ip link set dev wlan0 up  
ip link show wlan0
```

6.5 NetworkManager interaction

If NetworkManager is active it may override manual `macchanger` changes. Use `nmcli` to set a cloned MAC on a connection or edit `/etc/NetworkManager/NetworkManager.conf` to enable randomization. Example `nmcli` commands:

```
nmcli connection show  
sudo nmcli connection modify "WIFI-CON-NAME" 802-3-ethernet.cloned-mac-address random  
sudo nmcli connection down "WIFI-CON-NAME"  
sudo nmcli connection up "WIFI-CON-NAME"
```

Or globally enable MAC randomization in `/etc/NetworkManager/NetworkManager.conf`:

```
[device]  
wifi.scan-rand-mac-address=yes
```

```
[connection]
wifi.cloned-mac-address=random
```

Then restart NetworkManager:

```
sudo systemctl restart NetworkManager
```

7. Verification & Quick Checks

- Verify external IP (when using proxy/VPN):

```
curl ifconfig.me
```

- Confirm Tor usage with proxychains4 :

```
proxychains4 curl https://check.torproject.org
```

- Confirm MAC address (before/after):

```
cat /sys/class/net/wlan0/address
ip link show wlan0
```
