National College of Ireland

Configuration Manual

MSc Research Project
MSCCYBE

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MSc Project Submission Sheet

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Configuration Manual

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1 Python

The program is built on python so python is required to be installed on the machine the tool is running on. You can get it directly from python's website https://www.python.org/downloads/. If running the tool on a linux tool, the command *'apt-get install python*' will also install python. The tool comes with a requirements.txt file. This allows for easily installation of required python libraries.

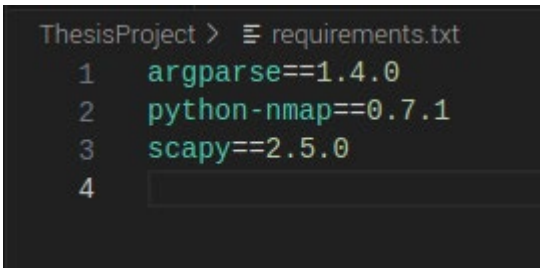

Figure 1. Requirements.txt file

In order to install the libraries from the python file, the command *'pip install -r requirements.txt'* needs to be run

To change the amount of time the tool listens and captures packets on the network for each device, in the utilityScripts.py file, you can change the duration variable under the packet_capture function. This value is in seconds.

```
def packet_capture(target_ip):
    local_ip = get_local_ip()
    interface="eth0"
    duration=300
    # Capture packets for the specified duration and target IP
    captured_packets = capture_packets(duration, interface, target_ip)
```

Figure 2. Packet capture duration variable

For the email sending function of the tool, valid credentials of an email account are required. The smtp server url, username, password need to be set. This is located in the utilityScripts.py under the function send_email. The email body and title can also be changed to whatever the user desires. The sender email address and recipient email address can also be changed here.

```python
def send_email():
    # Email server configuration
    smtp_server = "smtp.gmail.com"
    smtp_port = 587
    smtp_user = "email username here"
    smtp_password = "email password here"
    subject = "Vulnerability Scan Report"
    body = "This is your vulnerability scan that you requested."
    to_email = "email recipient here"
    attachment_path = "network_scan_results.html"

    from_email = "Email sender address here"
    to_email = to_email

    # Create the MIME object
    msg = MIMEMultipart()
    msg['From'] = from_email
    msg['To'] = to_email
    msg['Subject'] = subject

    # Include the formatted body text in the MIME object
    msg.attach(MIMEText(f"Hi there,\n\n{body}\n\nKind Regards,\nEoin", 'plain'))
```

Figure 3. Send email configuration

All that's left to do is run the command 'python main_script.py' and the tool will take care of the rest. It's reccomended that the tool be run with sudo as for some of the scans, it needs extra permissions that will fail if the tool is not run as root.

In order to setup a device to run the script on boot, a systemctl service can be created. Create a new file at the directory /etc/systemd/system/(name of service).service. Here is a systemctl service that I created for my Raspberry Pi server.

```
File  Edit  Tabs  Help
 GNU nano 5.4                                    /etc/systemd/system/audittool.service
[ /etc/systemd/system/audittool.service
[Unit]
Description=Executes home office audit tool
AssertPathIsDirectory=/home/eoin/project

[Service]
Type=simple
ExecStart=python main_script.py

[Install]
Alias=default.target
WantedBy=default.target
```

Figure 4. Systemctl service configuration

2 Bibliography

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