**Port Scanner Documentation**

**What is a Port Scanner?**

A Port Scanner is a software tool or program used to scan a target computer or network to identify open ports. In the context of computer networking, ports represent communication endpoints used by various applications to exchange data. Port scanning involves probing a range of ports on a target device to determine which ports are open and potentially accessible to outside connections.

**What is it used for?**

A Port Scanner is a vital tool for network administrators and security professionals to assess the security posture of a network. It helps in identifying potential vulnerabilities, services running on specific ports, and whether any ports are open and potentially exposed to unauthorized access or attacks.

**Running the Port Scanner:**

1. **Prerequisites:**

- Python installed on the system (Python 3.x recommended).

2. **Download the Code:**

- Download the *"scanner.py"* file from the repository.

3. **Command Line Execution:**

- Open the terminal or command prompt.

4. **Navigate to the Directory:**

- Change the directory to the location where *"scanner.py"* is saved.

5. **Running the Script:**

- Execute the Python script by entering the following command:

*python3 scanner.py*

6. **Provide Target Information:**

- Enter the IPv4 address of the target you want to scan when prompted.

**STEPS**

-Open Command Prompt or Terminal.

-Enter the comm following command: *"ipconfig"* to know your ipv4 address.

- Enter the starting port number and ending port number for the scan range(1-65535).

7. **Scanning Process:**

- The port scanner will initiate the scan and display the results on the command line.

- It will show which TCP ports are open on the target IP and provide additional information for specific well-known ports like FTP (21), SSH (22), and Telnet (23).

8. **Scan Completion:**

- After the scan is completed, the script will display the duration of the scan and the time it started and ended.

9. **Interpreting Results:**

- Open ports signify potential entry points for unauthorized access or attacks.

- It is essential to analyze the results to identify and secure any vulnerable ports.

10. **Exit the Script:**

- The script will terminate after displaying the scan results.

1. **Conclusion**

Please note that port scanning is a sensitive operation, and it is essential to have proper authorization before scanning any target that does not belong to you. Unauthorized port scanning may be considered unethical and even illegal. Always ensure you have the necessary permissions and rights before running the port scanner on any network or system.