Proxy Alchemist: Advanced Proxy Management System

Introduction

Proxy Alchemist is an advanced, non-root compatible proxy management system designed for Termux and other Linux environments. It provides a comprehensive suite of features for managing and utilizing proxies, including automatic IP rotation, Tor integration, local proxy server capabilities, and detailed traffic analysis. This tool aims to enhance online privacy and security by allowing users to easily switch their IP addresses and route their traffic through various proxy networks.

Features

- **Automatic IP Rotation**: Seamlessly changes your IP address at specified intervals using a pool of available proxies.
- **Tor Integration**: Provides built-in functionality to start, stop, and rotate Tor circuits for enhanced anonymity.
- **Local Proxy Server**: Allows you to set up a local HTTP proxy that can be used by other devices on your network, effectively turning your device into a proxy gateway.
- **QR Code Generation**: Generates QR codes for easy configuration of Wi-Fi proxy settings on Android devices.
- **Traffic Analysis**: Monitors and logs sent and received traffic through the active proxy.
- **Favorites Management**: Save and manage your preferred proxy configurations for quick access.
- **Multiple Proxy Sources**: Fetches proxies from various online sources and supports custom proxy lists.
- **DNS Protection**: (Limited functionality without root) Attempts to configure secure DNS servers to prevent DNS leaks.
- **Browser Spoofing**: Randomizes user-agent strings to help prevent browser fingerprinting.
- **Configurable Settings**: Customize various aspects of the tool, including rotation intervals, latency thresholds, and protocol preferences.

- **Non-Root Compatibility**: Designed to run without requiring root privileges, especially beneficial for Termux users.

Installation Guide

This section provides detailed instructions on how to install and set up Proxy Alchemist on your system, with a focus on Termux (Android) and general Linux environments.

Prerequisites

Before you begin, ensure you have the following installed:

- **Python 3.6+**: Proxy Alchemist is written in Python and requires version 3.6 or newer.
  - **For Termux**: Python 3 is usually pre-installed or can be installed via `pkg install python`.
  - **For Linux**: Python 3 is typically available in your distribution's package manager (e.g., `sudo apt install python3` on Debian/Ubuntu, `sudo dnf install python3` on Fedora).
- **Git**: Required to clone the repository.
  - **For Termux**: `pkg install git`
  - **For Linux**: `sudo apt install git` or `sudo dnf install git`

Step-by-Step Installation

1. **Clone the Repository**

   Open your terminal (Termux or Linux) and execute the following command to clone the Proxy Alchemist repository from GitHub:

   `bash`
   `git clone https://github.com/your-username/proxy-alchemist.git`

   Note: Replace `https://github.com/your-username/proxy-alchemist.git` with the actual GitHub repository URL once it's set up.

2. **Navigate to the Project Directory**

   Change your current directory to the newly cloned `proxy-alchemist` folder:

   `bash`
   `cd proxy-alchemist`

3. **Install Required Python Packages**

   Proxy Alchemist relies on several Python libraries. Install them using `pip`:

   ```
   bash
   pip install requests pyfiglet colorama geoip2 qrcode psutil
   ```

   - **Troubleshooting `geoip2` or `qrcode`**: If you encounter issues with `geoip2` or `qrcode` installation, it might be due to missing system dependencies. These are optional features, and the script is designed to run without them if they cannot be installed. However, for full functionality, ensure you have development headers for Python and other build tools.
     - **For Termux**: `pkg install build-essential python-dev` (or `python3-dev`)
     - **For Linux (Debian/Ubuntu)**: `sudo apt install build-essential python3-dev`

4. **Download GeoIP Database (Optional but Recommended)**

   For geographic proxy filtering and information, download the GeoLite2 City database. You'll need to register for a free account with MaxMind to get a license key.

   1. Go to MaxMind GeoLite2 Download Page.
   2. Sign up for a free account and generate a license key.
   3. Download the `GeoLite2-City.mmdb` file.
   4. Place the `GeoLite2-City.mmdb` file in the `proxy-alchemist` directory.

5. **Run Proxy Alchemist**

   You can now run the main script:

   ```
   bash
   python3 proxy_alchemist.py
   ```

   This will launch the interactive menu. If you encounter any errors, please refer to the troubleshooting section or open an issue on GitHub.

Usage

Upon running `proxy_alchemist.py`, you will be presented with an interactive menu. Here's a brief overview of the main options:

- **Change IP (Find & Set Proxy)**: Automatically finds a working proxy from available sources and sets it as your system's proxy. If 'Single Host Mode' is enabled, it will also start a local proxy server and provide Wi-Fi configuration instructions.
- **Start Auto Rotation**: Initiates automatic proxy rotation at a specified interval. You can set a duration for the rotation or let it run indefinitely.
- **Stop Auto Rotation**: Halts the ongoing automatic proxy rotation.
- **Show Current Status**: Displays detailed information about the current proxy, rotation status, local proxy status, and other relevant metrics.
- **Clear Proxy Settings**: Removes all proxy-related environment variables and configurations set by the script.
- **Show Proxy History**: Lists recently used proxies.
- **Manage Favorites**: Add, view, or remove proxies from your favorites list.
- **Tor Integration**: Access options to install, start, stop Tor, set Tor as your proxy, and manage Tor IP rotation.
- **Local Proxy Server**: Manually start or stop the local HTTP proxy server and view connection details.
- **Configuration**: Adjust various settings like maximum latency, protocol preferences, auto-start, and more.
- **Generate QR Code**: Creates a QR code for easy Wi-Fi proxy setup on Android devices, especially useful when using the local proxy server.
- **Test Specific Proxy**: Allows you to test a proxy by providing its IP and port.
- **Show Statistics**: Displays overall traffic statistics and other usage metrics.
- **Help & About**: Provides information about the tool and its features.

GitHub Setup

To share this project and collaborate, you'll need to set up a GitHub repository. Here's how:

1. **Create a New GitHub Repository**
    - Go to GitHub and log in to your account.
    - Click the `+` sign in the top right corner and select `New repository`.
    - Give your repository a name (e.g., `proxy-alchemist`), add a description, and choose whether it's public or private. **Do NOT initialize with a README, .gitignore, or license file** as you already have these locally.

- Click `Create repository`.

2. **Initialize Local Repository and Push to GitHub**

   From your `proxy-alchemist` directory in the terminal, run the following commands:

   ```
   bash
   git init
   git add .
   git commit -m "Initial commit of Proxy Alchemist"
   git branch -M main
   git remote add origin https://github.com/your-username/proxy-alchemist.git
   git push -u origin main
   ```

   Note: Replace `https://github.com/your-username/proxy-alchemist.git` with the actual URL of your newly created GitHub repository.

Contributing

We welcome contributions to Proxy Alchemist! If you have ideas for new features, bug fixes, or improvements, please feel free to:

1. Fork the repository.
2. Create a new branch (`git checkout -b feature/your-feature-name`).
3. Make your changes.
4. Commit your changes (`git commit -m 'Add new feature'`).
5. Push to the branch (`git push origin feature/your-feature-name`).
6. Open a Pull Request.

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