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Creating a VPN

Introduction

Utilized a combination of OpenVPN and Oracle in order to create a VPN.

Important to have your communication secure and private over the internet.

Obfuscates your ip

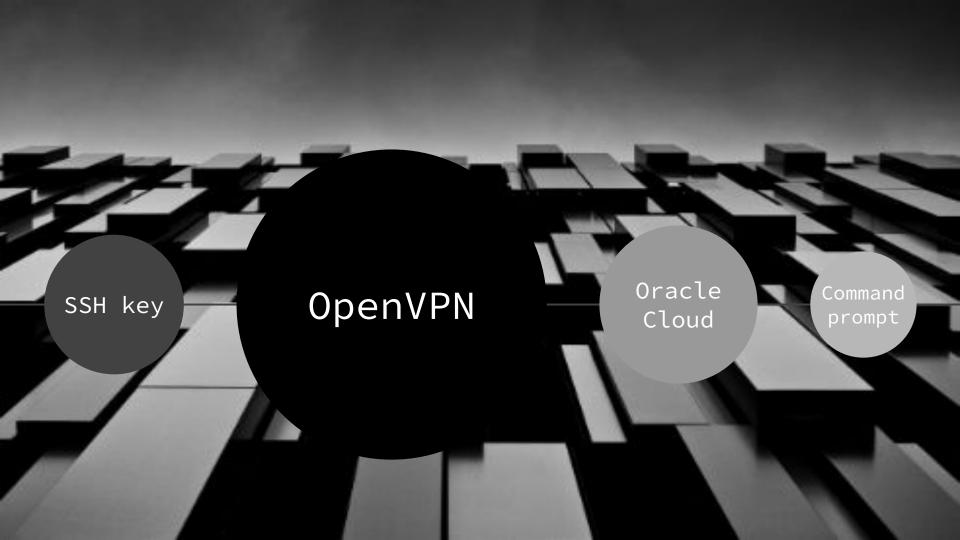Fairly easy to set up.

What is a VPN?

A VPN, a.k.a. *Virtual Private Network* it is a technology that allows you to create a secure and encrypted connection between your device and a remote server(in which can be located in geographical locations from where you are). Effectively masking your actual IP address and making it appear as though you are accessing the internet from the location server

OpenVPN

Primary purpose of using a OpenVPN is..

1) **Privacy & Anonymity**- your activities can't easily be tracked by hackers or 3rd parties
2) **Security**- VPNS provide an added layer security
3) **Bypassing Restrictions**- VPNs cab allow your to access websites,online services or content that might be restricted in your location
4) **Remote access**-Some business companies use as resources

Oracle Cloud Services

Overview

- **Virtual Machine (VM)**
  - Instance used for hosting the VPN server
  - Only running network through it
- SSH Key used
- Ingress rules added

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Challenges Faced

Difficulty creating SSH key on windows

   -Resolved by ensuring only system and administration group have permission to the key file

Issue logging into OpenVPN admin page via browser

   -Resolved by changing the url to the direct /admin login not just ip of the VPN

Slower speed/ Connection issues

Legality & Regulations - some countries might ban or heavily regulate usage

False sense of security- VPNs can enhance privacy and security but they won't protect you from ALL online threats exp malware or phishing attacks

Cost- been used for two weeks and $0.00 so far

Results and Future Enhancements

- Now we have a working VPN we can use a mouse click away
- Not a single cent has been spent so far

- Implement additional security features in the future
  - Multi-factor authentication
- Integrating monitoring and logging for better network management

Demo

Speed Test Result

Internet speed test   ✕

36.5
Mbps download

21.5
Mbps upload

Latency: 80 ms
Server: New York

Your Internet connection is fast.

Your Internet connection should be able to handle
multiple devices streaming HD videos at the same
time.

LEARN MORE   TEST AGAIN

- **Suitable for surfing the internet**
- **Can easily stream 4k videos**
- **Can play games**

Mitigation

- Strong Encryption
- Use Trusted VPN providers
- Regular software updates
- Enable Kill switch
- Multi-Factor Authentication
- Avoid Free VPNs
- Verify Server Locations
- Avoid suspicious websites or downloads

By Implementing these mitigation measures, you can enhance the security and privacy of your VPN usage and minimize potential risks or vulnerabilities

References:

- [How To Guide: Set Up & Configure OpenVPN Client/server VPN | OpenVPN](#)
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