Night Owl Network

Connie Uribe Chavez, Geneva Knott,
Nickolaus Alderete, Sierra Maldonado

Agenda

Team Member Introductions

Problem Domain & Project
Overview

Improvements

Team Process & Documentation

Demonstration

Tests

Q&A

Our Team

- *Connie Uribe Chavez*

- *Nickolaus Alderete*

- *Geneva Knott*

- *Sierra Maldonado*

NIGHT OWL NETWORK

Connie
Uribe Chavez

- **USMC Veteran located in Pensacola, FL.**
- **Previous software development experience**
- **Computer Science B.A.**
- **Enjoy being outdoors**
- **Gardening**

Nickolaus Alderete

- **US Army veteran**
  - **12T- TOPO/ Geodetic engineer**
- **Low Voltage Electrician**
  - **Data/ Security system installs**
  - **CCTV- Installs and programming**
  - **Network room build-outs**
- **Enjoy spending time with my kids**
  - **Connect with me on LinkedIn below**

Geneva Knott

- **Marine Corps Veteran- 0621 Communications**

- **9 yo LE/Criminal Investigator -Violent Crimes w/ Bachelors in Criminal Justice**

- **ITF + Network + CompTia certified- working on Associates in Cyber Defense**

Linked **in**

Sierra Maldonado

- **US Navy Veteran, Seabee**

- **ITF+ and Networking+**

- **Six Sigma White belt in HR**

- **Accepted to ASU Pre-Vet Program**

- **Connect with me on linkedin!**

SEABEES
"CAN DO!"

Problem Domain

Night Owl Network has been tasked with updating the core IT infrastructure of recent GlobeX acquisition called CleanPower.

- Who is CleanPower
    - A young, innovative startup
    - Specializes in developing renewable energy solutions for homes and businesses.
    - Their team of engineers and energy experts works with clients to design and install solar power systems, wind turbines, and other renewable energy technologies.

Our Goal

- ○ Build out new infrastructure and organization which is in line with the rest of GlobeX's holdings.
- ○ Develop a secure solution for data transmission between two networks
- ○ AAA security management
- ○ RADIUS system that raises a captive portal for new network users and authenticates them using AD credentials.

Before Network Topology

Internet

Pfsense Router
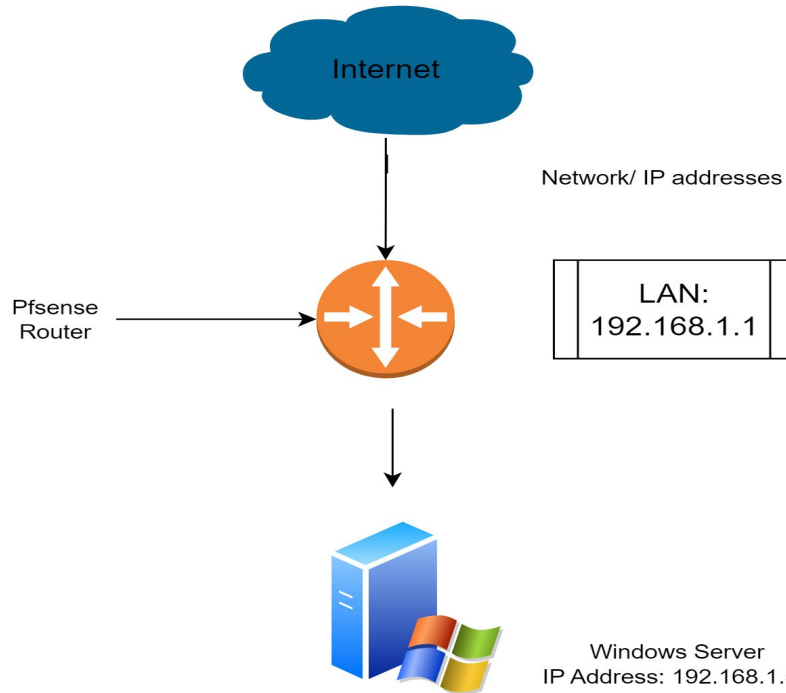
LAN: 192.168.1.1

Network/ IP addresses are subject of change and will update accordingly.
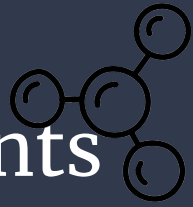
Windows Server
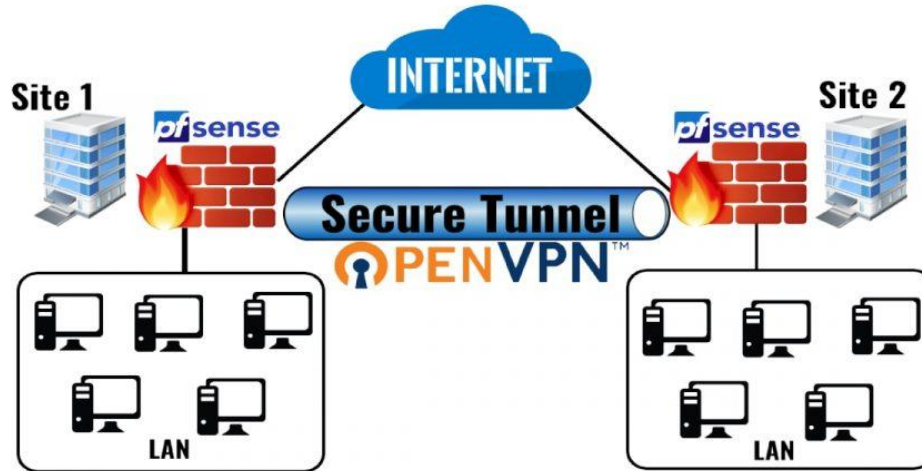IP Address: 192.168.1.51

DNS Server 192.168.1.51

CLEANPOWER

Improvements

Updated by adding a secure OpenVPN tunnel Site-to-site

+ Enables secure communication, provide remote access to resources on a network.
+ Highly scalable and can be easily configured to support large numbers of users and devices.

IT Support Wale. (2019, June 14). OpenVPN pfSense 2.4 Setup in Simple Steps. Retrieved from https://www.itsupportwale.com/blog/openvpn-pfsense-2-4-setup-in-simple-steps/
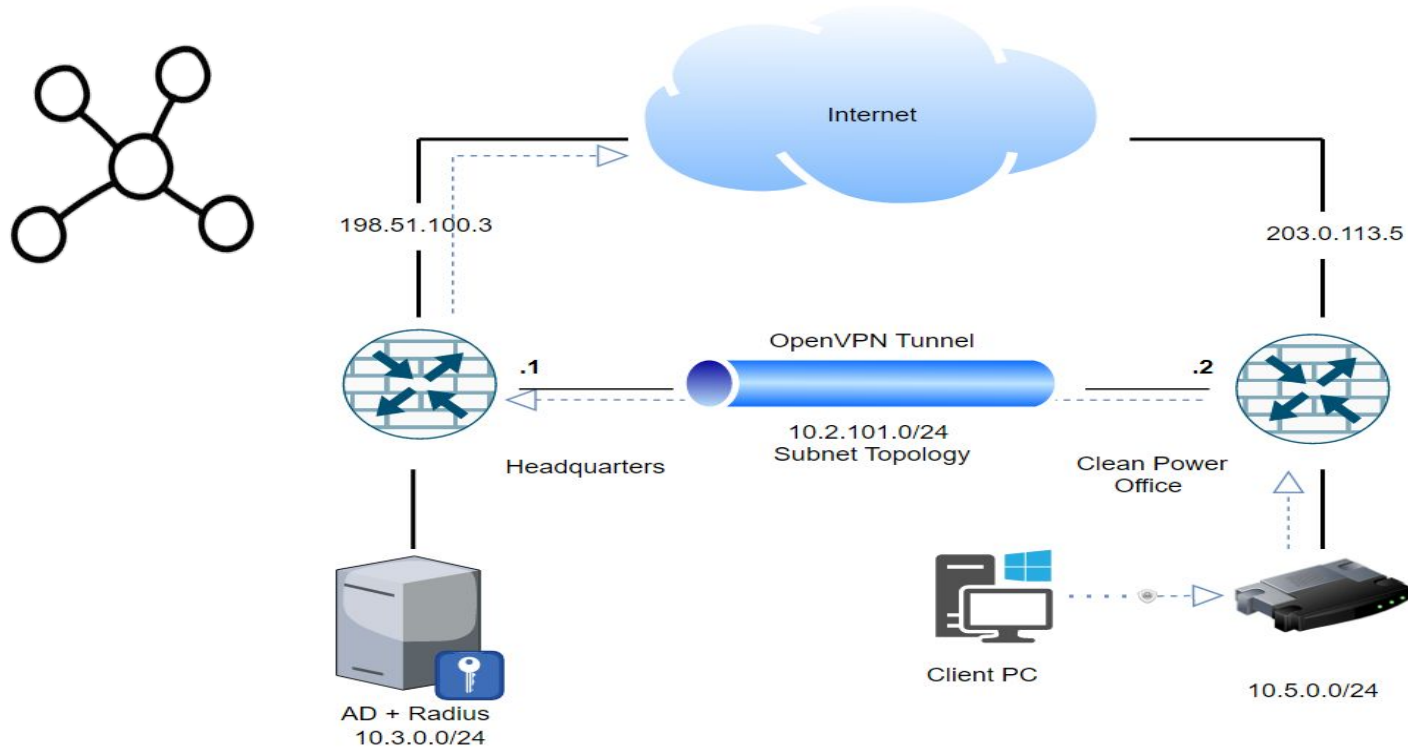
Improvements contd.

Utilized Captive Portal

+ Only authorized users can access a given network
  + provides means of authentication for new users.
+ Enforces security measures
+ Compliance with legal and regulatory requirements

Network Infrastructure Table

VPN ENVIORNMENT SIERRA + GENEVA	DEVICE	IP ADDRESS (LAN)	IP ADDRESS (WAN)	TUNNEL IP ADDRESS (VPN)	DOMAIN NAME / DNS	SERVICE USED	DHCP Range	Subnet Mask
	SERVER	192.168.2.20 /24 (STATIC)	N/A	N/A	Cleanpower / 192.168.2.20	N/A	N/A	N/A
	PFSENSE (A)	192.168.2.1 /24 (STATIC)	192.168.2.1 /24	10.0.2.0	N/A	OPENVPN SERVER, DHCP	192.168.2.100 - 192.168.2.200	255.255.0.0
	PFSENSE (B)	192.168.1.1 /24 (STATIC)	10.0.2.7 /24	10.0.2.0	N/A	OPENVPN SERVER, DHCP	N/A	N/A
	WINDOWS 10- END USER	192.168.1.101 /24	N/A	N/A	N/A	N/A	N/A	N/A
CAPTIVE PORTAL/ RADIUS CONNIE + NICK								
	SERVER	192.168.1.20 /24 (STATIC)	N/A	N/A	Cleanpower / 192.168.2.20	NPAS (NETWORK POLICY and ACCESS SERVICES), DNS, FILE SHARE, AD DS	N/A	N/A
	PFSENSE	192.168.1.1 /24 (STATIC)	192.168.0.133 /24	N/A	N/A	FREERADIUS, DHCP	192.168.2.100 - 192.168.2.200	255.255.0.0
	WINDOWS 10- END USER	192.168.1.101 /24	N/A	N/A	N/A	N/A	N/A	N/A

After Network Topology

Internet

198.51.100.3

203.0.113.5

OpenVPN Tunnel

.1

.2

10.2.101.0/24
Subnet Topology

Headquarters

Clean Power
Office

Client PC

AD + Radius
10.3.0.0/24

10.5.0.0/24

💾 Description of our project 🔚

Our company: Night Owl Network is a company that provides network solutions to other companies struggling with security and setting up an effective network.

Our scenario: Night Owl Network has been tasked with updating the core IT infrastructure of recent GlobeX acquisition called CleanPower. CleanPower is a young, innovative startup that specializes in developing renewable energy solutions for homes and businesses. Their team of engineers and energy experts works with clients to design and install solar power systems, wind turbines, and other renewable energy technologies.

🖥️ PM Tools used 💼

- Trello Board

🔍 Repos 🔑

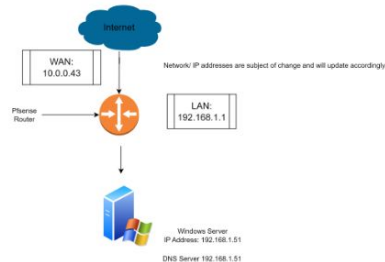`Repo` `Standard Operating Procedures`

`Repo` `Docs`

`Repo` `Scripts`

💬 Slideshow presentation and presentation video 🎤

- Slide show upload
- Vide Presentation upload - TBD

🌐 Topology and other images 🧱

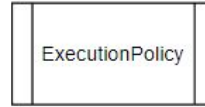The topology the CleanPower was working on before GlobeX

👋 Welcome to our team project

We are 💬 Cybersecurity professionals 🔥 studying at Code Fellows. Night Owl Network is our end of the course presentation where we demonstrate our skills and knowledge we have learned in our Networking class 👀.

🤝 Connect with us

LINKEDIN **GITHUB** 👤 *Nickolaus Alderete*

Army combat veteran. Transitioning low voltage electrician, data/ security installs and network room build-outs. CompTIA ITF+ certified.

LINKEDIN **GITHUB** 👤 *Geneva Knott*

USMC Veteran, Radio Operator with experince in network configuration. B.S Criminal Justice. AAS in Cyber Defense in progress. CompTia certifications in ITF +, and Network +.

LINKEDIN **GITHUB** 👤 *Sierra Maldonado*

US Navy Veteran, Seabee. ITF+ and Networking+. Six Sigma White belt in HR. Accepted to ASU Pre-Vet Program

LINKEDIN **GITHUB** 👤 *Connie Uribe Chavez*

USMC veteran with programming experience. Computer Science B.A. and CompTIA ITF+ certified. Hobbies include being outdoors and gardening.

Process & Documentation

Startup.ps1

Sets the policy to allow
script changes → ExecutionPolicy

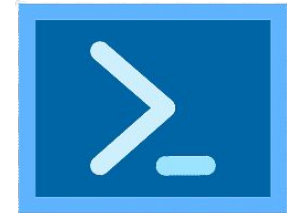Assigns a Static
IP ← Assigns a Static IP so that the
server will be assigned a new
one each time

DNS assignment for ease
of use when connecting → Assigns a Static
DNS
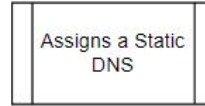
Install Active
Directory ← Installs Active Directory and
tools

Promotes Server to a
Domain Controller → Promote to a
Domain
Controler

Restart
Computer

Starts from a Fresh Server – Building into a Windows Server for your Company

Startup2.ps1

Creates the Org Units, ie:
Sales, HQ, and Operations →

| Creates Organization Units in AD |
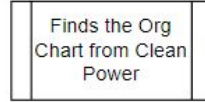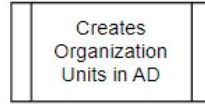
← Goes through the files on the computer to find the Org Chart with employment

| Finds the Org Chart from Clean Power |

Goes through each line on the Org Chart and Creates a new account in AD →

| Creates New Users |

← Checks that each user account has been enabled

| Enables New User |

| Welcome to CleanPower |
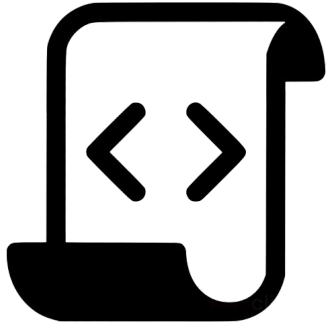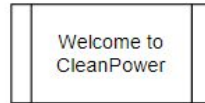
After Reboot

Why OPEN-VPN?

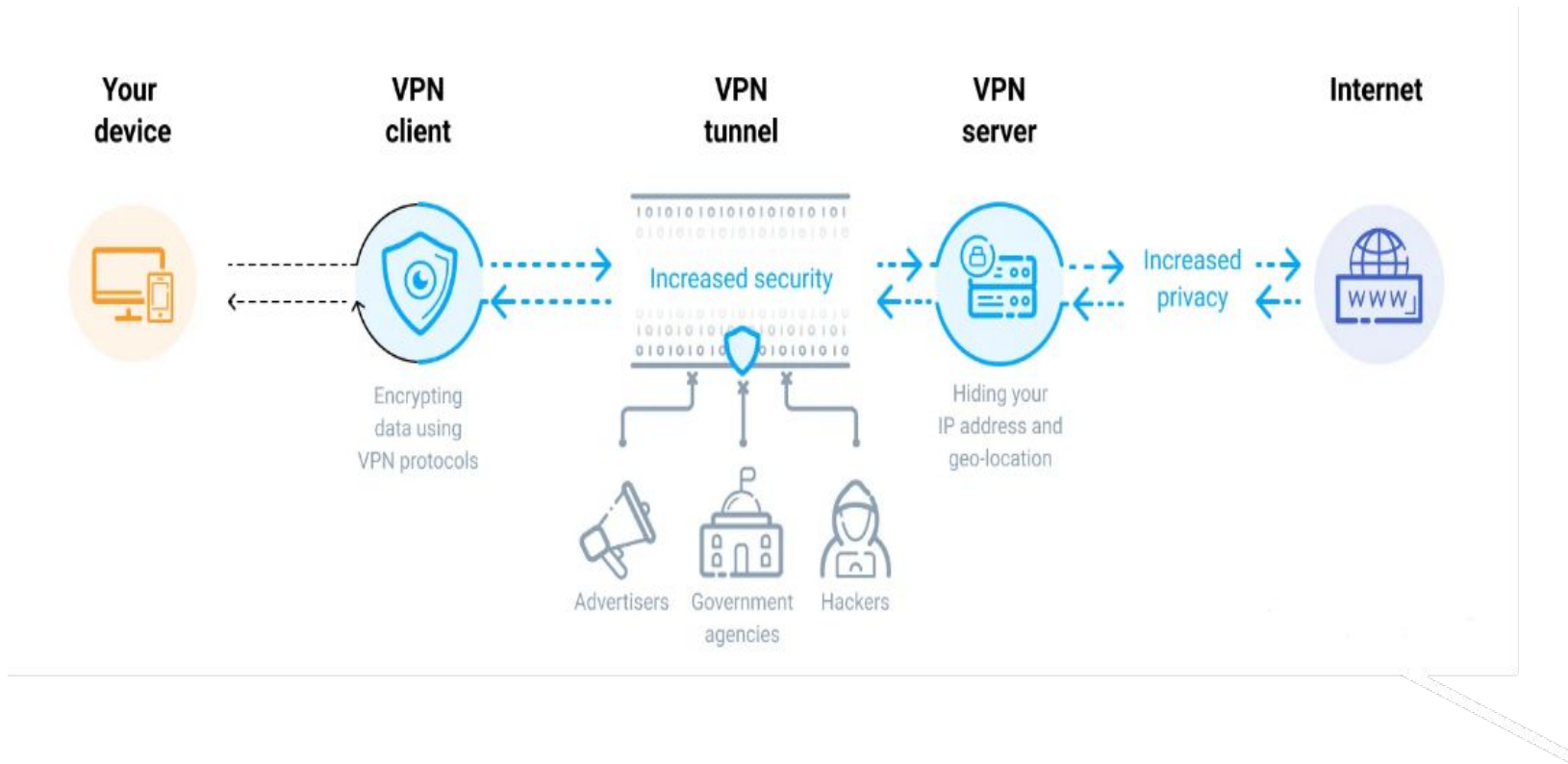It routes all of your network traffic through an encrypted tunnel via the VPN.

Why OPEN-VPN?

Resources & Thanks

We would like to thank the 301 cohort, to include staff, instructors, TA and peers for collectively helping us grow and learn and all the family members who support us!