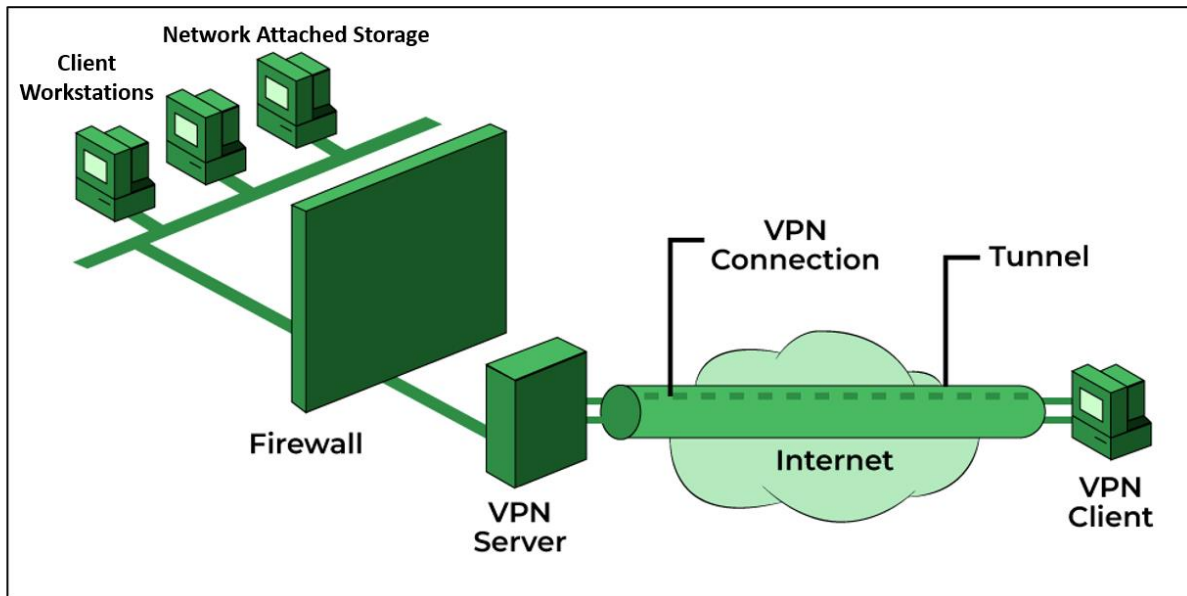# Infrastructure Administration

Recommended Topography

CyFi recommends the organizations infrastructure include a VPN Server, Firewall, Client workstations, and a Network Attached Storage (NAS) device (figure below).

VPN Server

CyFi will implement a self-hosted enterprise grade "OpenVPN Access Server" provided by OpenVPN. Cost to utilize OpenVPN's "Standard" infrastructure is only seven dollars a month and supports 2000 concurrent client workstations.

The organizations OpenVPN Access Server will be installed on a refurbished desktop computer purchased by CyFi. Specifications will include a minimum 12 core 1 GHz Intel Xeon processor and no less than 128MB of RAM. Ubuntu 22.04 LTS will be utilized as a compatible OS.

OpenVPN Access Server system requirements

Firewall

CyFi will purchase a refurbished Netgate 6100 Base PFSense+ Security Gateway to support firewall capability. Supports high-throughput firewall, routing, and VPN applications. This will enable administrators to filter traffic and content coming to and from the organizations internal network.

Network Attached Storage

CyFi will establish a Network Attached Storage server to support sharing files, endpoint backup services, and recovery procedures. CyFi will purchase a refurbished DiskStation DS923+ NAS device (Amazon $600) and two ten TB SSD hard drives. One hard drive will be used for sharing, while the other will be used for backup support & recovery.

DiskStation DS923+ Hardware Data Sheet

The following Desktop utilities will be installed on CyFi Administrator workstations to provide easy access to DS923+ connectivity, configuration, and back up services.

- **Synology Drive** – file sharing, remote access, on-demand file restoration, and backup
- **Synology Office** – collaborate on docs, spreadsheets, and presentations in real time
- **Synology Hyper Backup** – browse, decrypt, extract, and backup data

Synology Knowledge Center

Synology Drive Admin Console process to configure DS923+ to sync & share files

Synology Drive Client process to backup & recover DS923+ data

Client Workstations

CyFi will provide laptops donated by larger organizations for use as client workstations. These client workstations will be capable of hybrid connectivity, allowing them to connect in office as well as remotely when out of office. CyFi personnel will ensure remote desktop services are enabled prior to issuing out computers.

Laptop Sanitization

CyFi will be utilizing [Blancco Drive Eraser for ITAD](#) software to ensure all previous data on donated laptops is safely removed. This same process will be implemented on any laptop or workstation that will no longer be used by the organization.

[Blancco Drive Eraser for ITAD Technical Specifications](#)

[Blancco Drive Eraser Knowledge Base](#)

Below are some of the primary features of Blancco Drive Eraser software:

- Locally or remotely controlled data erasure via Blancco Management Console
- High-speed, simultaneous erasure of multiple drives
- Tamper proof audit trail with digitally signed Certificate of Erasure
- Deployable via Pre-boot Execution Environment (PXE)

Secure Remote Management

CyFi will utilize the Remote Desktop Protocol (RDP) to manage & troubleshoot client workstations. RDP has known vulnerabilities so we will take the steps listed below to provide [RDP connectivity security](#).

- We will utilize self-signed certificates to control user & location RDP access
- Our pfSense firewall will act as a jump host filtering traffic
- RDP connections will only be conducted via OpenVPN connections

Operating System (OS) provisioning packages will be built using the Windows Configuration Designer, which enables admin personnel to modify Windows configurations and security policies and export them as a provisioning package file (.ppkg). Through the use of more advanced tools such as [Bulk Enrollment](#), these provisioning packages can be efficiently installed on multiple workstations simultaneously.

Technology purchase request

Technology purchase requests must be initially submitted in writing to executive management. If deemed appropriate, CyFi personnel will meet with management and the individual who submitted the request to discuss potential solutions and cost.

CyFi fully understands the need to keep costs down, so will focus on the purchase of refurbished equipment from reputable vendors we have established a working relationship with.

CyFi Equipment Vendors:
- [CXtec](#)
- [NewEgg Business - Refurbished](#)
- [2nd Gear - Refurbished](#)