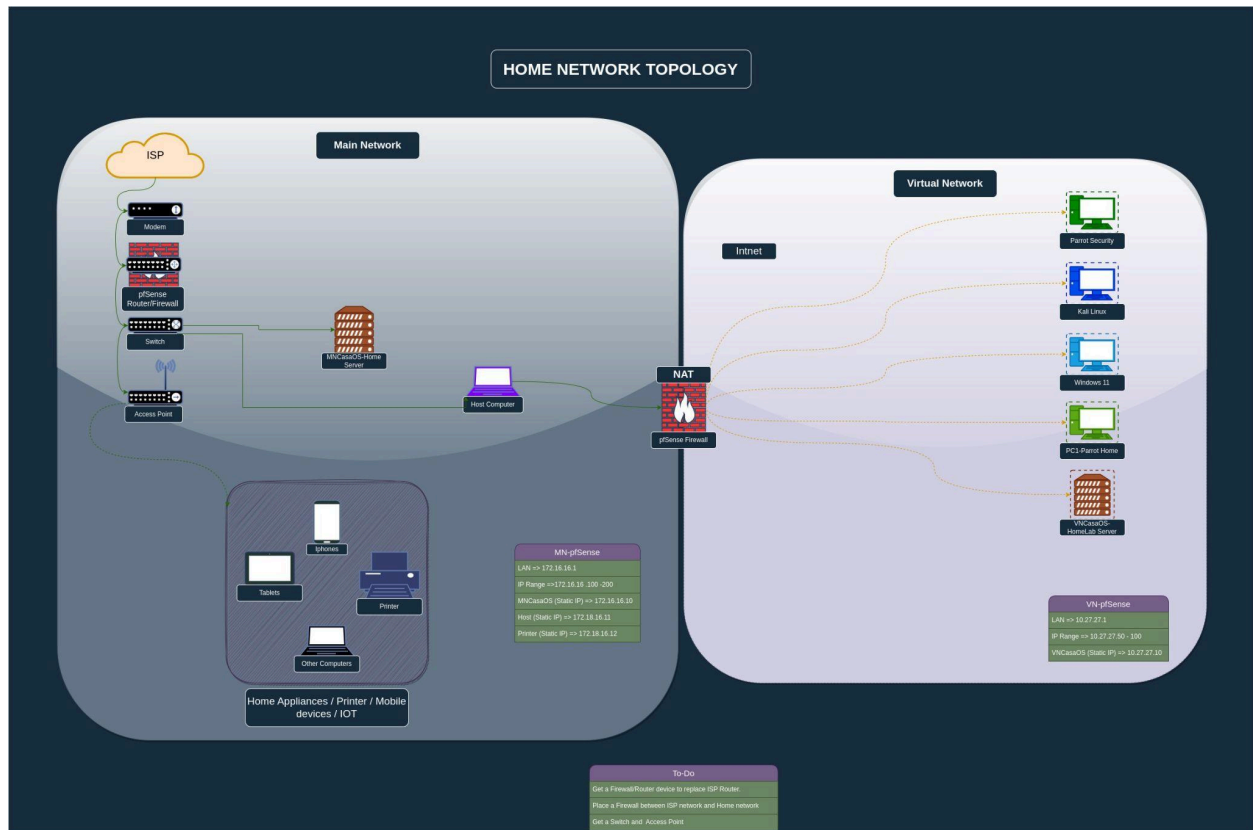


# Detection & Monitoring Lab

## Project Description

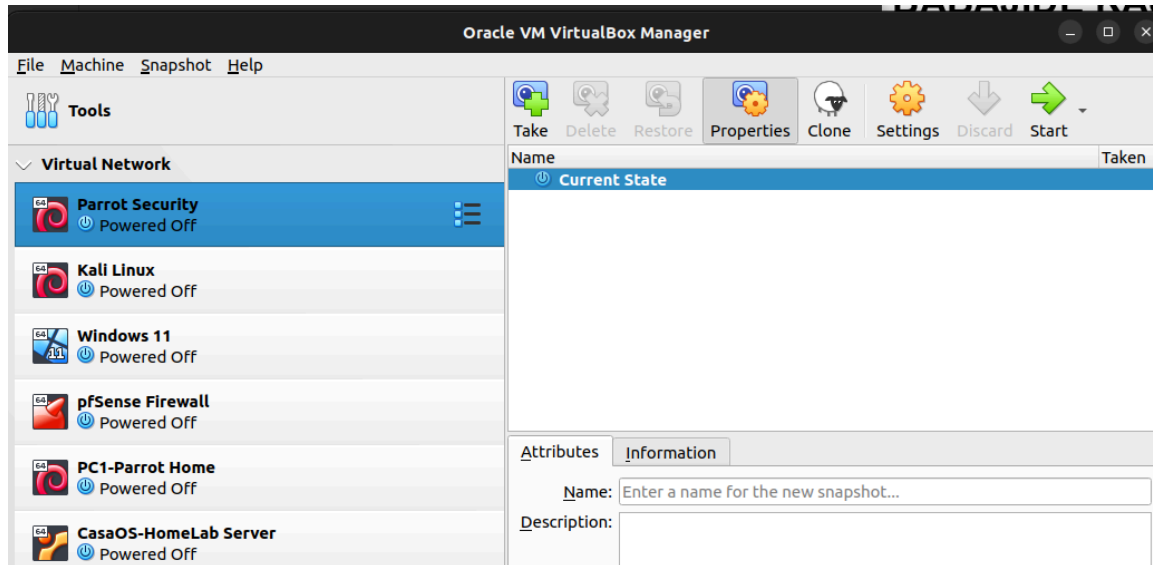
Design a virtualized homelab network within my home network, but detached from it. Utilize the virtual network to test vulnerabilities and practice threat detection.

# Network Topology

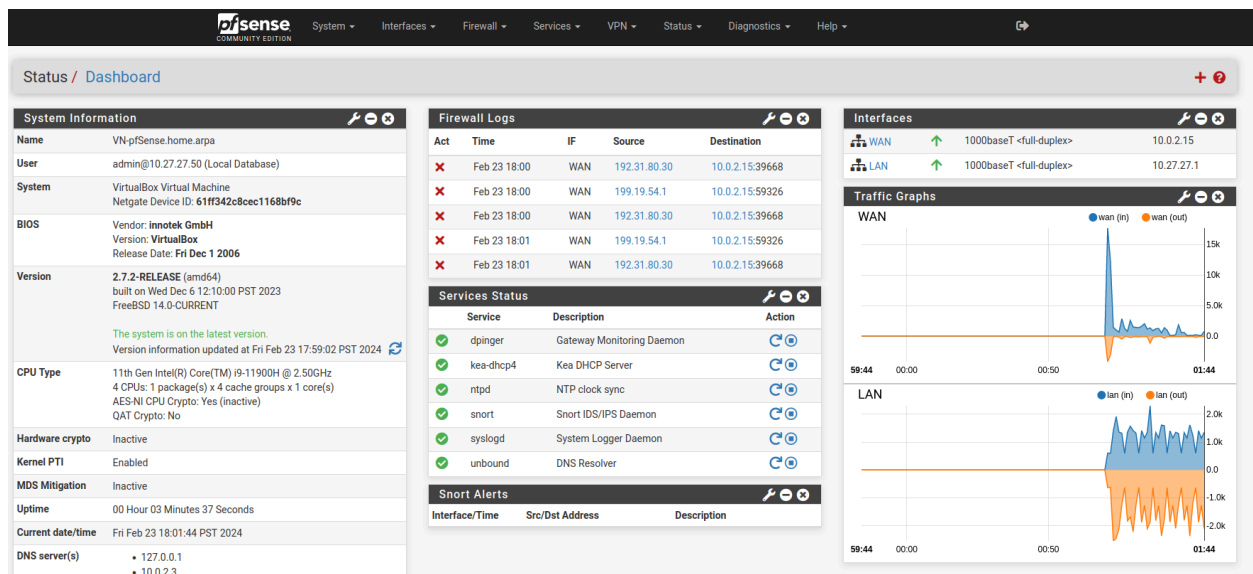


An overview of the network design; home network with the virtual network within it.

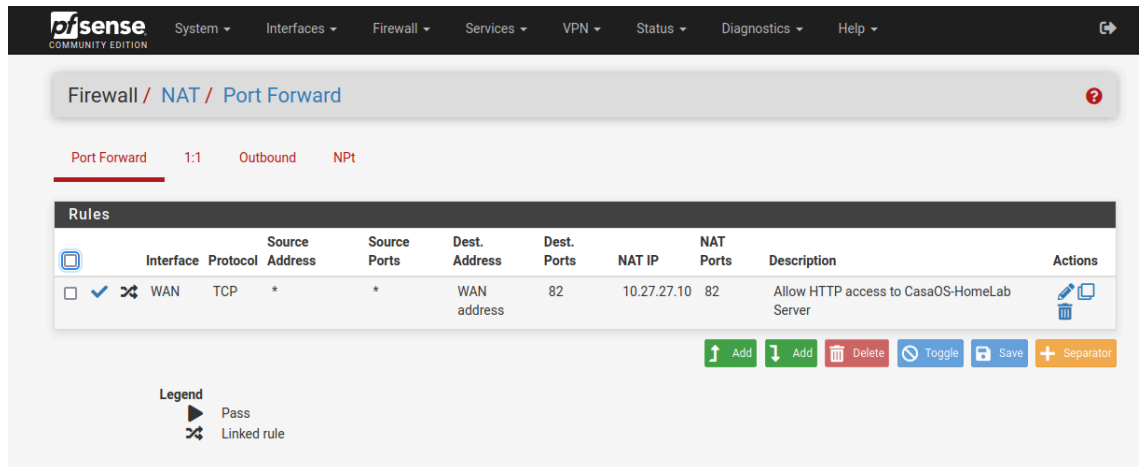
## Virtual Machines within the Virtual Network



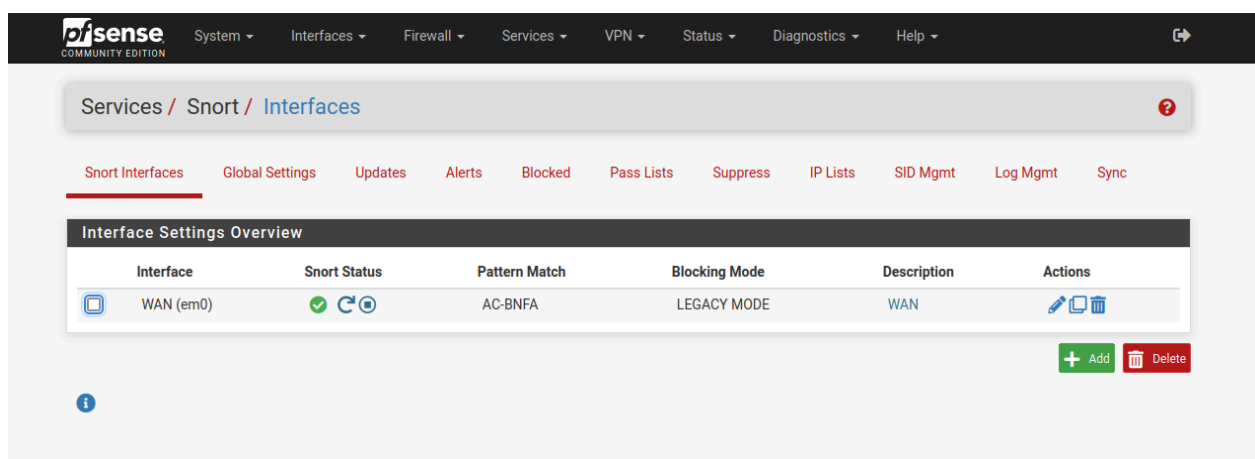
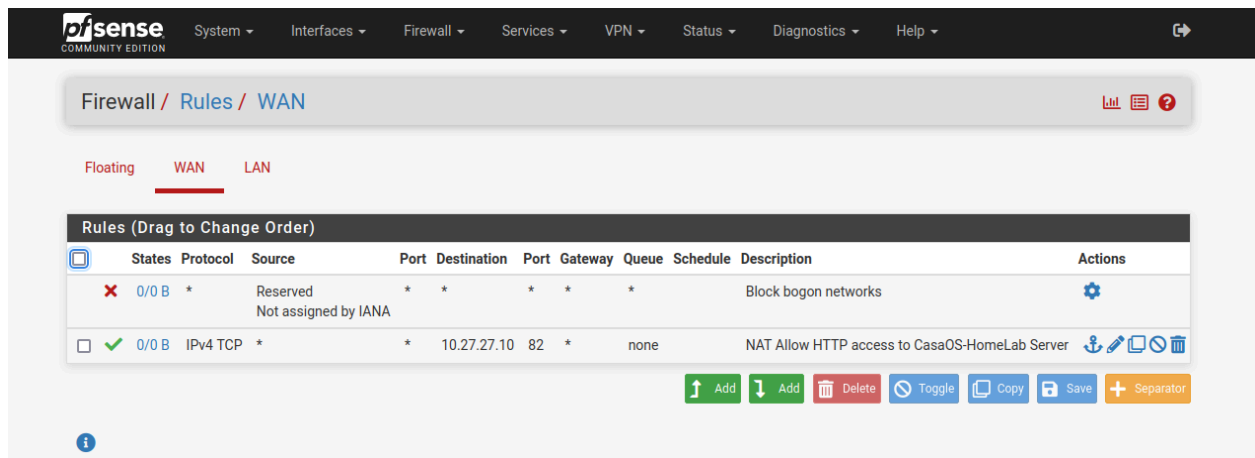
Created VMs with the virtual network. The VMs include Pfsense firewall, CasaOS-HomeLab Server, pen-testing systems, and target systems.



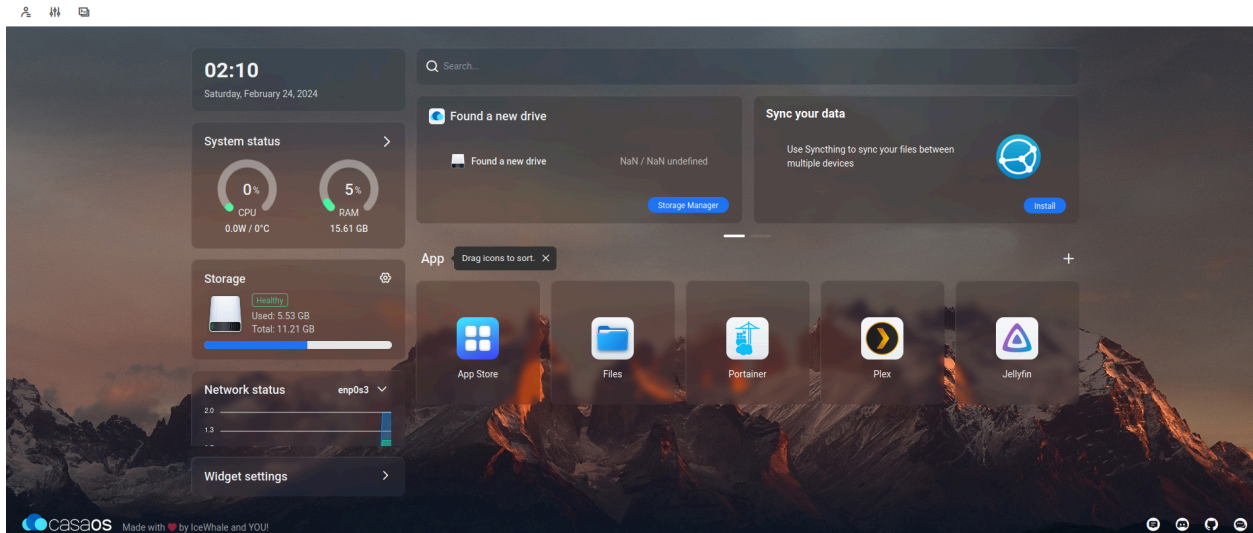
Pfsense Firewall Dashboard



Port forwarding configurations to access CasaOS-HomeLab server from out the virtual network



Configuration of firewall rules and Snort for Network IDS/IPS.



CasaOS-HomeLab Server Dashboard running on Ubuntu Server operating system.

## Summary

The goal was to examine, test vulnerabilities, and practice threat detection on target systems within the virtualized network. Running port scans for open ports, and gathering information for potential vulnerabilities.