

Home Lab 2024

High Level Overview

Physical Network Layer All Unifi (Unless otherwise specified)

Basement:

- UDM Pro
- Switch 8 PoE 60 Watt
- U6 Lite (Access Point)

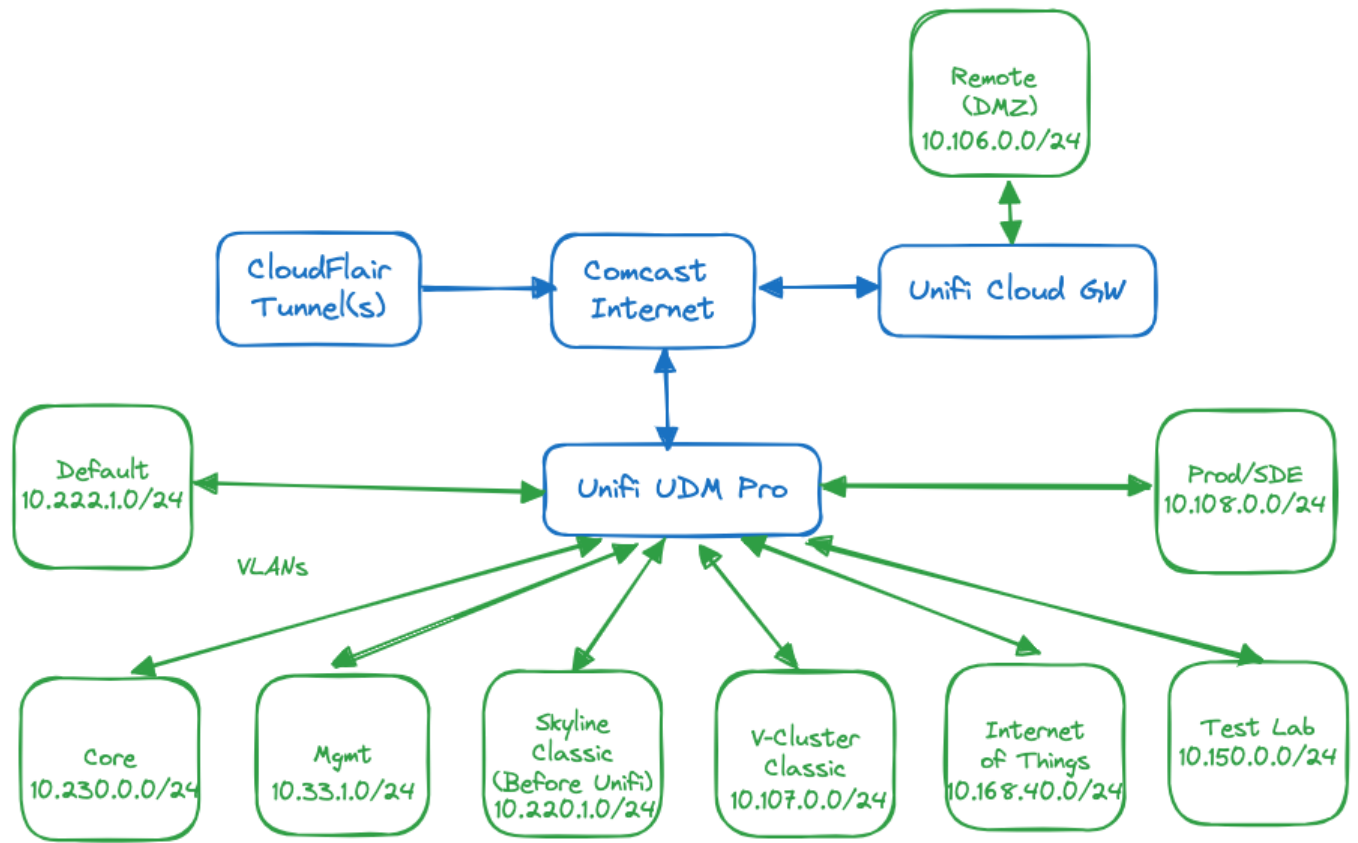
Main Level:

- Office USW 24
- Cloud(Lab) USW 24
- 10GBE SFP+ USW Aggregation
- U6 Pro (Access Point)
- MikroTik CRS309 10GBE SFP+ 8 Port

Upstairs:

- Switch Lite 8 PoE
- Access Point AC Lite

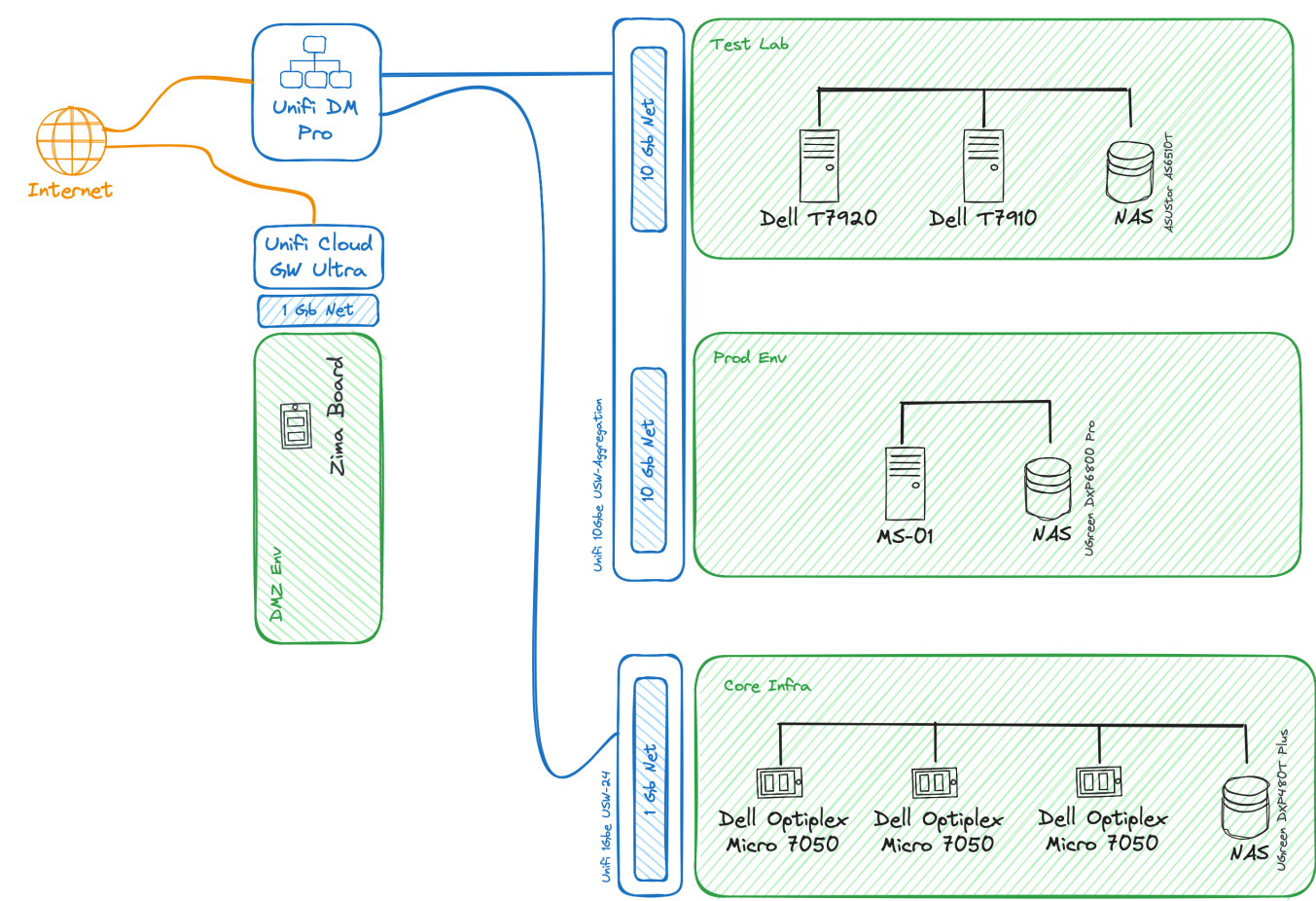
Network Diagram



Default	10.222.1.0/24	VLAN: 1
Core	10.230.0.0/24	VLAN: 230
Management	10.33.1.0/24	VLAN: 33
Skyline Classic	10.220.1.0/24	VLAN: 220
Remote (DMZ)	10.106.0.0/24	VLAN: 106
V-Cluster (Classic)	10.107.0.0/24	VLAN: 107
Production SDE	10.108.0.0/24	VLAN: 108
Test Lab	10.150.0.0/24	VLAN: 150
InternetOfThings	192.168.40.0/24	VLAN: 40

Environments/Domains/VLANs

Physical Layer



Default Environment

Subnet: 10.222.1.0/24
DNS Domain: None
Compute: 1 or 2 PIs for DNS

This subnet consist of newtworking equipment and makes up the "backbone" of the network. Will also have 1 - 2 DNS Appliances (PIs)

Default Environment

Subnet: 10.222.1.0/24

DNS Domain: *.infra.ernal.wallyworld.lan

Compute: None

This subnet consist of the backbone networking equipment

Core Domain

Subnet: 10.230.0.0/24

DNS Domain: *.core.skyline-lab.com

Compute:

- 3 Node Proxmox HA Cluster (Low Power - Dell Micro)
- NAS - All Flash UGreen (Need Stand in till end of June)

Power: Always On

Virtual Compute:

- Docker Host (docker.core.skyline-lab.com)
- DNS2 (dns2.core.skyline-lab.com)
- Rancher (rancher.core.skyline-lab.com)
- Proxmox Backup Server (pbs.core.skyline-lab.com)

This subnet consist of services that are critical and shared for all environments. These are:

- Internal DNS (Source of Truth)
- User Auth (LDAP)
- Shared File Services
- Outgoing Email
- Homepage
- Root CA (ACME)
- Password Manager
- SSL Reverse Proxy
- Cloud Storage (Sync)
- Proxmox Backup Server (On NAS)

Cluster Notes:

Use 3 Dell Optiplex Micro 7050 (64GB, 1TB NVMe - 2TB Data). Single NIC. Ceph Cluster (Maybe)

Production Software Development Env (SDE) Lab Domain

Subnet: 10.108.0.0/24

DNS Domain: *.sde.skyline-lab.com

Compute:

- Single Proxmox Node
 - Minisforum MS-01
 - CPU: i9-13900H 14c/20t
 - RAM: 64GB
 - Boot/Data: 1TB NVMe
- NAS

Power: Always On

This is production quality Software Development Environment. Described [PBI Lab](#)

Test Lab Domain

Subnet: 10.150.0.0/24

DNS Domain: *.test.skyline-lab.com

Compute:

- 2 Proxmox Node Cluster
 - Dell T7920
 - Dell T7910
- NAS

Power: On Demand (Wake on LAN)

Remote/DMZ

Subnet: 10.106.0.0/24

DNS Domain: *.cloud.skyline-lab.com

Compute:

- ZimaBoard
- NAS

IOT Environment

Subnet: 192.168.40.0/24 DNS Domain: *.iot.wallyworld.lan

Compute: None

This subnet consist of untrusted internet enabled devices.

Management Subnet

Subnet: 10.33.1.0/24 DNS Domain: *.mgmt.wallyworld.lan

Compute: None

This subnet consist of Device Management Interfaces, KVMs, Lights out Management (iDRAC)

Internal Environment

Subnet: 10.220.1.0/24

DNS Domain: *.internal.wallyworld.lan

Compute: None

This subnet consist of User's client devices. For example my laptop and other various workstations

Backup Strategy

Will use a NAS device to keep onsite backups. Most workloads will be running on Proxmox, there for VM Level backups will be performed via Proxmox Backup Server. I have a old QNAP NAS that cannot run VMs but can be a NFS server. Will use that plus a front end server to run Proxmox Backup Server.

For file level backups - will use Restic <https://restic.net>