Homelab & Stuff

Folke Johansson

Where the hell do I start?

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Good question!

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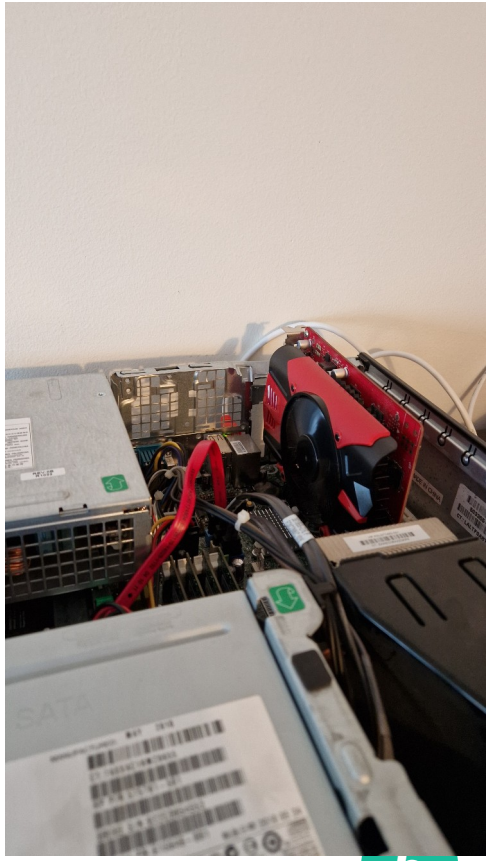
- **Buy something cheap and old of Blocket or similar**

My first Homelab

2 Core – Hyperthreaded
8gb DDR3 RAM
SSD + HDD Storage



My first Homelab

2 Core – Hyperthreaded
8gb DDR3 RAM
SSD + HDD Storage

Time to Grow!

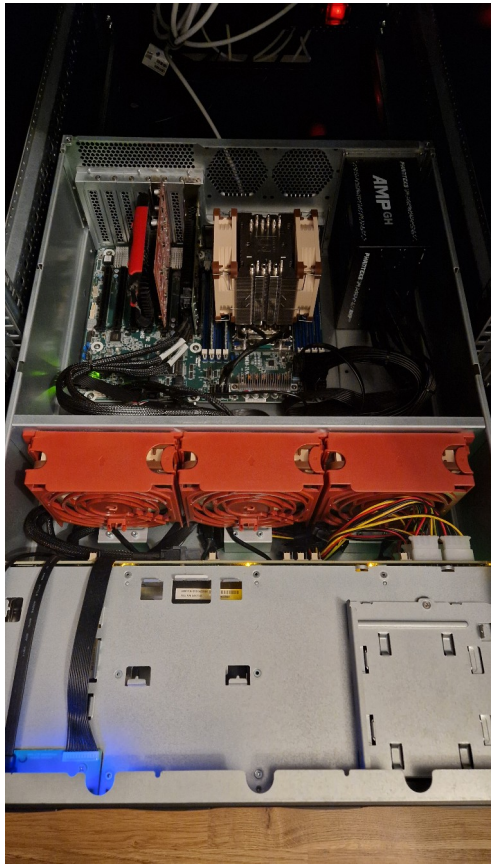
Homelab Grows

Homelab Grows

Homelab Grows

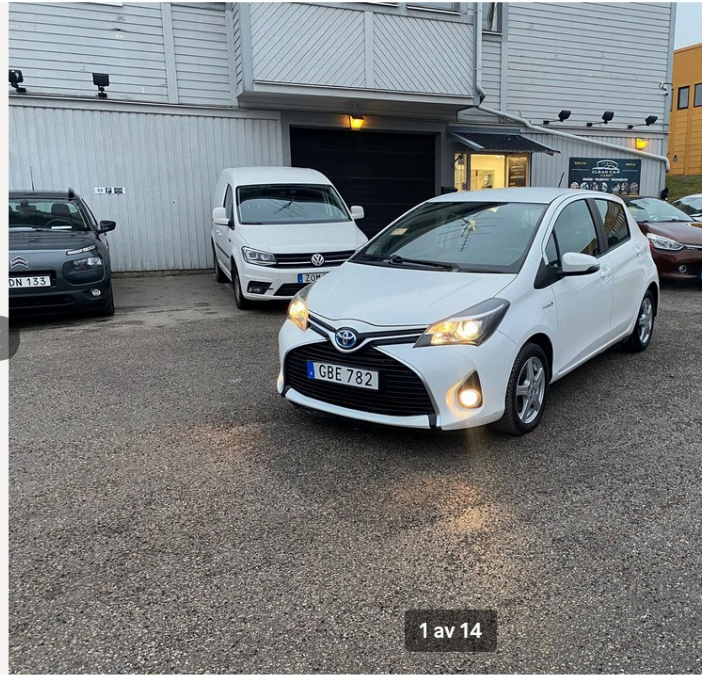
Where are we now?

Today’s Homelab - Asgard



- 32 Core Epyc 7542 @2.9-3.4GHz
- 128GB DDR4@3200MHz ECC
- 20x SAS3 Connections

Today’s Homelab - Asgard



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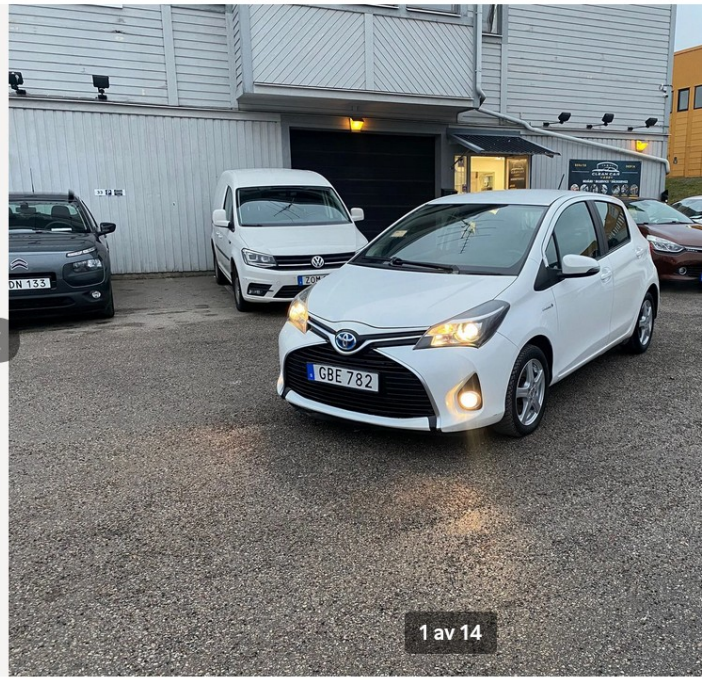
Upplands Väsby (hitta.se)

Toyota Yaris Hybrid e-CVT Active Eu6

Today’s Homelab - Asgard



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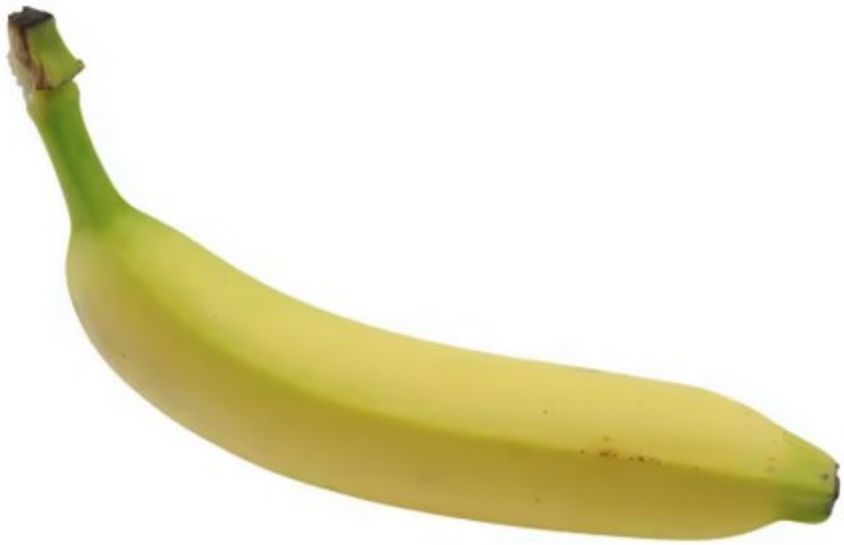


3222 kg

Cornerstones of Homelabbing

- Storage
- Networking
- Virtualization

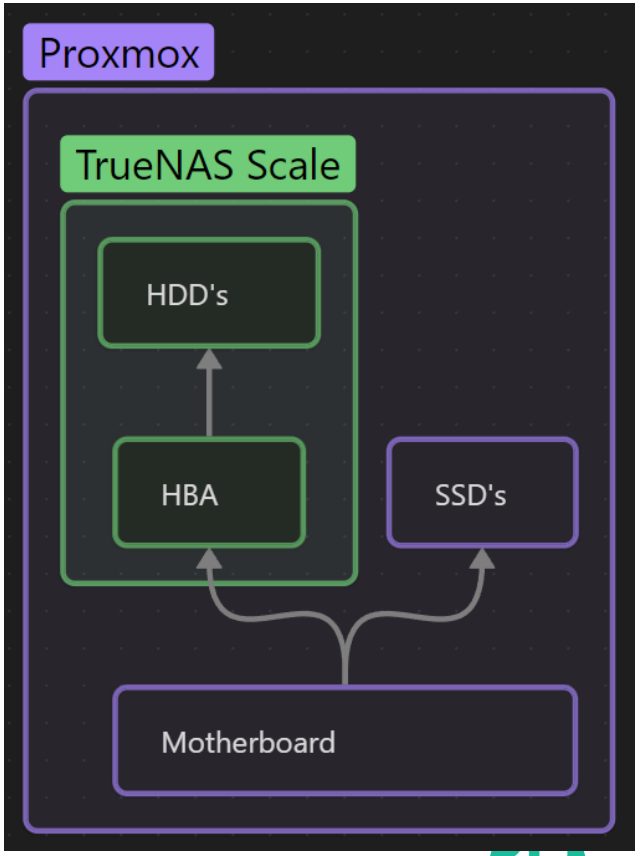
Storage

Storage

Virtualized network storage

Fast local storage

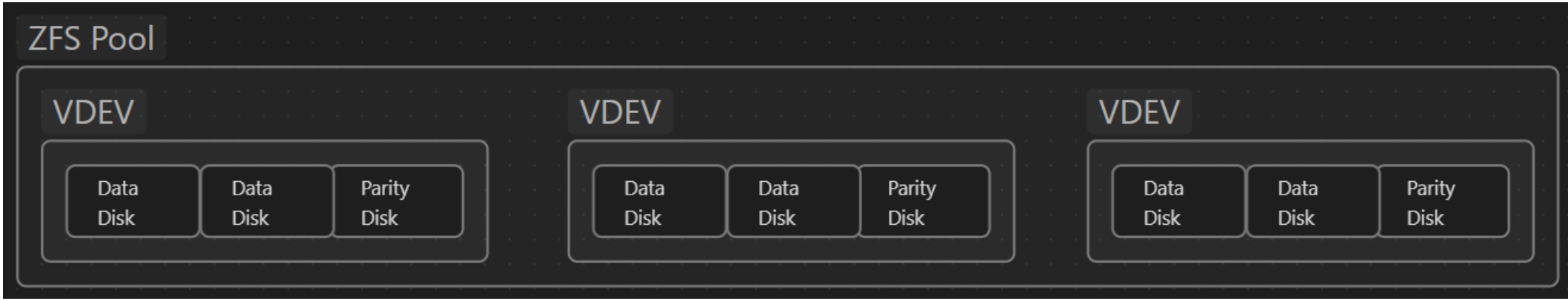
HBA (it mode)



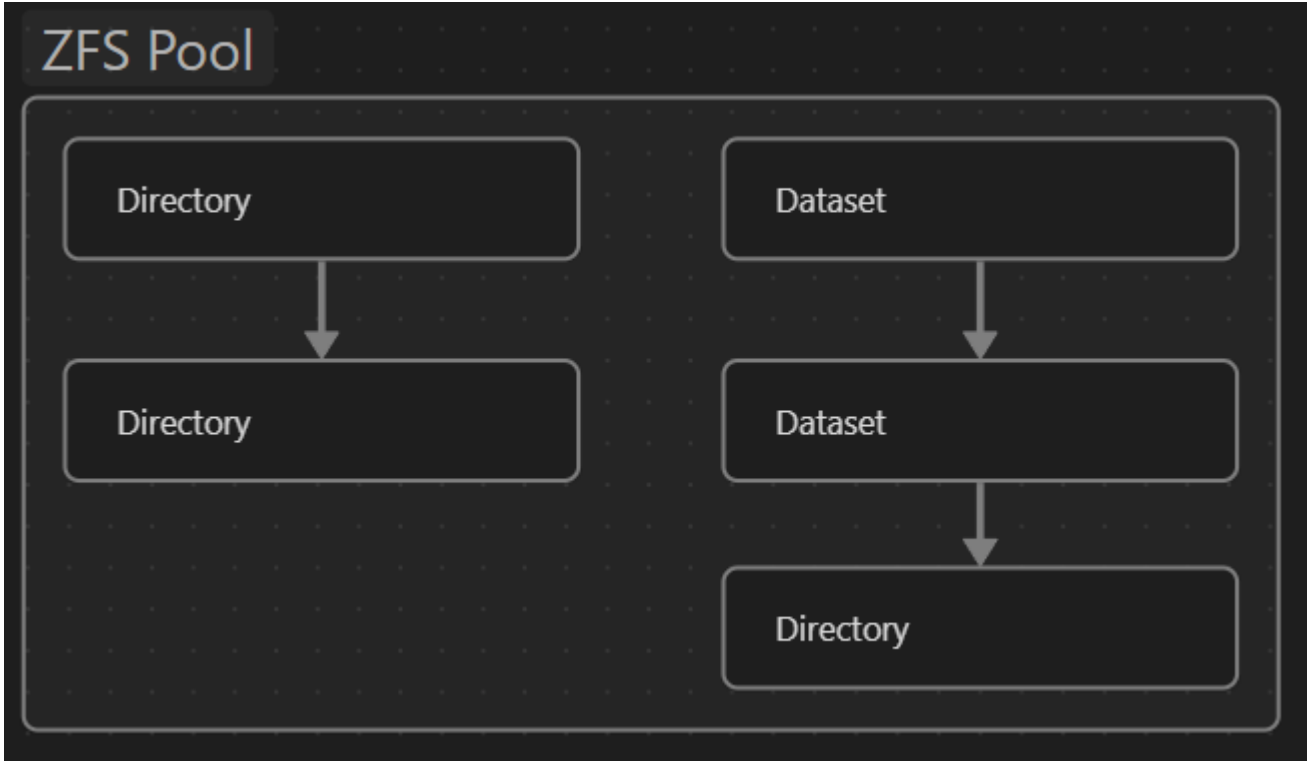
Storage – ZFS


Mirrored
Data Disk
Data Disk
RAID-Z1
Data Disk
Data Disk
Parity Disk

Storage – ZFS


ZFS Pool
VDEV
Data Disk
Data Disk
Parity Disk
VDEV
Data Disk
Data Disk
Parity Disk
VDEV
Data Disk
Data Disk
Parity Disk

Storage – ZFS



Storage – ZFS

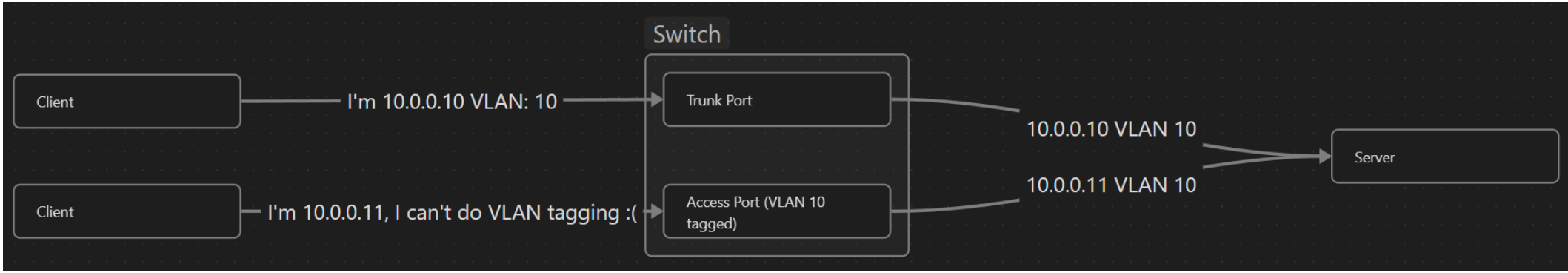
To many drives for a single RAIDz group?

Use dRAID :)

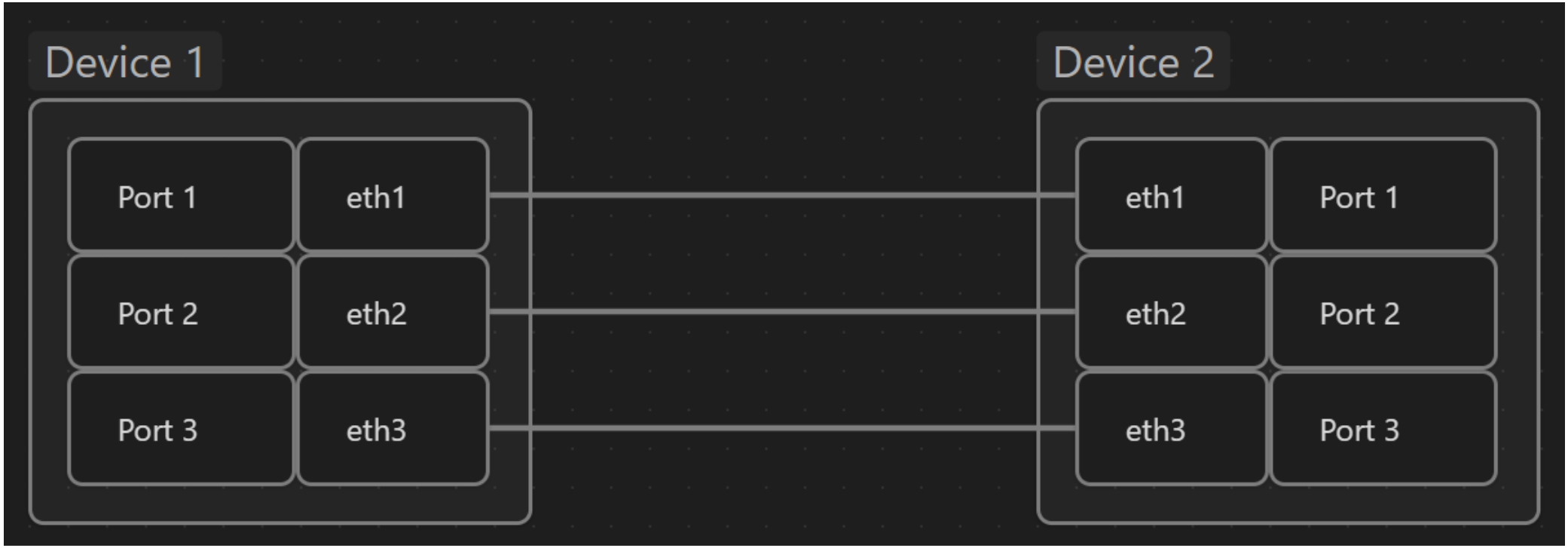
ChatGPT’s interpretation:

Networking

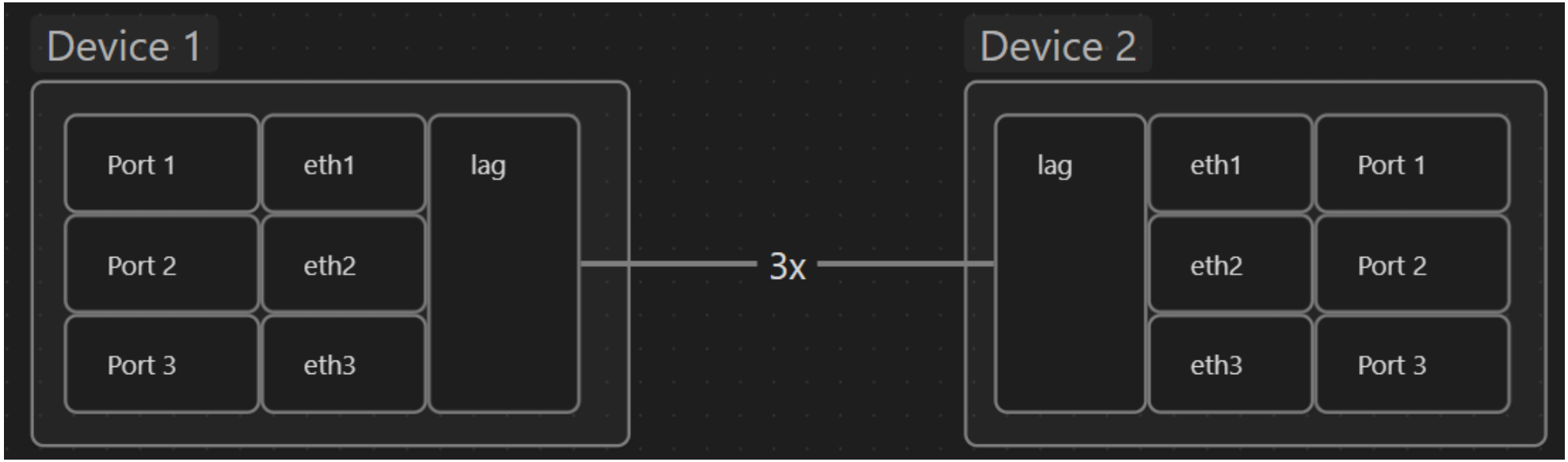
Networking – VLAN trunk and access ports



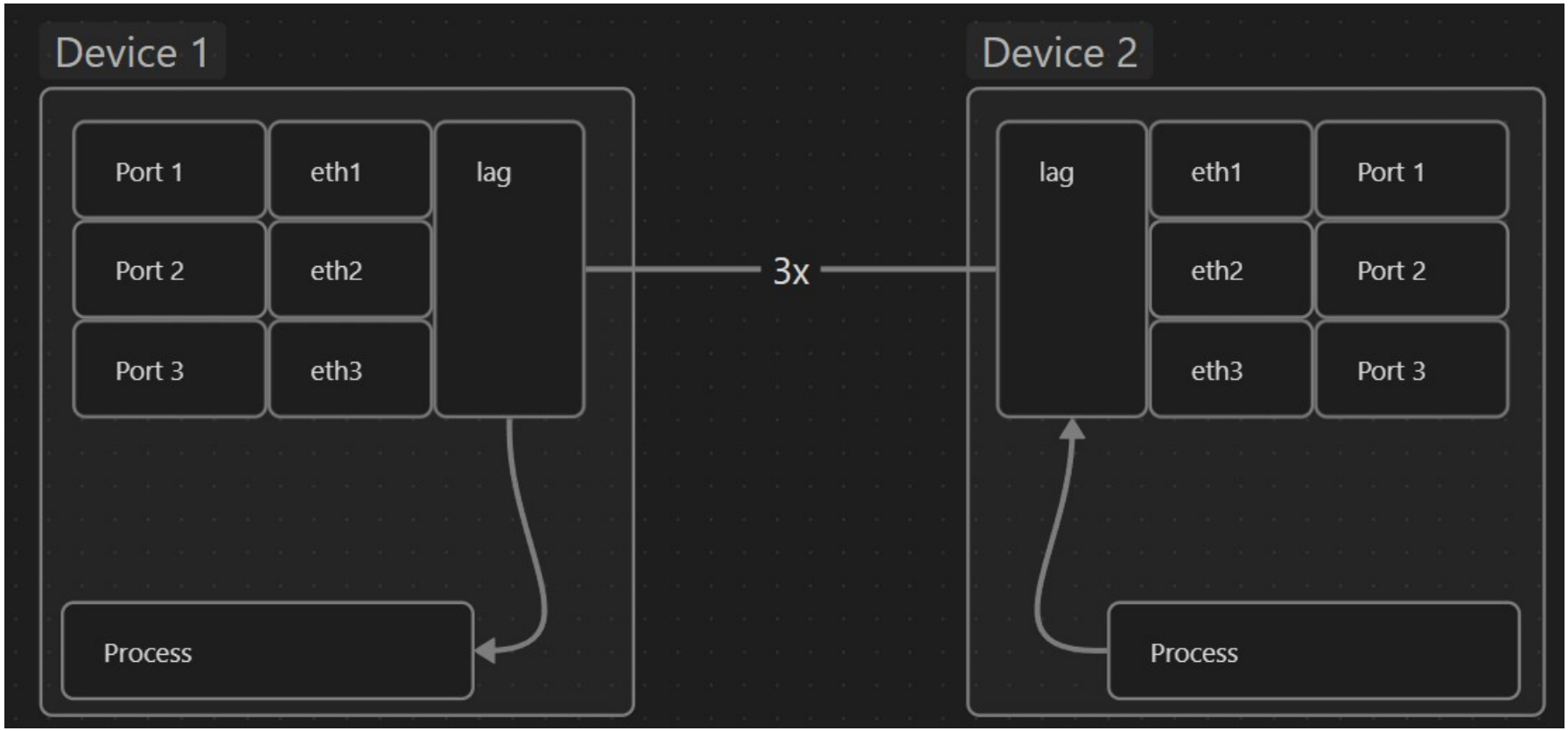
Networking – LAGs



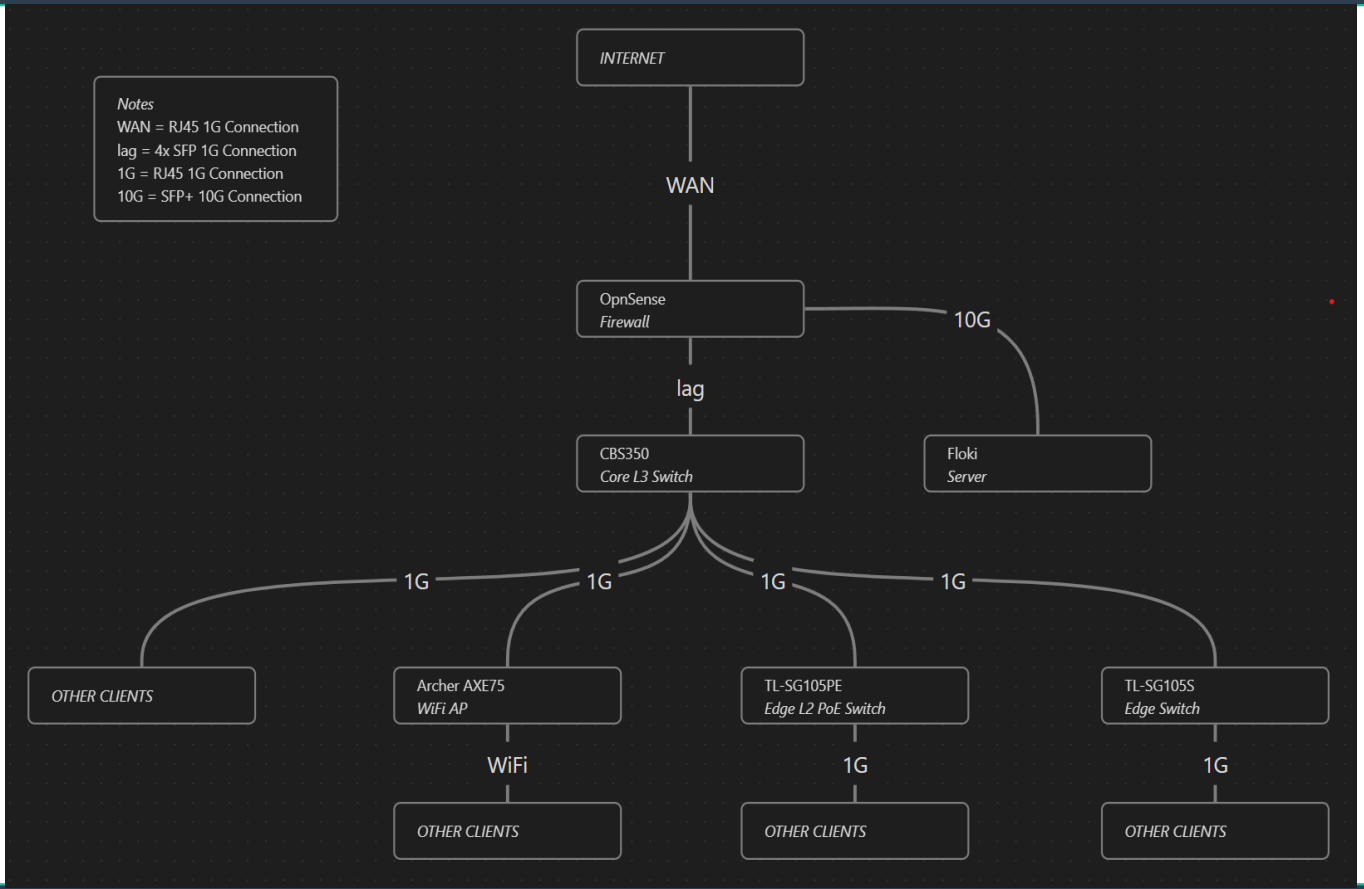
Networking – LAGs



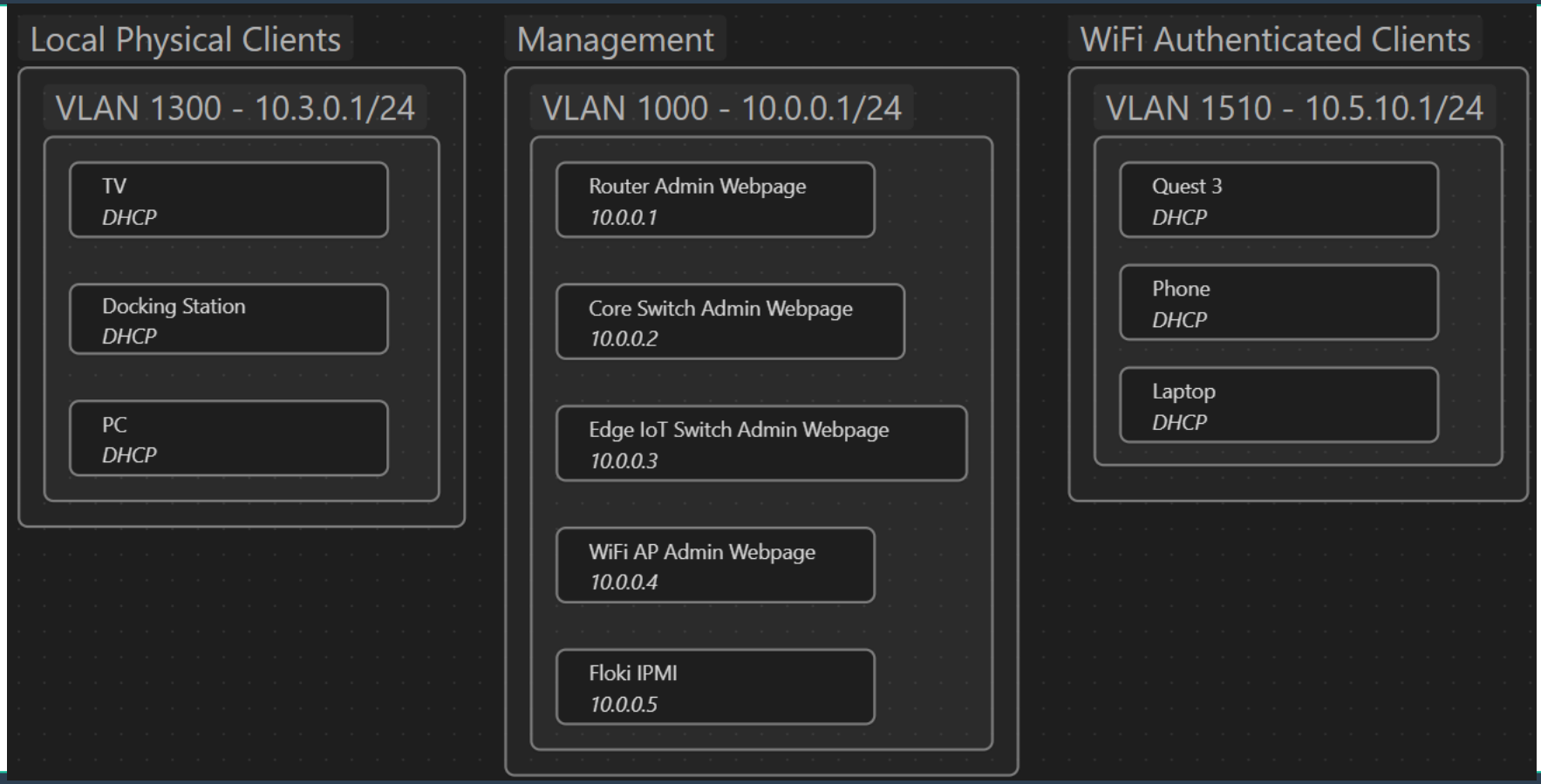
Networking – LAGs



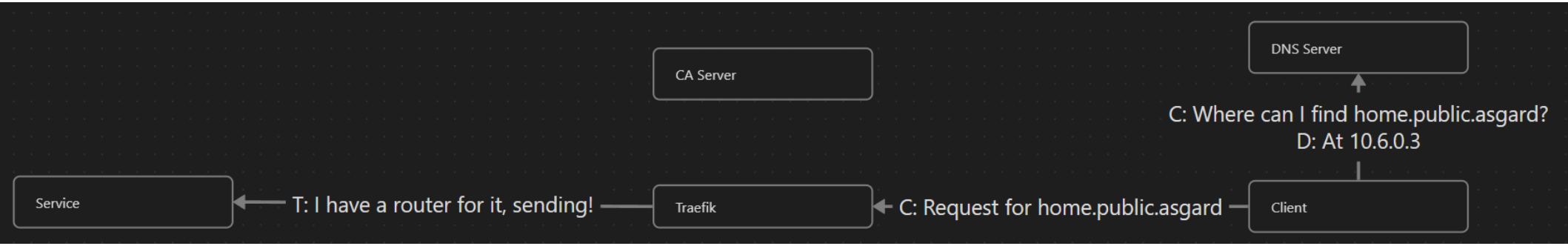
Networking


Notes
WAN = RJ45 1G Connection
lag = 4x SFP 1G Connection
1G = RJ45 1G Connection
10G = SFP+ 10G Connection
INTERNET
WAN
OpnSense
Firewall
10G
lag
CBS350
Core L3 Switch
Floki
Server
1G
1G
1G
1G
OTHER CLIENTS
Archer AXE75
WiFi AP
TL-SG105PE
Edge L2 PoE Switch
TL-SG105S
Edge Switch
WiFi
1G
1G
OTHER CLIENTS
OTHER CLIENTS
OTHER CLIENTS

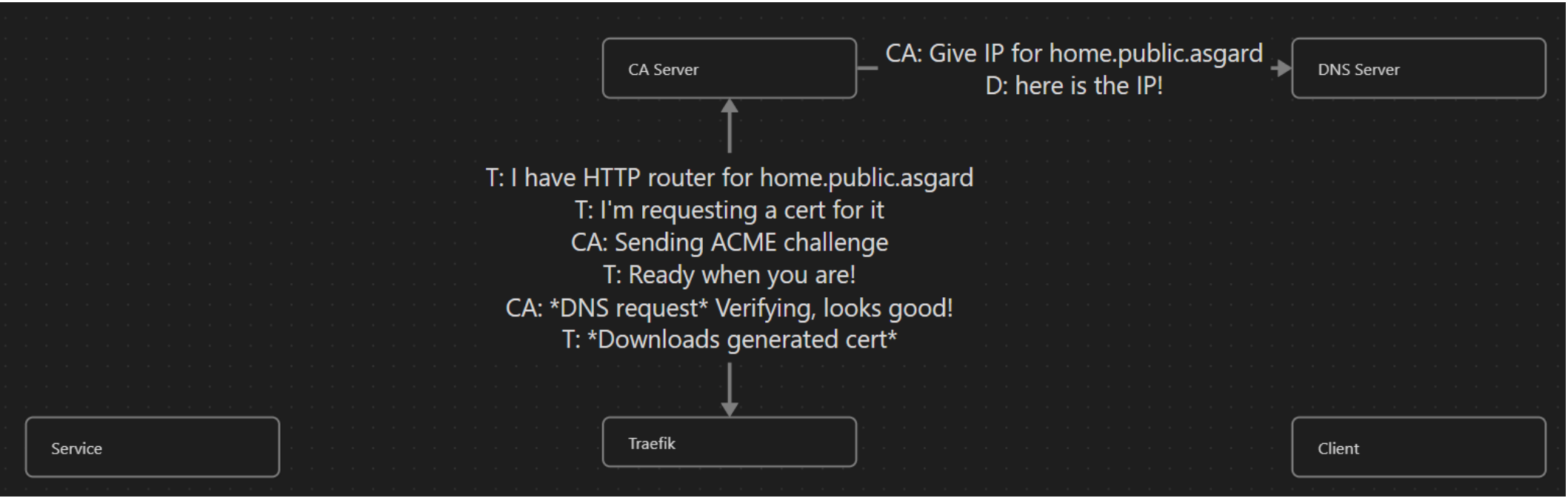
Networking


Local Physical Clients
VLAN 1300 - 10.3.0.1/24
TV
DHCP
Docking Station
DHCP
PC
DHCP
Management
VLAN 1000 - 10.0.0.1/24
Router Admin Webpage
10.0.0.1
Core Switch Admin Webpage
10.0.0.2
Edge IoT Switch Admin Webpage
10.0.0.3
WiFi AP Admin Webpage
10.0.0.4
Floki IPMI
10.0.0.5
WiFi Authenticated Clients
VLAN 1510 - 10.5.10.1/24
Quest 3
DHCP
Phone
DHCP
Laptop
DHCP

Networking – A service perspective



Networking – A service perspective



Network Schmetwork

IP done Quick! (IPv4)

An IP is 32 bit divided into 4 bytes separated by .

10.0.0.0 → 00001010.00000000.00000000.00000000

/0-32 at the ends specifies how many bits are “locked”

10.0.0.0/24 means the first 24 bits are locked so only the last byte can be changed

10.0.0.0/24 → 10.0.0.0 to 10.0.0.255

The above shows how a network range or “subnet is specified”

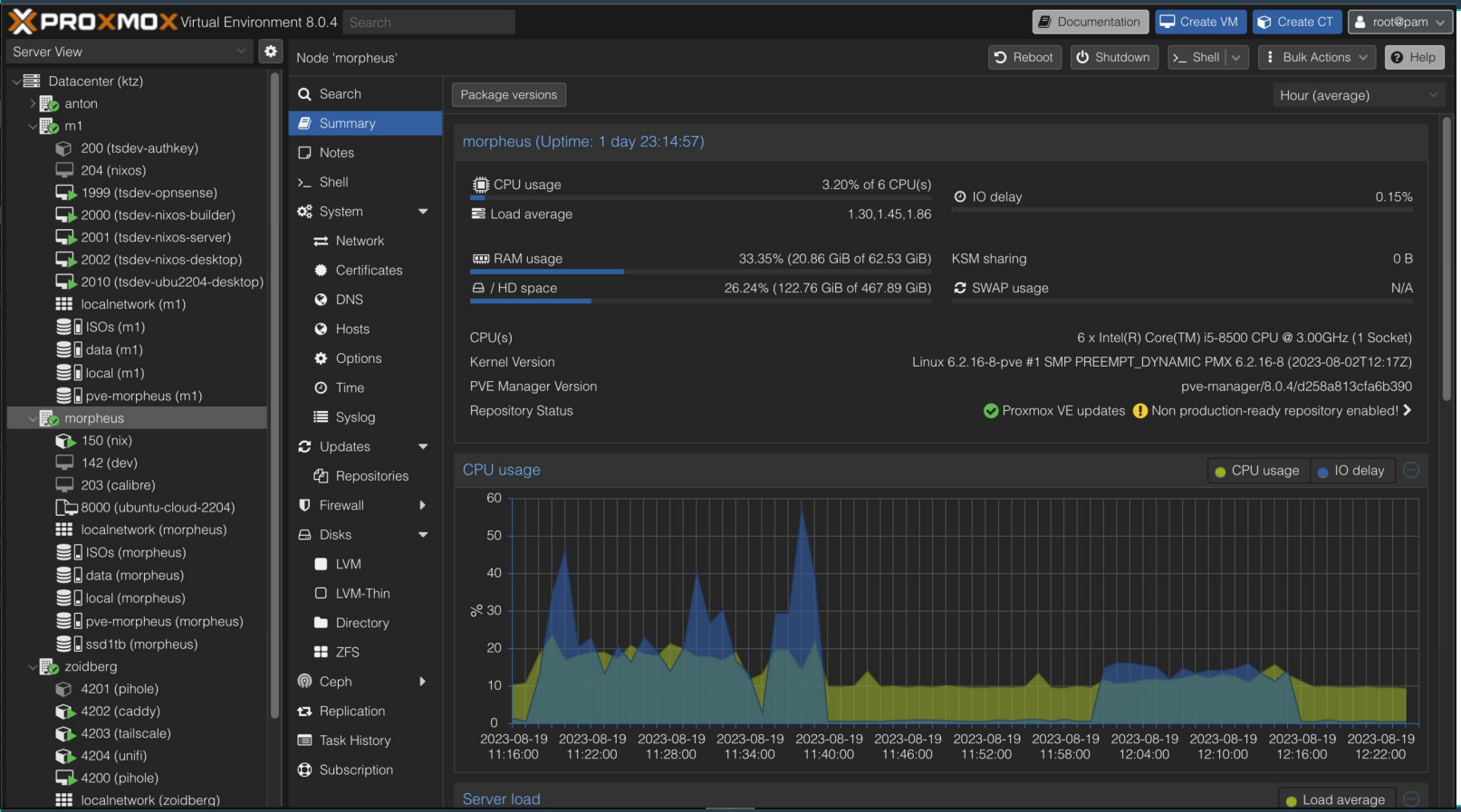
Virtualization

Virtualization – Hypervisors

Type 1
- Proxmox
- VMware vSphere
- Microsoft Hyper-V

Type 2
- VirtualBox
- VMware fusion

Virtualization – Proxmox



There’s like 50 Vms!?

Virtualization – Terraform

Virtualization – Ansible and Terraform

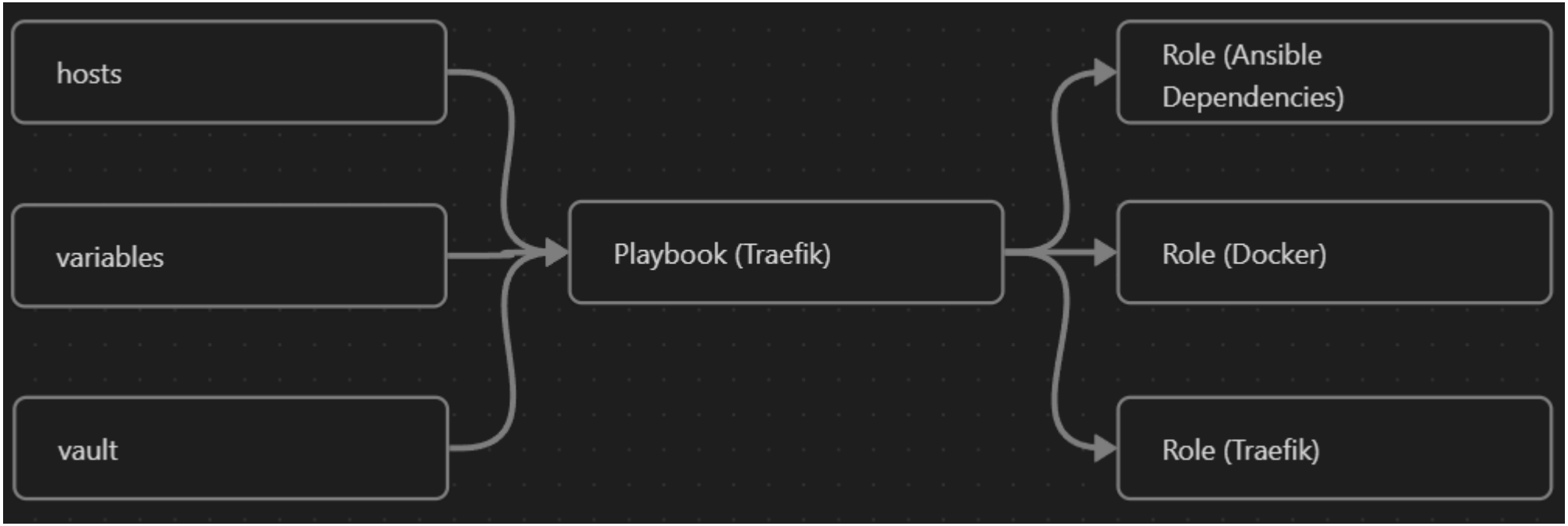
Terraform

- Used for VM and LXC provisioning
- Desired state driven, Idempotent
- Has a good Proxmox provider
- IaC

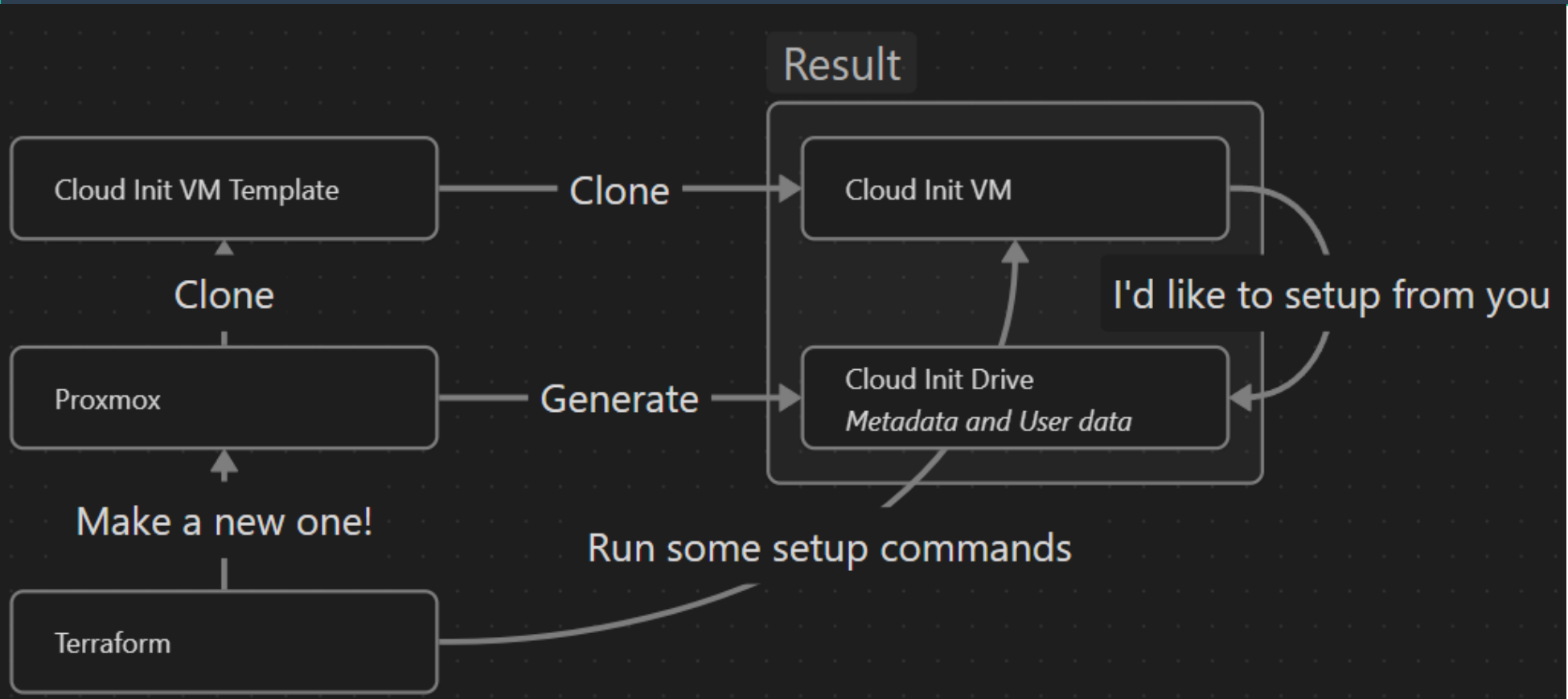
Ansible

- Used for service setup on Vms and LXCs
- Desired state driven, Idempotent
- Widly adopted and works with docker
- IaC

Virtualization – Ansible



Virtualization – Cloud Init in Proxmox



Demo Time!

Thanks for Listening!

Questions?