NETWORK

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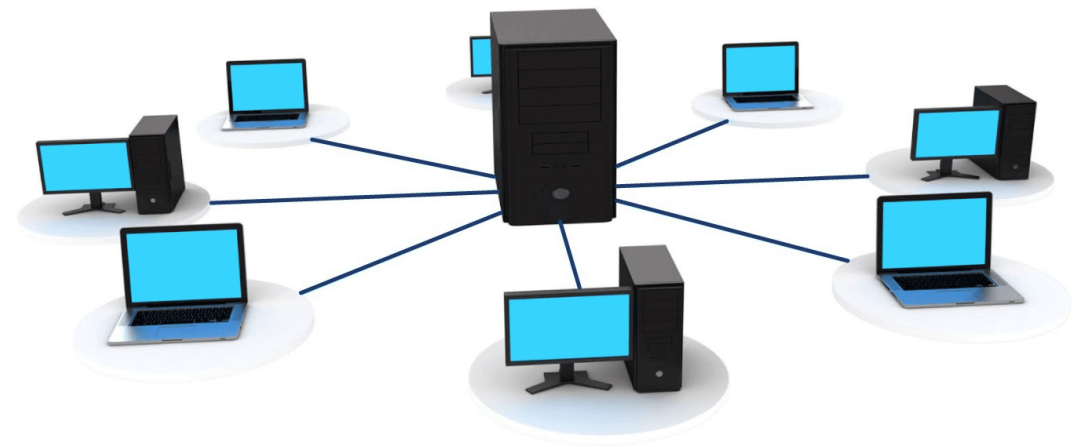
NETWORK @ unil

- Serving 21k + people (incl 17k students)
- Campus
  - 40 buildings
  - 600 switches
  - 800 wifi antennas
- Datacenters
  - 3 sites on campus
  - from a network perspective = 1 logical DC

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DC Technological stack

- Nvidia Cumulus Linux
- Palo Alto
- F5 BigIP
- Prometheus/Grafana + ElasticSearch/Kibana

Datacenter Fabric

- Leaf-Spine Topology
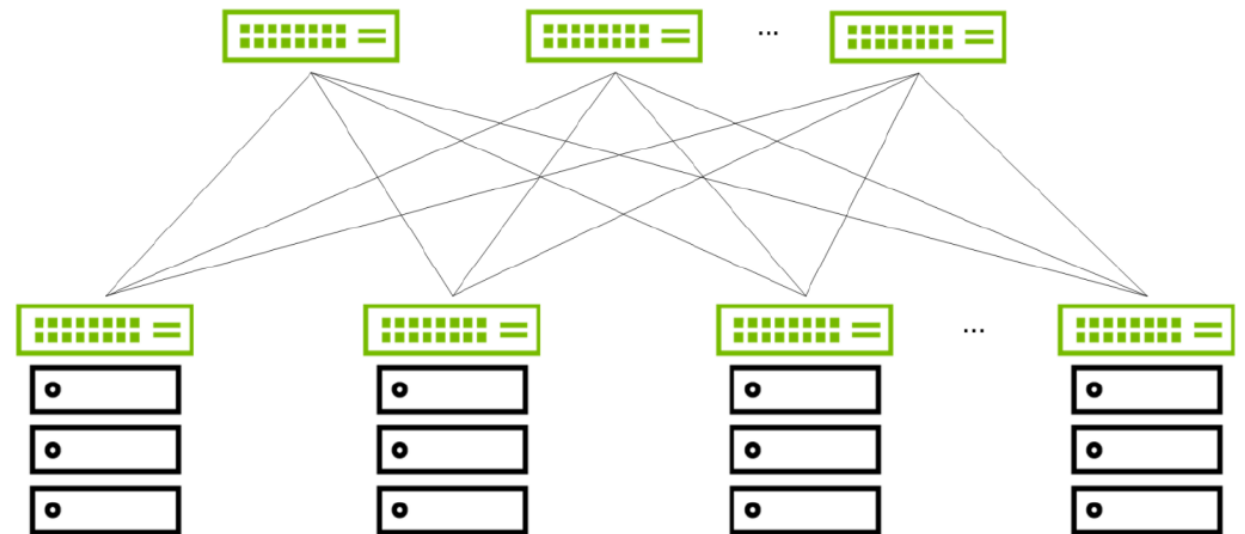 - with 40Gbs uplinks (soon to be 100Gbs)
  - around 20 switches
- VXLAN + BGP EVPN
  - Overlay/Underlay
  - Allows us to provide extended vlans between our DCs
  - ECMP loadbalancing + redundancy

Spine

Leaf

Servers

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Nvidia cumulus Linux

- In production for 6+ years
- Managed like a Linux system
    - Really easy to automate
    - Generate new config + `systemctl reload …`
    - Linux best practice and tools are available (syslog, grep,…)

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automation philosophy

- Goal:
  - Shift from repetitive to high value work
  - Do more with same resources

- How:
  - Scale-able architecture
  - Standardize services as much as possible
  - Ease of automation = requirements for new products

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network as code

- Everything in git (code + issue tracking)
  - Mandatory process of PR + review before any change

- Deploying with ansible

- Describe desired target state as data structures in yaml

- Self-Service: will modify those data structures as well

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question

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question

Thank you

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