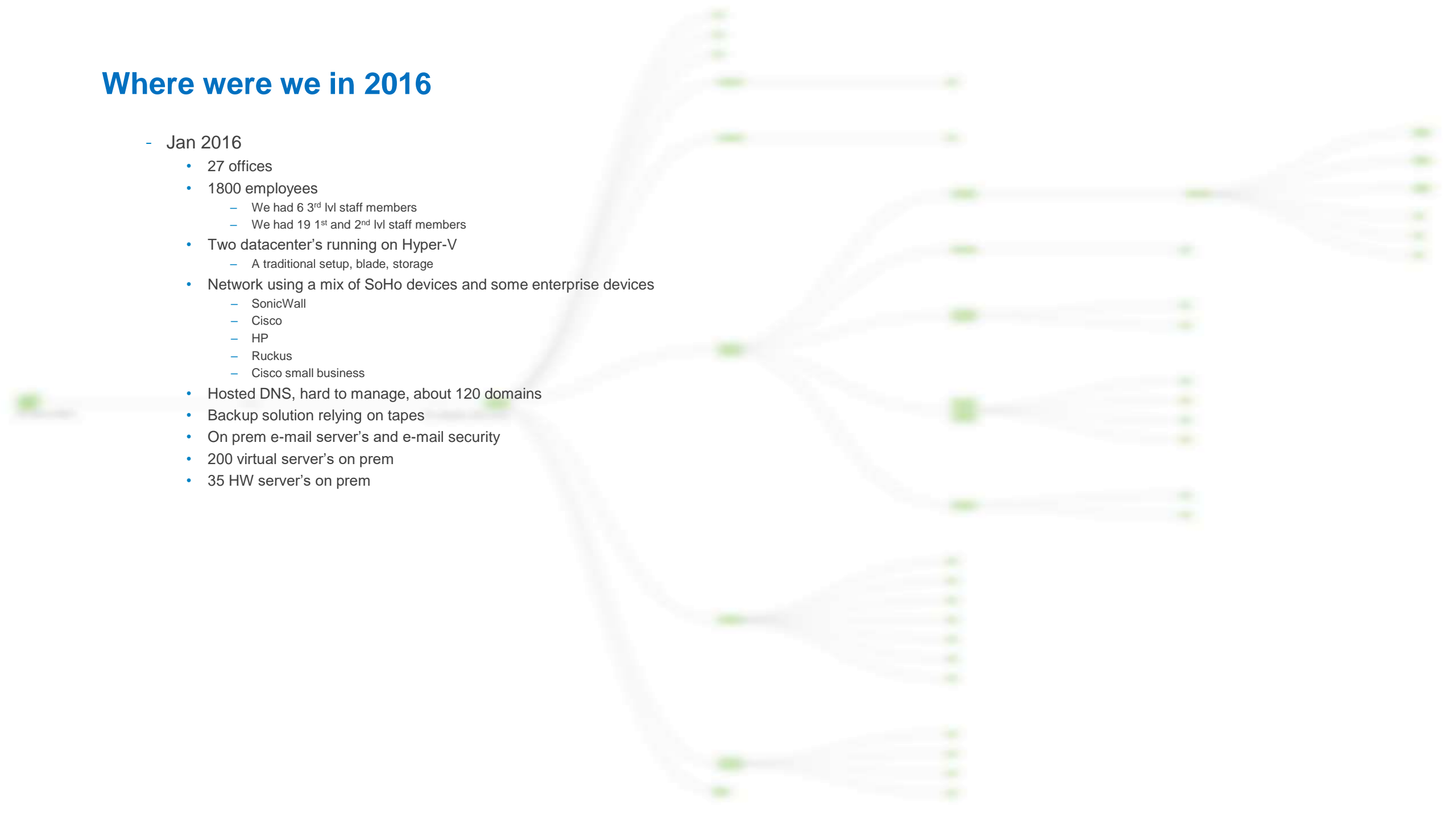




Where were we in 2016

- Jan 2016
 - 27 offices
 - 1800 employees
 - We had 6 3rd lvl staff members
 - We had 19 1st and 2nd lvl staff members
 - Two datacenter's running on Hyper-V
 - A traditional setup, blade, storage
 - Network using a mix of SoHo devices and some enterprise devices
 - SonicWall
 - Cisco
 - HP
 - Ruckus
 - Cisco small business
 - Hosted DNS, hard to manage, about 120 domains
 - Backup solution relying on tapes
 - On prem e-mail server's and e-mail security
 - 200 virtual server's on prem
 - 35 HW server's on prem



Making the cut

- In 2016 we set forth few simple rules on how we would move forward while rebuilding our network and datacenter's. We use this as a guide when we look at new tools and or services.
 - Cloud first
 - We wanted all new applications to use the SAS model, this will cut down on run cost and allow our admins to move up the stack and start moving towards application management
 - Simplicity for our datacenter's
 - We wanted a solution where we would be able to trim down all the roles that were required to run our infrastructure
 - Simplicity for our network
 - We needed a solution that could leverage the man power we have within our 1st and 2nd lvl teams around the world, while also providing an enterprise networking stack to speed up deployment

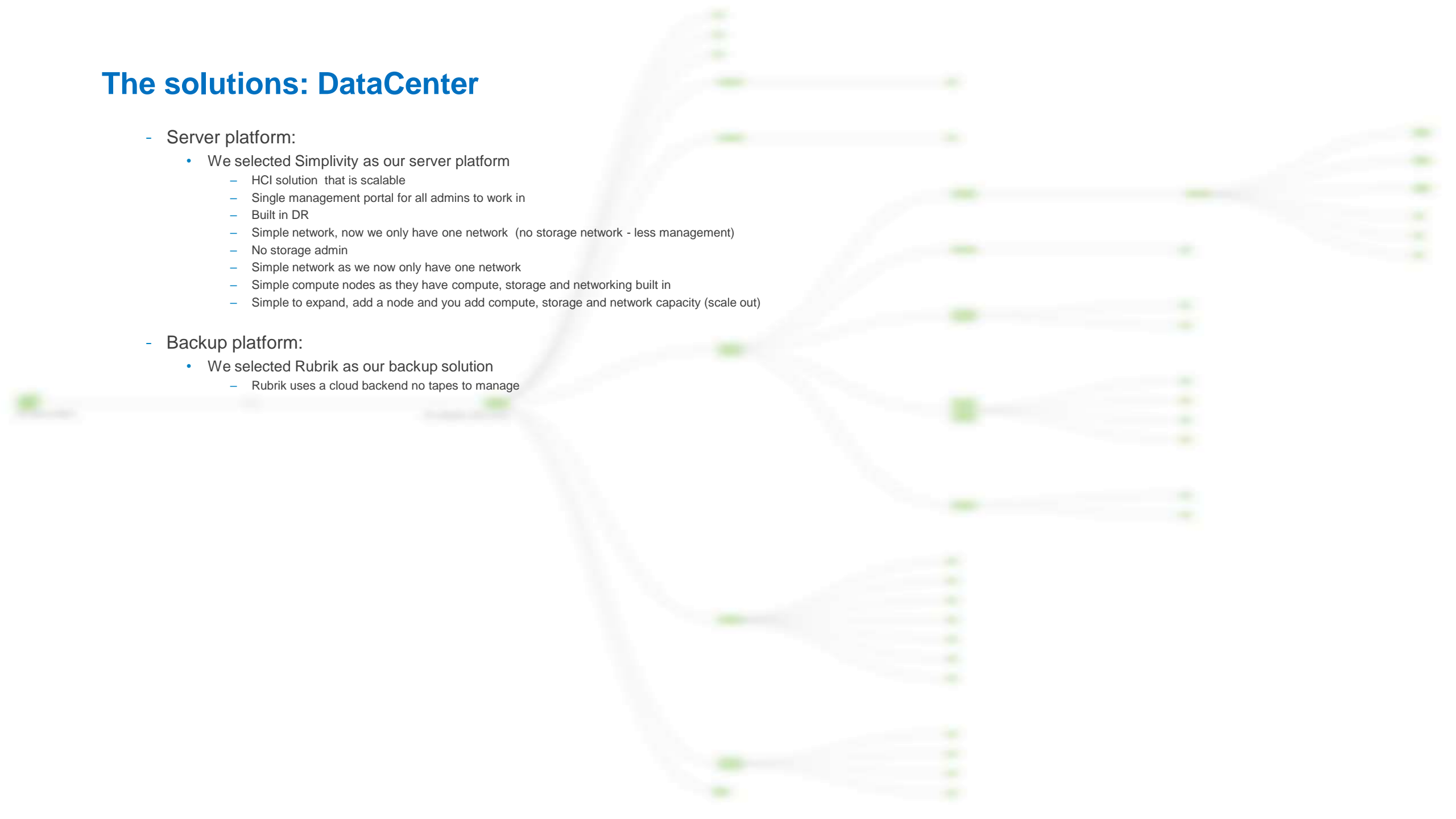
The solutions: Networking

- Meraki:

- We selected Meraki as our network device vendor
 - Single vendor for FW, Wi-Fi and switches
 - Cloud based management system
 - No CLI expert needed, we are able to utilize our team world wide
 - Speedy deployment's, you can pre create all config while devices are being sent to the location
- Meraki MX (Firewall)
 - Built in HA
 - Built in PFR
 - Built in SD-Wan
 - Built in Cisco AMP
 - Built in IDS / IPS
 - The configuration is the same for both large and small sites
- Meraki MS (Switch)
 - Simple config
 - Ability to delegate tasks to L1 no need for a CLI expert
- Meraki MR (Wi-Fi)
 - Simple config
 - Ability to delegate tasks to L1 no need for a CLI expert
 - Built in guest networking

The solutions: DataCenter

- Server platform:
 - We selected Simplivity as our server platform
 - HCI solution that is scalable
 - Single management portal for all admins to work in
 - Built in DR
 - Simple network, now we only have one network (no storage network - less management)
 - No storage admin
 - Simple network as we now only have one network
 - Simple compute nodes as they have compute, storage and networking built in
 - Simple to expand, add a node and you add compute, storage and network capacity (scale out)
- Backup platform:
 - We selected Rubrik as our backup solution
 - Rubrik uses a cloud backend no tapes to manage



The solutions: Cloud (the shortlist)

- O365 services:
 - O365
 - Less management no server to manage
 - E-mail security
 - Avanan e-mail filtering
 - Fraudmarc (spf, dkim and Dmarc)
 - One drive
 - No more need for a "home drive"
 - Sharepoint online
 - Working towards removing all network drives, while we work on that we use AFS to remove all old data not in use on our fileserver's (we now have 60 TB on AFS on Azure)
- DNS:
 - Cloudflare
 - Easy management and built in tools out of the wazoo
 - We use: DNS, Argo smart routing, DNS load balancing, DDoS prevention SSL and analytics and most of these are available in the free tier
- Azure:
 - Azure is our go to platform for adding services
 - We have built 5 virtual datacenter's on top of Azure using our network platform as the back bone into azure
 - We rely on azure for all of our web services

Where are we now and this is how we got there

- 2018

- 106 offices
- 3300 employees
 - We now have 5 3rd lvl staff members
 - We had 25 1st and 2nd lvl staff members
- Two datacenter's using HCI and 5 virtual datacenter's built on Azure
- Cloud managed network
- DNS service in cloud single vendor
- Backup solution using cloud storage as back end
- E-mail in O365 with added dmark, spf flattening and 2 tiers of e-mail filtering
- 503 virtual server's
- 30 HCI nodes in HA and we can now fail over from one datacenter to another

