Updating the IT Infrastructure in ASICLab

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ASICLab IT Infrastructure Presentation

The Before Times

- ▶ State before: Backups, hardware Machines, What and how: software/OS we run, machine config ()
- ▶ Issues:
  - ▶ Harddrives failing in NFS server
  - ▶ Desktops were randomly crashing and not booting on CentOS7
  - ▶ Configuration management strategy was monolitic: couldn't understand it
  - ▶ CentOS7 was released in 2014, EOL in 2024.
    - ▶ Repos very outdated for key software: gcc, Firefox, etc.
    - ▶ Workaround have existed for tools, but aren't perfect
    - ▶ There's no CentOS8/9
    - ▶ Alternative clones like AlmaLinux8/9 and Rocky Linux8/9 are facing issues as RH closed access to RHEL source
  - ▶ Documentation was outdates and difficult to work with

The Changes

- ▶ Fedora Server
  - ▶ Continous updates make apps like Slack, Zoom, desktop usage, more streamlined
- ▶ NFS server
  - ▶ Raid6 config (show diagram)
  - ▶ `tools`` and `users' shares
- ▶ Identities
  - ▶ LDAP, FreeIPA, sssd
- ▶ Fedora Workstations
  - ▶ Updates x2 per year
  - ▶ The software core to our work, we self vendor, the auxilary stuff we want to be easy
- ▶ Ansible (only introduce after covering server infrastructure)
  - ▶ Only these steps are needed on Fedora workstations (make root account, enable SSH)
  - ▶ Replace monolitic Clonezilla; force us to know our stack
- ▶ Docs
  - ▶ Markdown, git repo (show screenshots)
- ▶ Ansible, NFS shares/RAID array, fedora linux, containers, DNS automatically assigns IP/name now

Remaining Issues

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- How to organize the lab?
- Bandwidth of access to NFS shares doesn't work well
- SSH keys don't work with LDAP users
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Up Next

- In two weeks
- GUI-based design Cadence and the alternative of Python-ba