Network Automation

TechEx22

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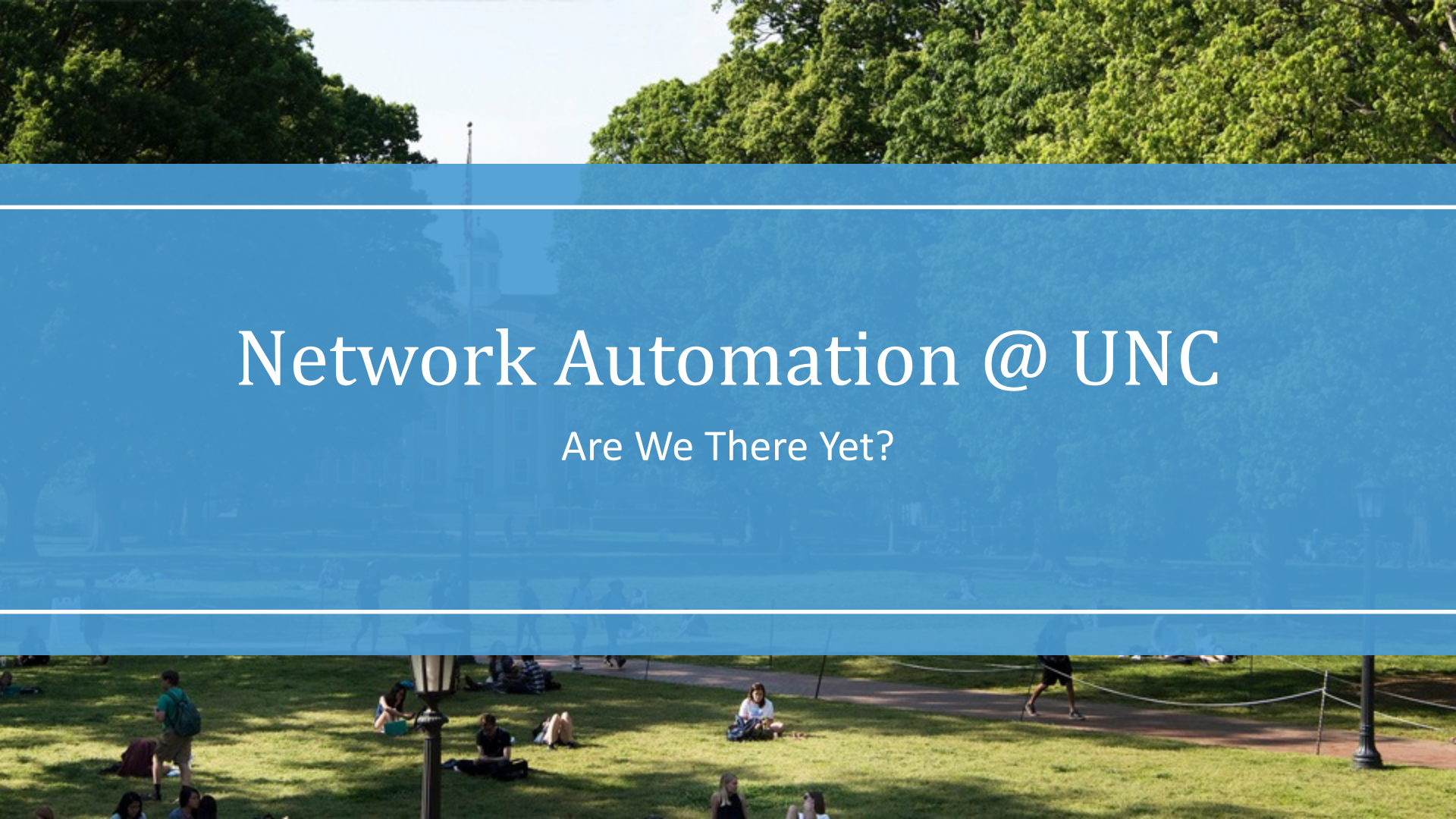
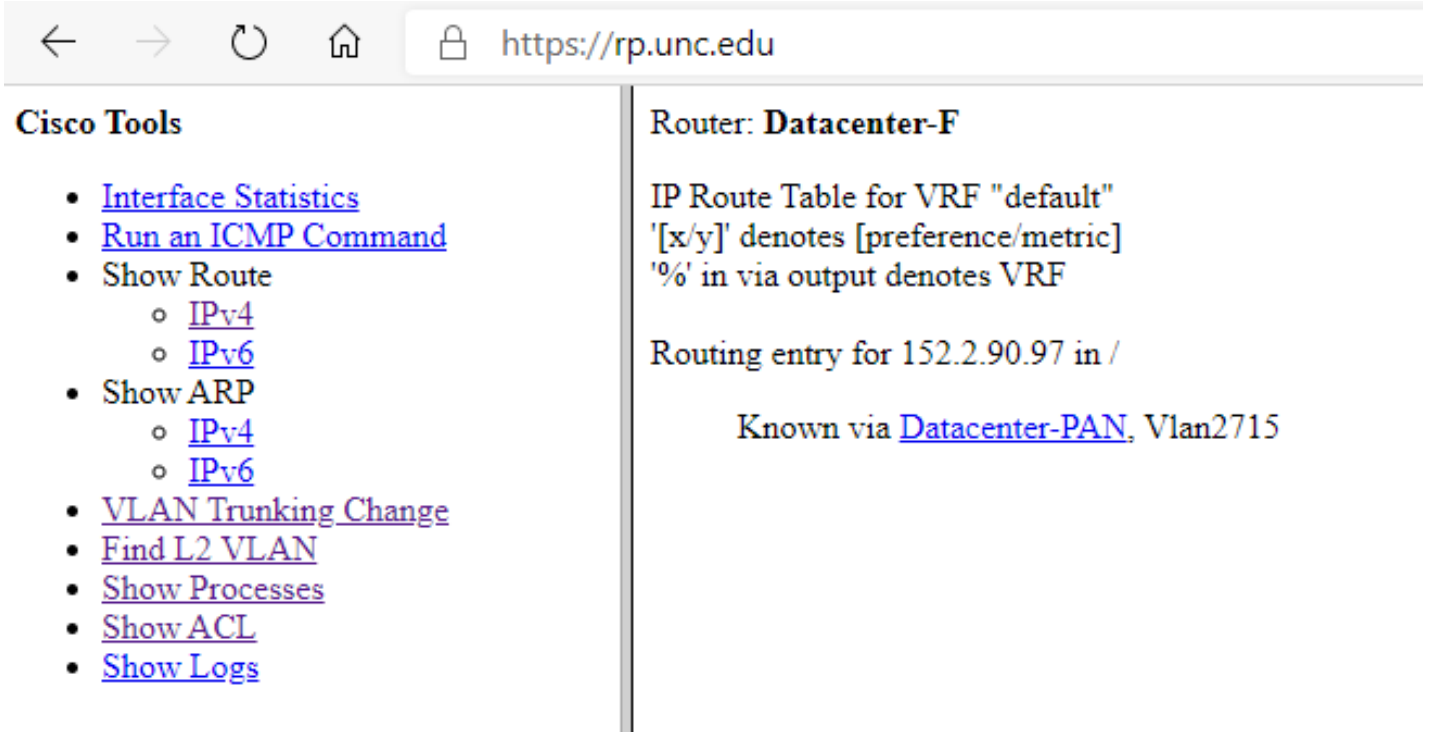


Network Automation @ UNC

Are We There Yet?

The Catalyst



The Goals

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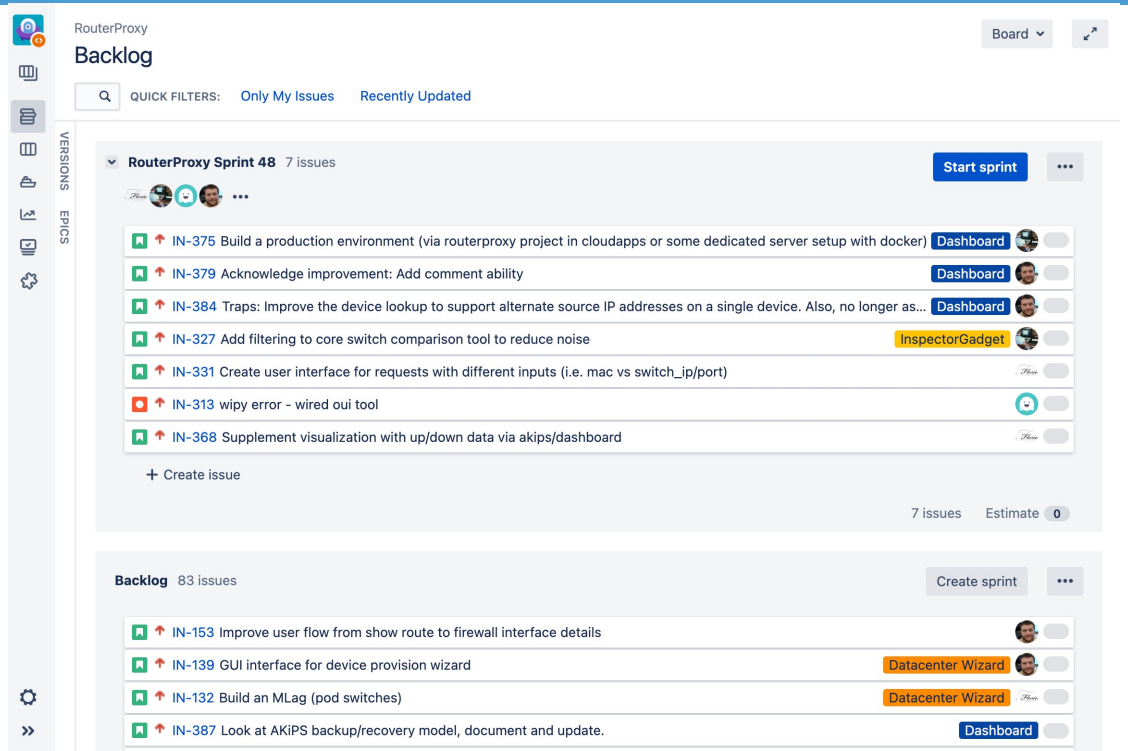
- Maintain essential functionality
  - Who are the users? What do they really need?
- Use a team approach
  - Spread skills over multiple people, avoid skill silos
  - Extend opportunity to other ITS departments
  - Grow expertise among members
- Embrace new development and deployment patterns
  - Set up for future growth
- Consider security and plan appropriately

Agile Development and SCRUM

Backlog Management

- Jira Scrum Board
- Sprint Planning
- Task Tracking
- Product Owners



GitLab

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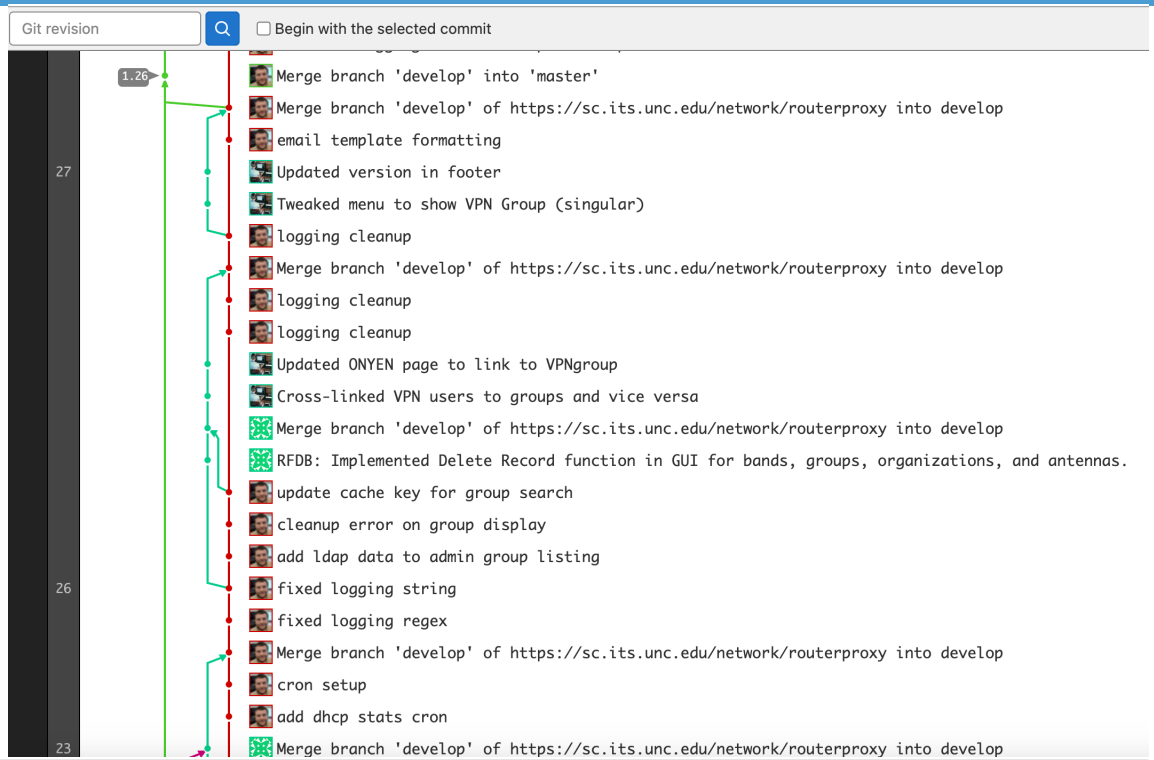
Source Code Management

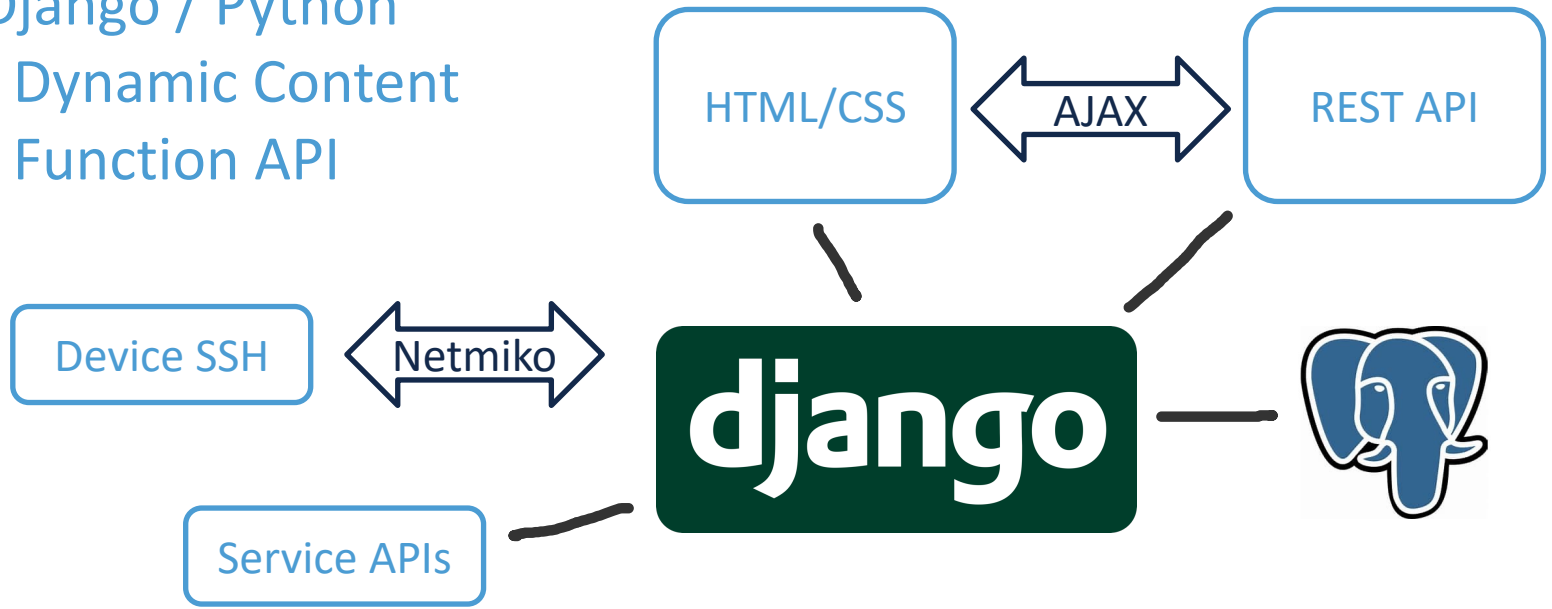
- Git basics
- Branch planning
- Coding conventions

Pipeline Automation

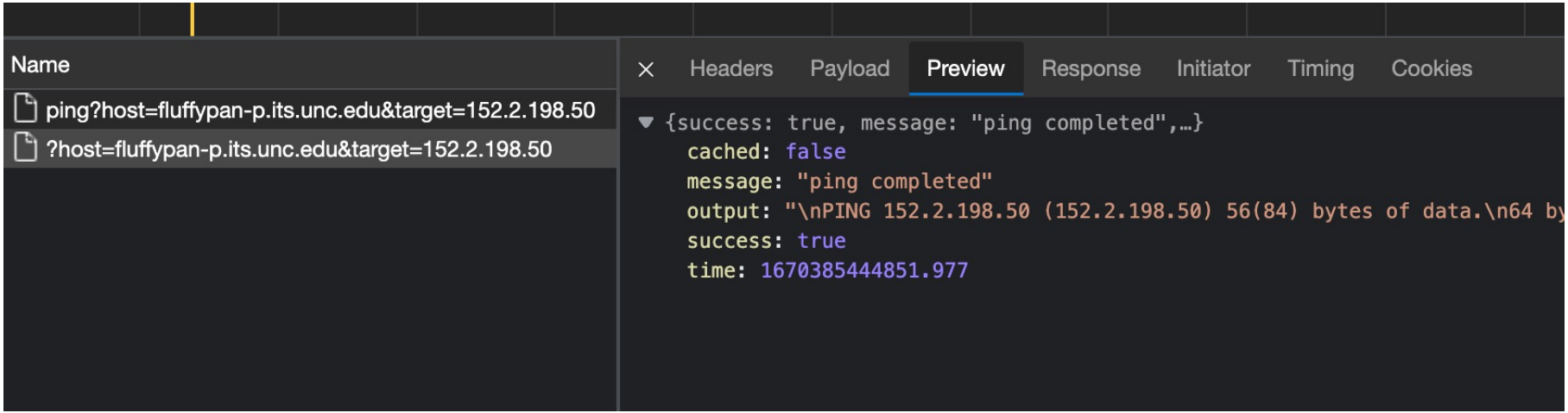


The Framework

Django / Python
- Dynamic Content
- Function API



API Planning



Standardized requests and responses calls for operations interacting with other devices and APIs.

Platform As A Service

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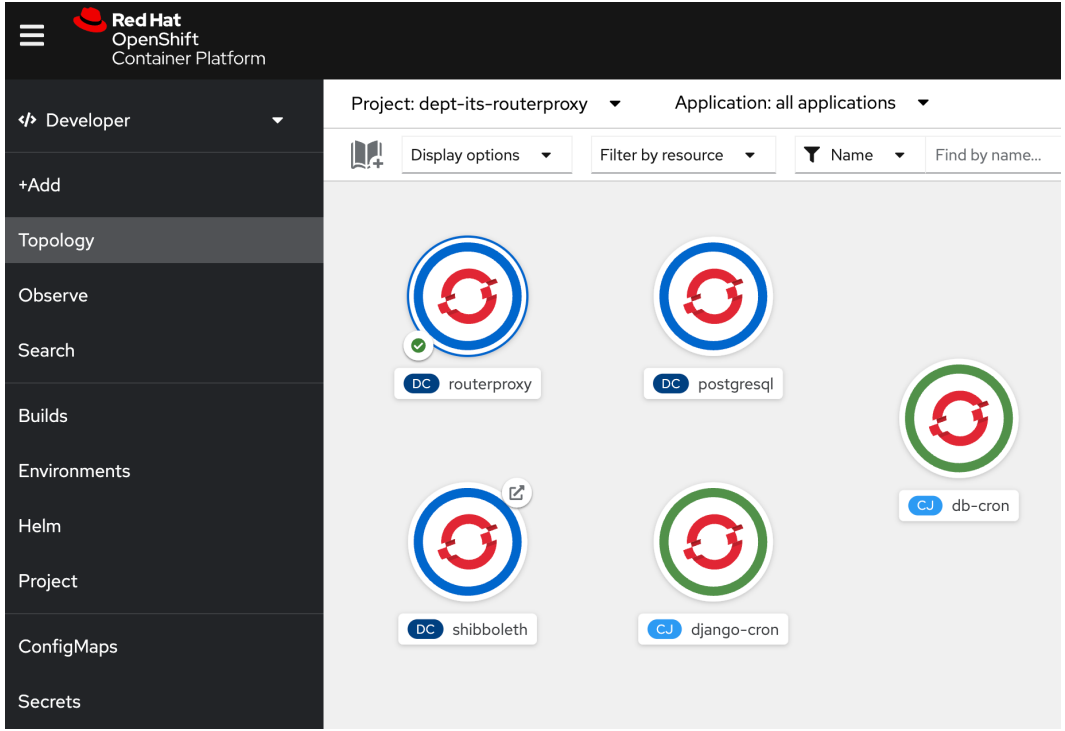
OpenShift (Cloudapps)
- Established campus offering
- Project layout
  - Production
  - Testing
- Triggered builds



Feature Areas

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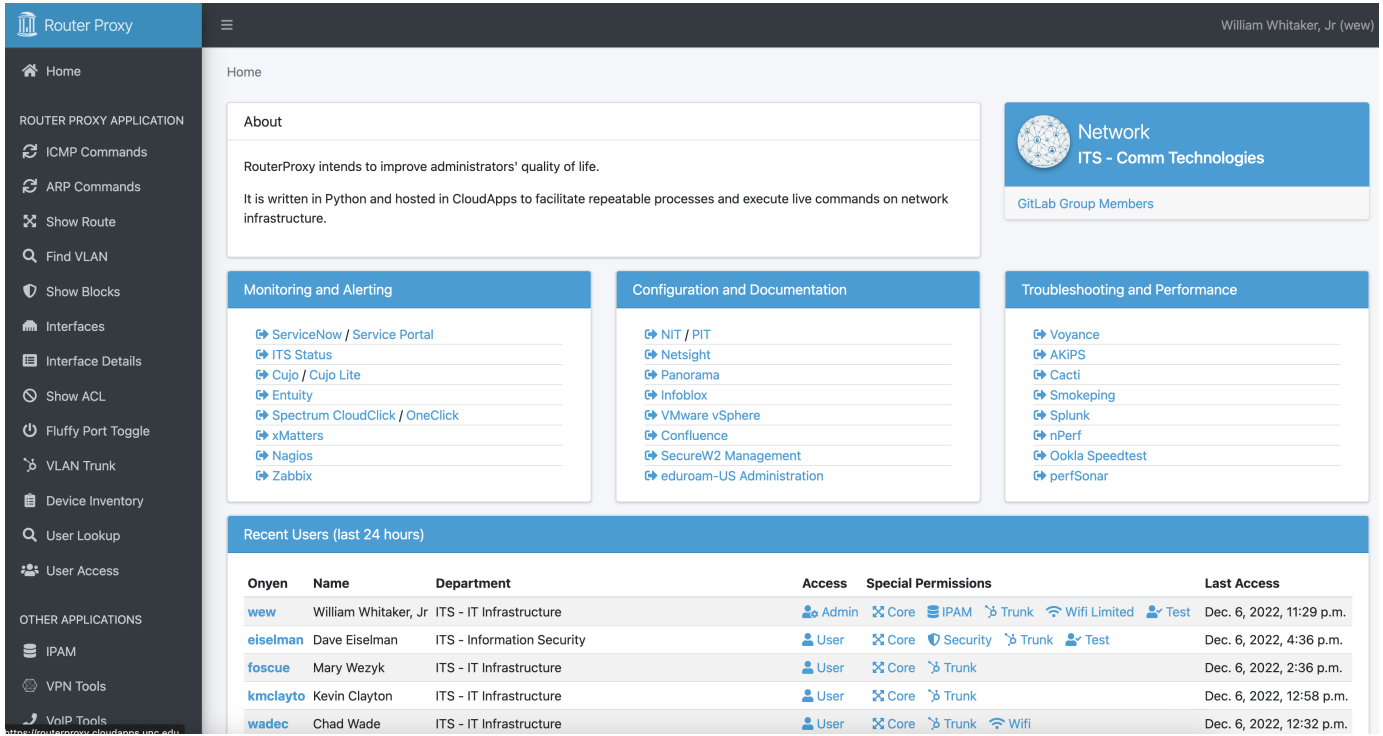
Core	ping, arp, traceroute, vlan, interfaces, ACLs, block reporting
IPAM	Interface with Infoblox data, automate add/update/deletes
VPN Tools	AnyConnect client and group details, statistics
VoIP Tools	Automated porting between VoIP providers
Wireless Tools	AP management, bulk controller changes, reporting
RF Spectrum DB	RF usage, placement, ownership, mapping

Demonstration



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