

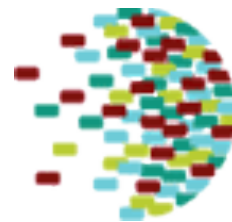
# Software Defined Networking

## Next-Gen Enterprise Networks

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**GlobalNOC**  
Global Research Network Operations Center

“It’s great you’re deploying cutting-edge technologies like SDN, but of course you’re a university. We could never do that.”

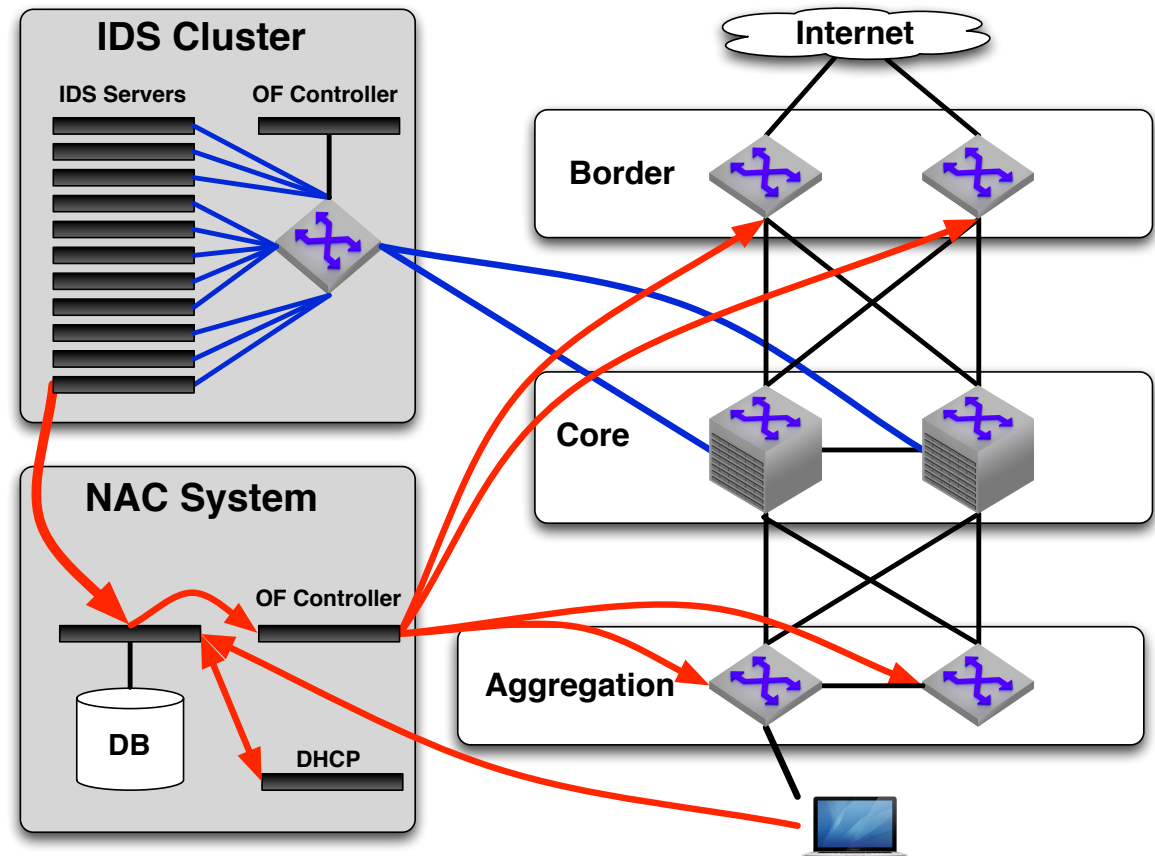
### Assumptions:

1. You’re only investing in SDN to further your research mission.
2. You must not have the same security/compliance/reliability requirements that commercial enterprise networks have

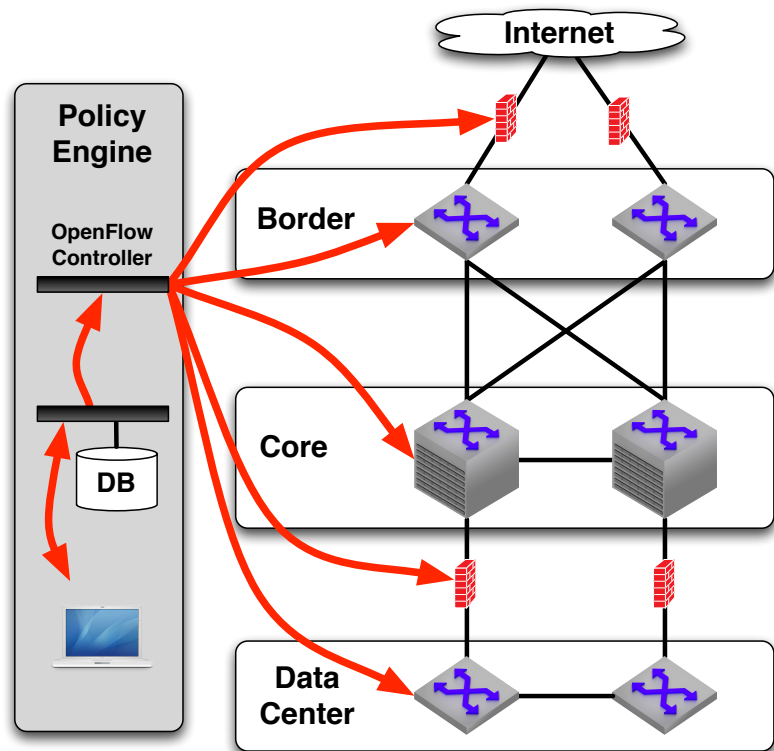
- 120,000 users (>95% BYOD)
- 1,000's of switches/APs
- Massive diversity
- Compliance Requirements
- Mission to support research
- Federated operations
- Moving to shared infrastructure



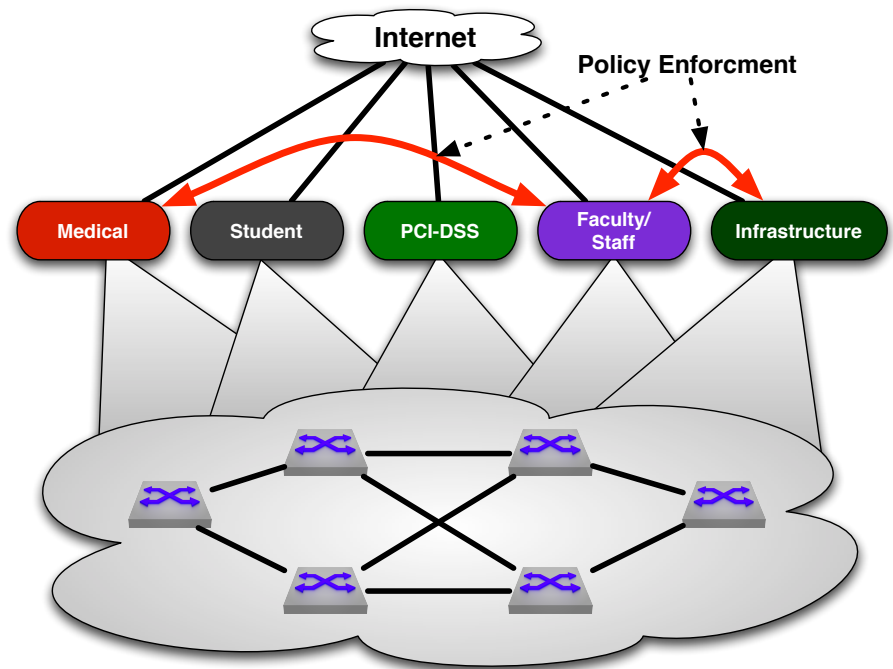
- Existing “Home-Grown” NAC Solution
- IDS via Snort/NetFlow
- Web Services API
- Response via DHCP/ BGP
- Add: OpenFlow Load-Balancer for TOR
- Add: Enhanced Response capabilities via OpenFlow
- Dynamic flow mirroring, fine-grained filtering, & more



### Security Policy Distribution

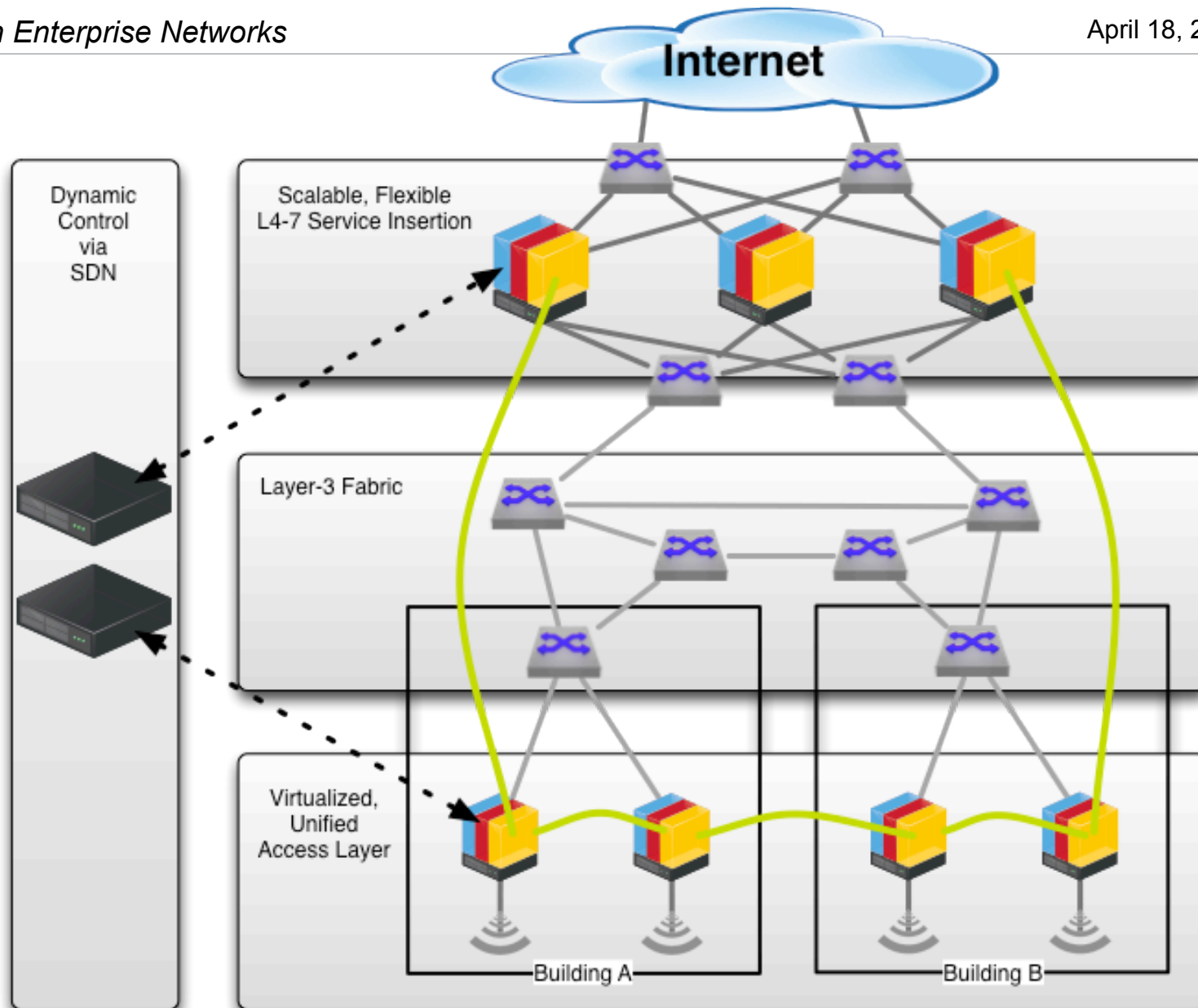


### Network Virtualization



# Fundamentals of Next-Generation Enterprise Networks

- Virtualization at the Access Layer
- Dynamic control through SDN
- Overlays w/simple layer-3 “fabric”
- Network as a Platform
- Unified Wired/Wireless/vSwitch Access Layer
- Flexible L4-7 Service Scaling/Insertion



## For More Information

- InCNTRE: [incntre.iu.edu/](http://incntre.iu.edu/)
- Twitter: @incntre
- FlowScale

[www.openflowhub.org/display/FlowScale](http://www.openflowhub.org/display/FlowScale)



**Thank you !**