

# “SDN-hard” Problems

- **Technology**
  - Control Plane Scalability and Resilience
    - Logical Centralization
  - Flow Setup Scalability and Performance
  - Abstractions
    - Simple Switch/Programming Model
  - Reasoning Systems
    - headerspace analysis, NPLs, network compilers, ...
  - Operational Models
    - And how to you build/operate/debug these networks?
- **Sociology**
  - OF/SDN approach challenges much of our *central dogma*
  - Not the least of which are
    - Circuits vs. hop-by-hop forwarding
    - Centralized vs. Distributed Control Planes
  - Physical vs. Virtual (edge?)
  - Shift in influence bases from NetOps → DevOps
- **Economics**
  - Well...