Computer Networks

Project 2 & HW 1

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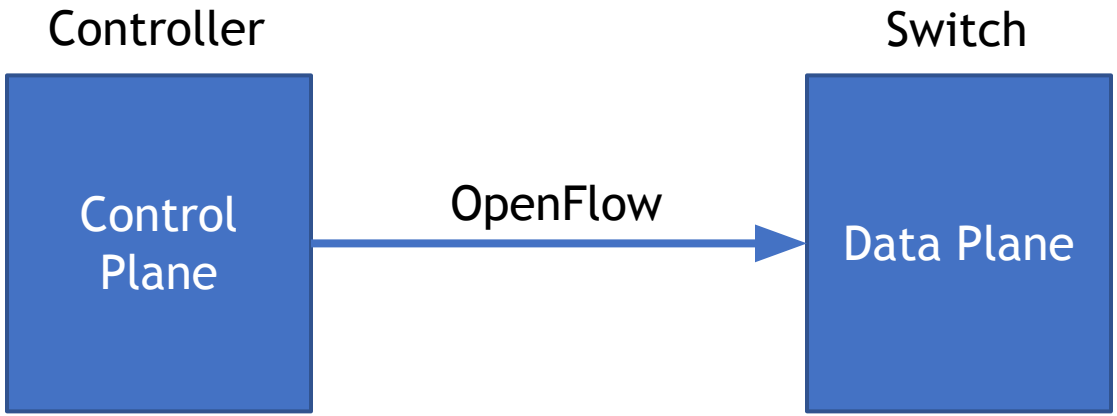
Software Defined Network (SDN)



- Making decisions
  - How to forward data
  - Order to send data
  - …
- Perform actions
  - Forward
  - Route

Mininet & Pox

- Mininet: software that creates a virtual network
  - Set up switches, connect components, ping
  - Helpful links:
    - https://github.com/mininet/mininet/wiki/Documentation
    - https://github.com/mininet/mininet/wiki/Introduction-to-Mininet#creating
- Pox: a Python-based SDN controller platform geared towards research and education
    - https://github.com/mininet/openflow-tutorial/wiki/Create-a-Learning-Switch#Controller_Choice_POX_Python
    - https://haryachyy.wordpress.com/2014/06/14/learning-pox-openflow-controller-proactive-approach/

Mininet: Download & Install

- Download VirtualBox
- Download Mininet Image
  - http://mininet.org/download/
  - Log in to the box: username & password “mininet”
  - sudo mn (options)
- Demo

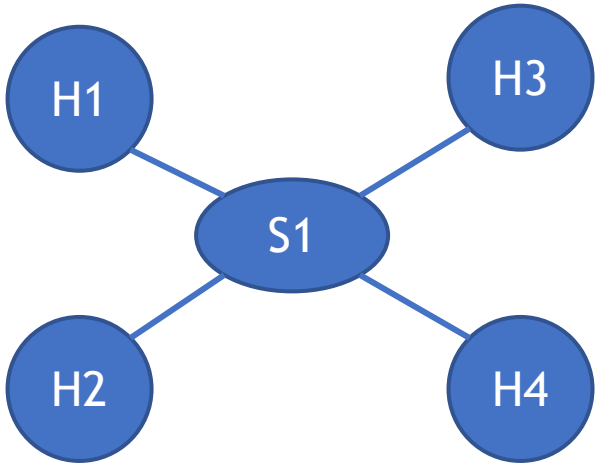
VirtualBox with ssh (optional)

- For easier access, set up ssh connection to our VM
- Port forwarding:
  - Forwarding a localhost port to port 22 (ssh) on the virtual machine
  - ssh mininet@127.0.0.1 -p 2222
- Copy files:
  - scp -P 2222 part1.py mininet@localhost:~/
- Another way: sshfs can be used to mount a remote fs to your local fs
  - sshfs -p 3000 mininet@127.0.0.1:/home/mininet/cse461 ~/attu/

http://blog.johannesmp.com/2017/01/25/port-forwarding-ssh-from-virtualbox/

Project 2: Part 1

- Your task in part one is to modify part1.py to represent the following network topology:



Project 2: Part 1

- Run:
  - sudo mn --custom ./topos/part1.py --topo part1
  - sudo python part1.py
- dump, pingall, <h1> ping <h2>, iperf

END