Introduction to Computer Networks
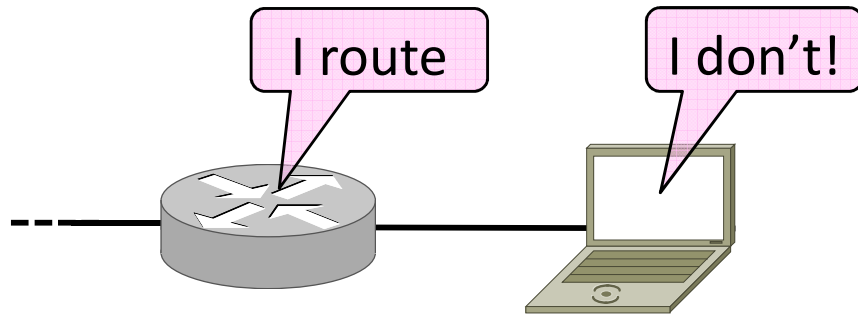
Combining Hosts and Routers

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Topic

- How routing protocols work with IP
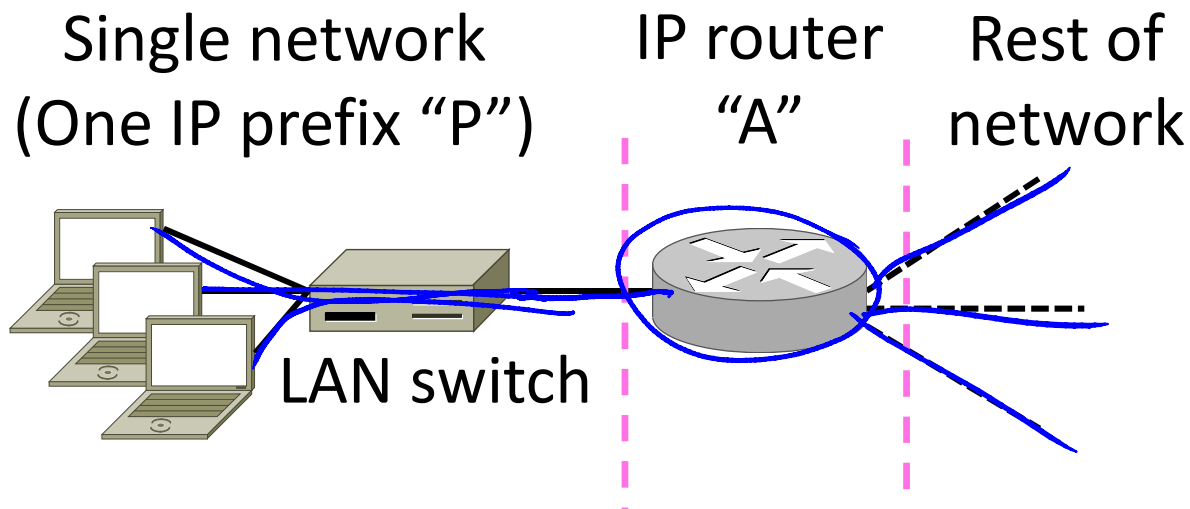 - The Host/Router distinction

Recap

- In the Internet:

  Hosts on same network have IP addresses in the same <u>IP prefix</u>

  Hosts just send off-network traffic to the nearest router to handle

  Routers discover the routes to use

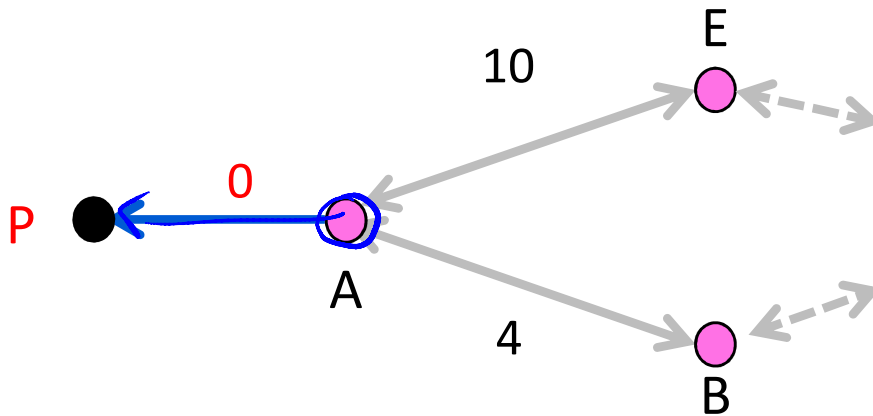 Routers use <u>longest prefix matching</u> to send packets to the right next hop

Host/Router Combination

- Hosts attach to routers as IP prefixes
  - Router needs table to reach all hosts

Single network
(One IP prefix "P")

IP router
"A"

Rest of
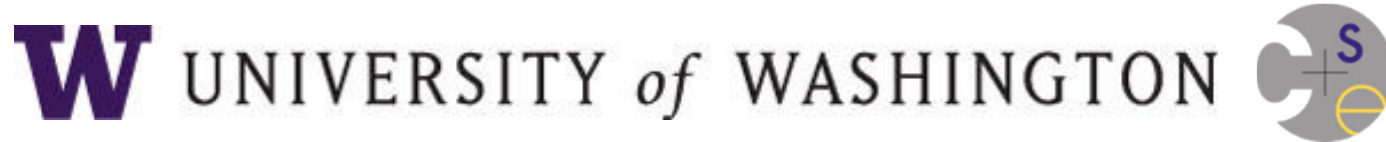network

LAN switch

Network Topology for Routing

- Group hosts under IP prefix connected directly to router
  - One entry for all hosts

Network Topology for Routing (2)

- Routing now works as before!
    - Routers advertise IP prefixes for hosts
    - Router addresses are "/32" prefixes
    - Lets all routers find a path to hosts
    - Hosts find by sending to their router

END

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