

# CSE 291: Operating Systems in Datacenters

Amy Ousterhout

Oct. 6, 2022

## Agenda for Today

- Reminders
- Background on datacenter networking
- eRPC discussion
- PRISM discussion

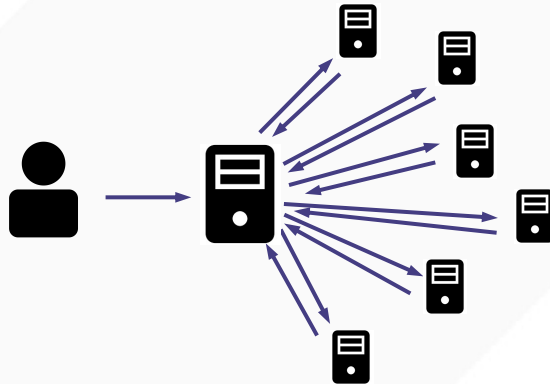
# Reminders

- First Day Survey #FinAid
  - Due Friday 10/7
- Warm-up assignment
  - Due Tuesday 10/11 at 11:59 pm
- Projects
  - See notes on Canvas tonight
  - Start thinking about your topic
  - Proposals due on 10/20
- Paper reviews
  - No need to summarize the paper
  - Focus on your opinions and thoughts about it

# Datacenter Networking

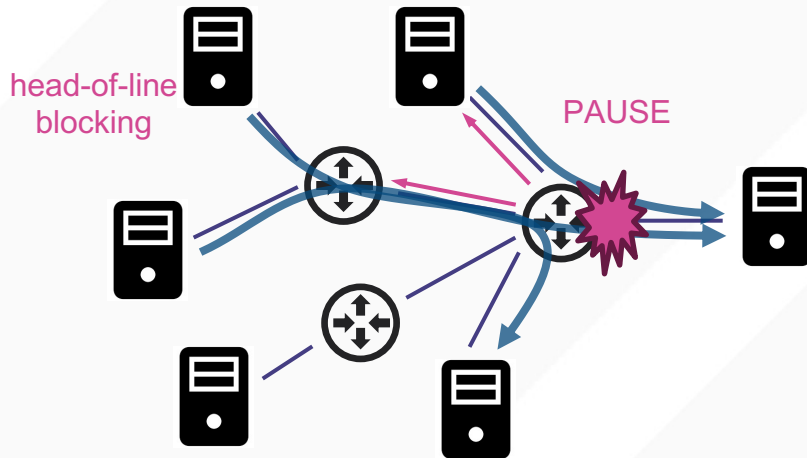
# Incast

- Incast: when a server receives incoming traffic from many senders at once (e.g., 10s-100s)
- Often triggered by one server requesting data from many others
- What problems can this cause?
  - Dropped packets at the switch
  - Queueing delays



# Priority Flow Control (PFC)

- RDMA was designed to operate over a lossless network
- How does RoCE prevent packet drops with Ethernet?
  - PAUSE frames
- Drawbacks of PFC
  - Head-of-line blocking
  - Deadlocks
  - Etc.



**eRPC Discussion**  
**PRISM Discussion**