Recitation 9: RON
Performance

MIT - 6.033
Spring 2022
Henry Corrigan-Gibbs
Plan

- Recap on Row
- The Evaluation Section
- Debate: Zoom should use ROW to improve quality of our video chats

Logistics

* Mid-semester feedback form (see your email)
* For Tuesday: Internet
* Volunteers?
Recitation Qs

What is the goal?

1. Route quickly around net failures
2. Application-specific metric in path selection
3. Expressive routing policies

Why do we need RON?

If RON were in use today, who would be impacted?
BGP runs at borders. Let's us send IP packets across internet.
In science, what is the goal of an experiment?

* Test a theory/hypothesis
  - Earth is flat
  - "Our system is a good idea"

* Measure a constant/quantity
  - Speed of light, acceleration due to gravity
  - "Cost of our system is MB/$/..."

* [In engineering] Compare costs to alternatives
  - This engine uses 2x fuel than the other
  - "Our system is better than prior one"

* Others?
Which are happening here?

- Test a theory
  - Is row improves throughput

- Measure constant
  - Loss rates, loss part

- Compare to alternative
  - Plain interest
A Debate

Resolved: Zoom should implement RON to improve video experience for our 20-person Zoom calls.

→ Does RON solve our problem?
→ Is it fast/cheap enough?
→ What could go wrong?

Even Groups: In favor
Odd Groups: Against

1) Use paper to find points supporting your position.
2) Nominate one person to give persuasive short points in support
3) We’ll alternate groups.

 Everybody wins?😊
Breakout Groups!
- Could ROW make network performance worse?
  - Extra hops
  - Extra processing
  - Extra policy restrictions?
  - "too clever"
  - blow consumption

- Scaling: Why doesn't ROW scale to thousands of nodes?
  - Quadratic cost of probes?

- How costly are the probes?
  - Is worth it?
Why don't we use Row?

- Scaling is one major issue

- For whom is it worth the trouble?
  - Maybe Google, but they run their own fiber?

- Can you run Row with mutually distrusting parties?

- How frequently do we see net outages of the kind that Row could fix? Is worth the cost?

Example of one that is used: Tor

- Not for performance but for functionality