Note on Relay Packets

- A relay does not look inside Relay cells unless it is the end of the circuit.

Cell Arrives: Type?

- If the answer is Yes:
  - Am I the end of the circuit?
    - Process Cell

- If the answer is No:
  - Forward to next hop

Control Cell:
- Process Cell
Blocking is bad

- We expect a response for:
  - Open
  - Create
  - Relay Extend

- Can we block the TCP socket waiting for the response?
  - Yes and No
Blocking is *mostly* bad

- Can block waiting for Opened
- Cannot block waiting for Relay Extended or Created
Separate Proxy and Router

- You already made the proxy
- Make the Tor61 router functionality completely separate
- Don’t try to share threads!
Routing Tables

- How should we structure a routing table?
- We’re a router, what do we know?
  - List of our Circuit #s
  - List of our Stream #s
  - List of our Tor-to-Tor TCP Sockets
  - List of our HTTP-to-Proxy TCP Sockets
Routing Tables

- A Relay Cell comes into a Relay TCP socket, it has:
  - Circuit #
  - Stream #
- How do we know what to do with it?
Cell arrives:
C#: 3
S#: 1

WHAT DO WE DO?

Route through green to D
Cell arrives:
C#: 3
S#: 1

WHAT DO WE DO?

IS IT GREEN OR BLUE?!
Hopping through Yourself
Hopping through Yourself with only 1 TCP socket
Additional Advice

- Read the project, including all the design notes
- Understand the project
- Be the project
- Threading Example Code:
  - [https://courses.cs.washington.edu/courses/cse461/14sp/threading.html](https://courses.cs.washington.edu/courses/cse461/14sp/threading.html)