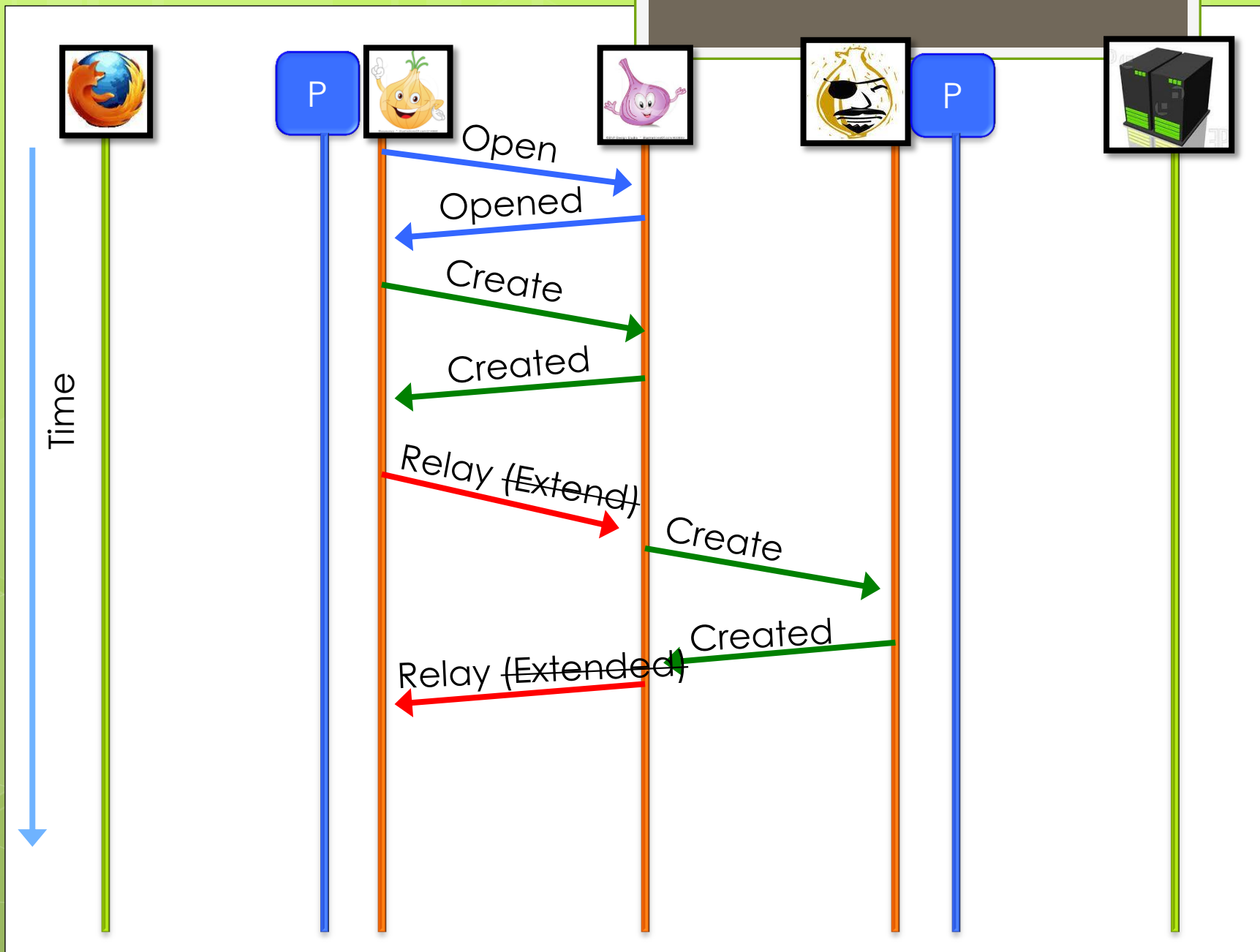




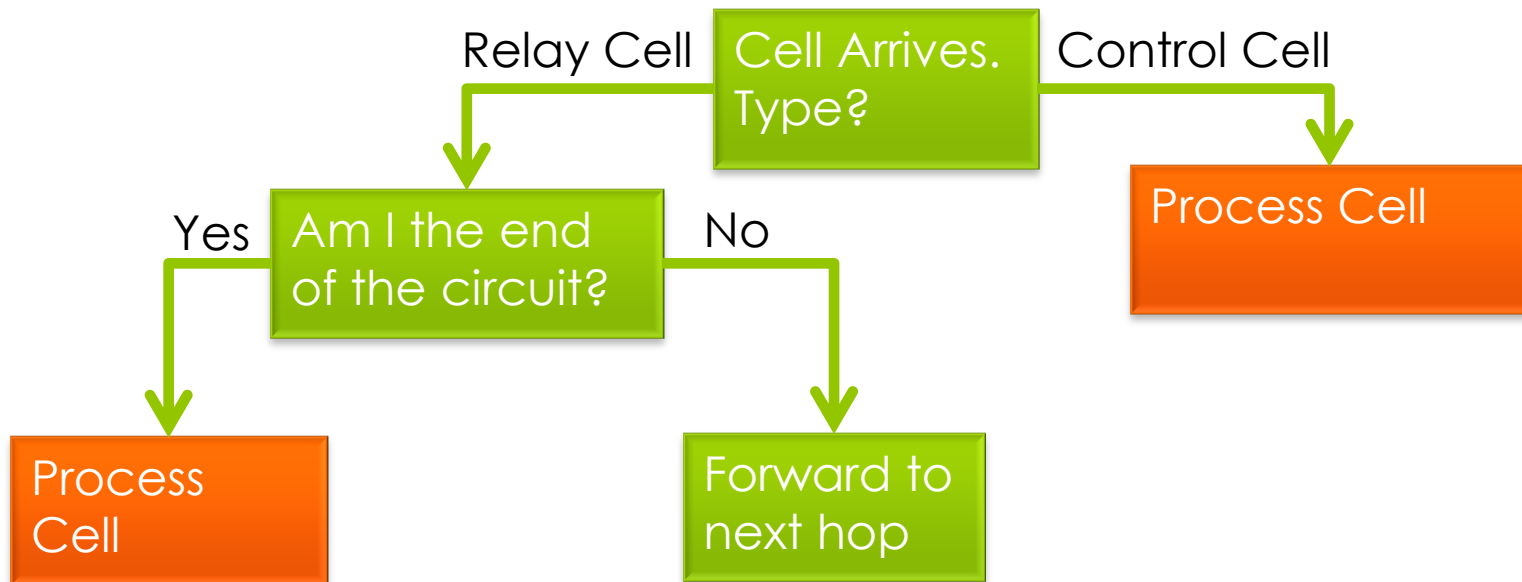
Tor61

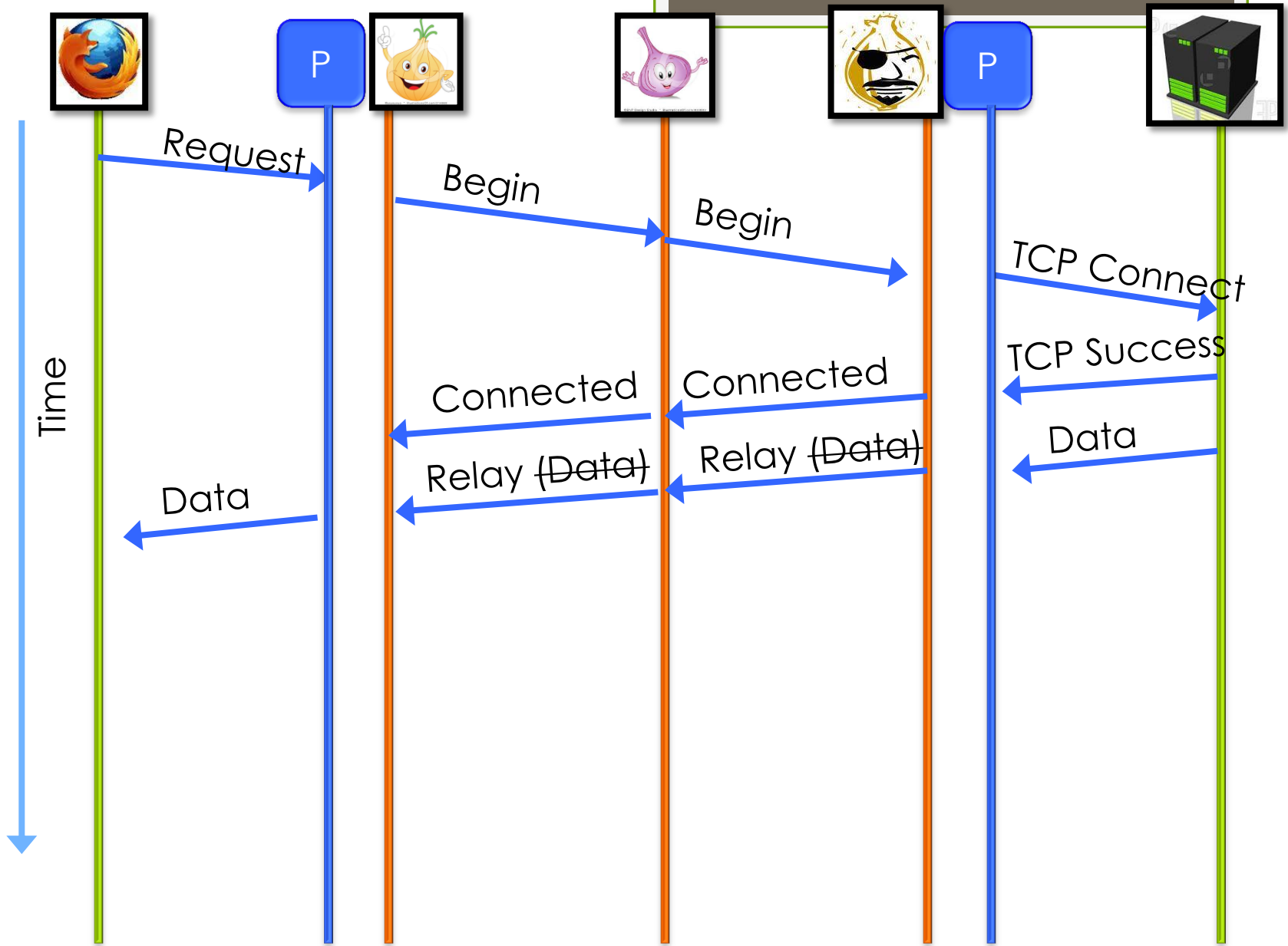




# Note on Relay Packets

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

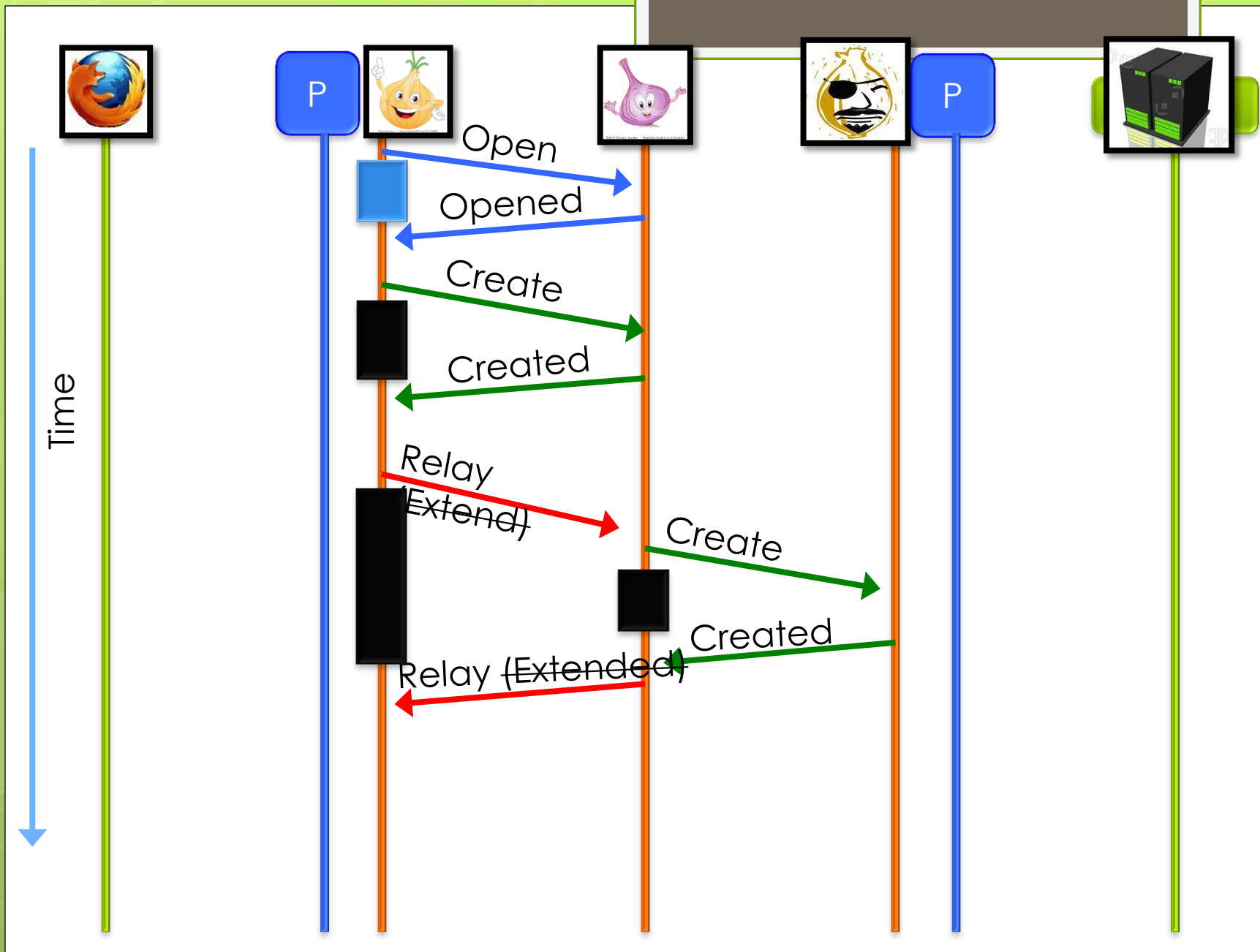




# Blocking is bad



- We expect a response for:
  - Open
  - Create
  - Relay Extend
- Can we block the TCP socket waiting for the response?
  - Yes and No

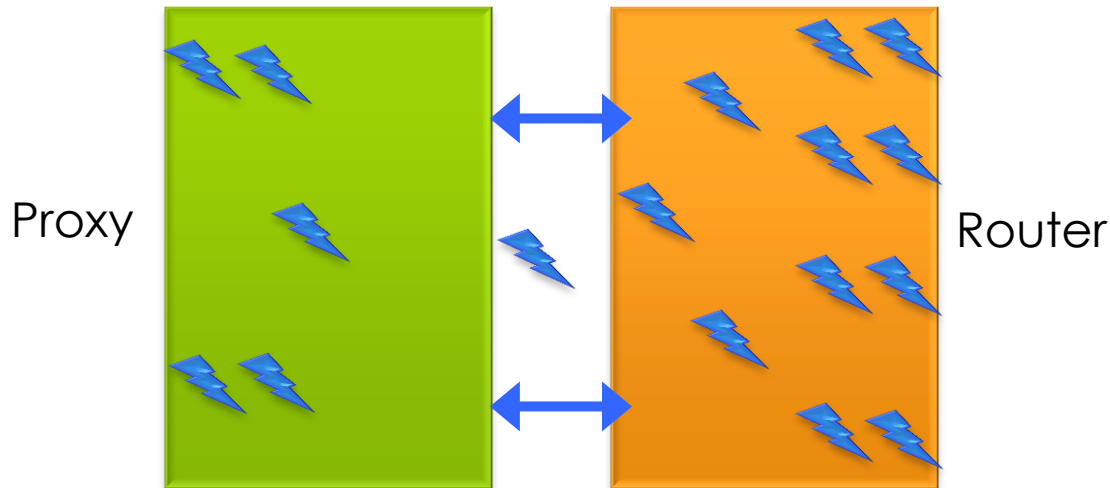


# Blocking is *mostly* bad

- 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!







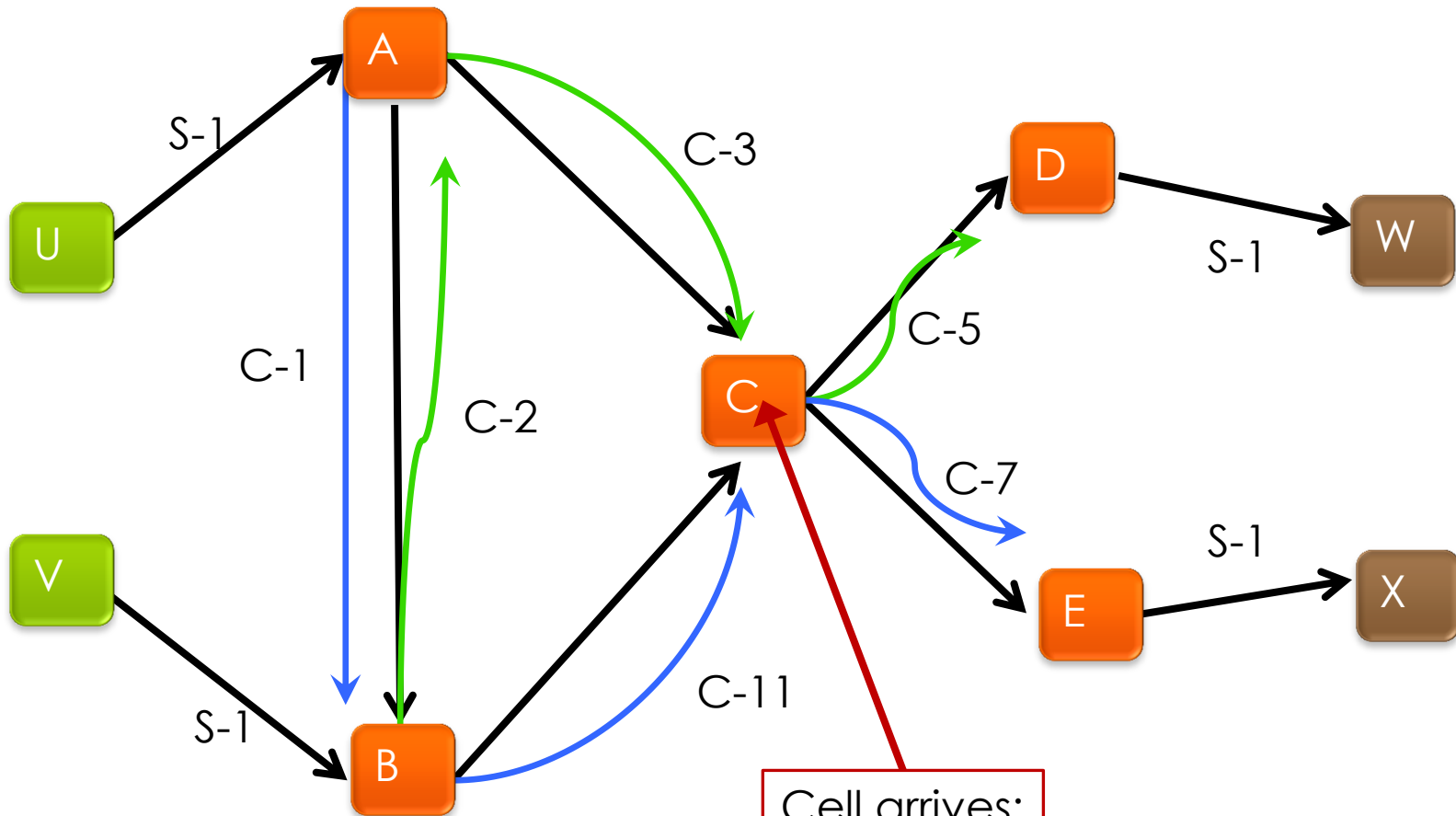
# Routing Tables

- 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

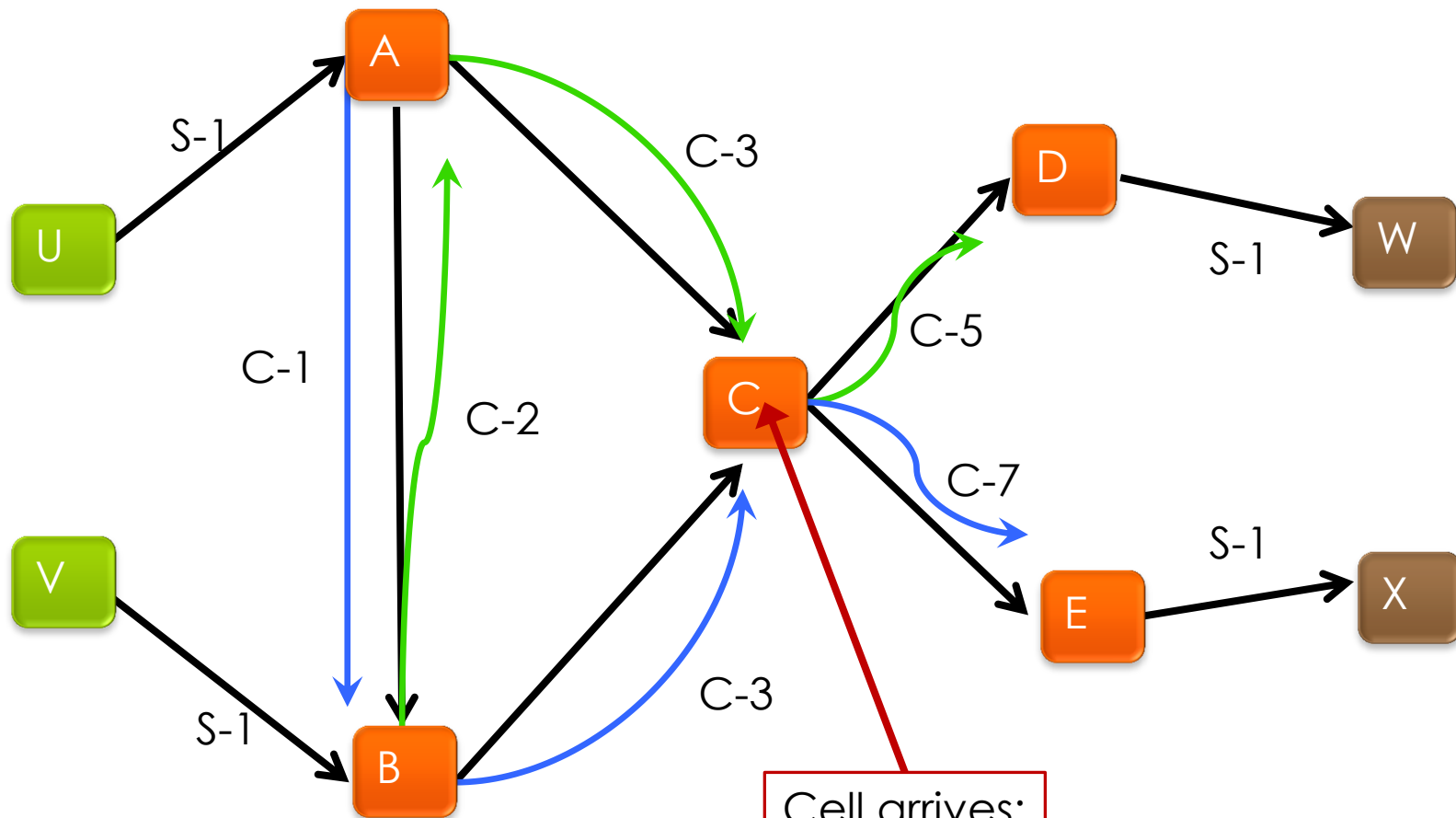
- A Relay Cell comes into a Relay TCP socket, it has:
  - Circuit #
  - Stream #
- How do we know what to do with it?



Cell arrives:  
C#: 3  
S#: 1

WHAT DO WE DO?

Route through green  
to D

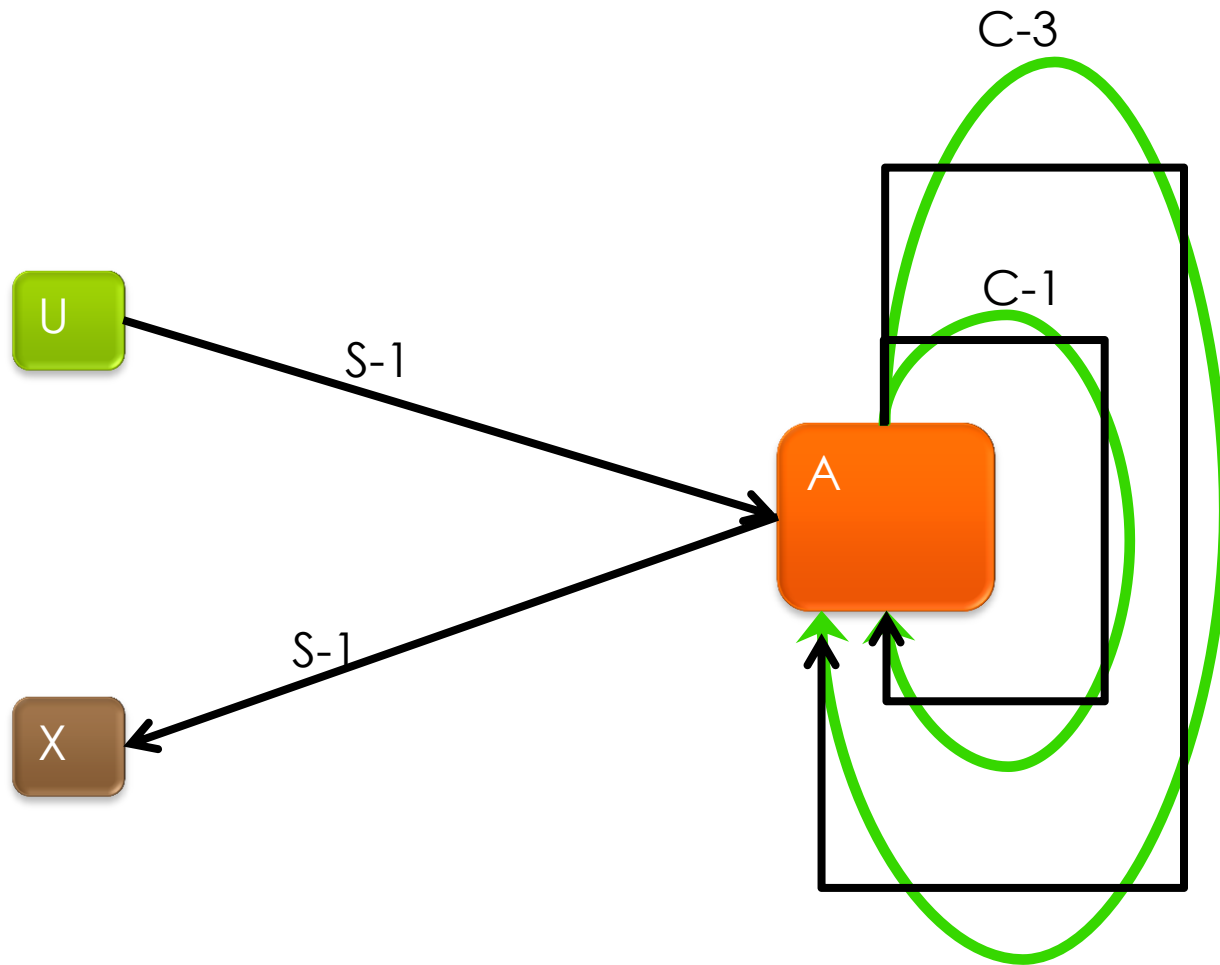


Cell arrives:  
C#: 3  
S#: 1

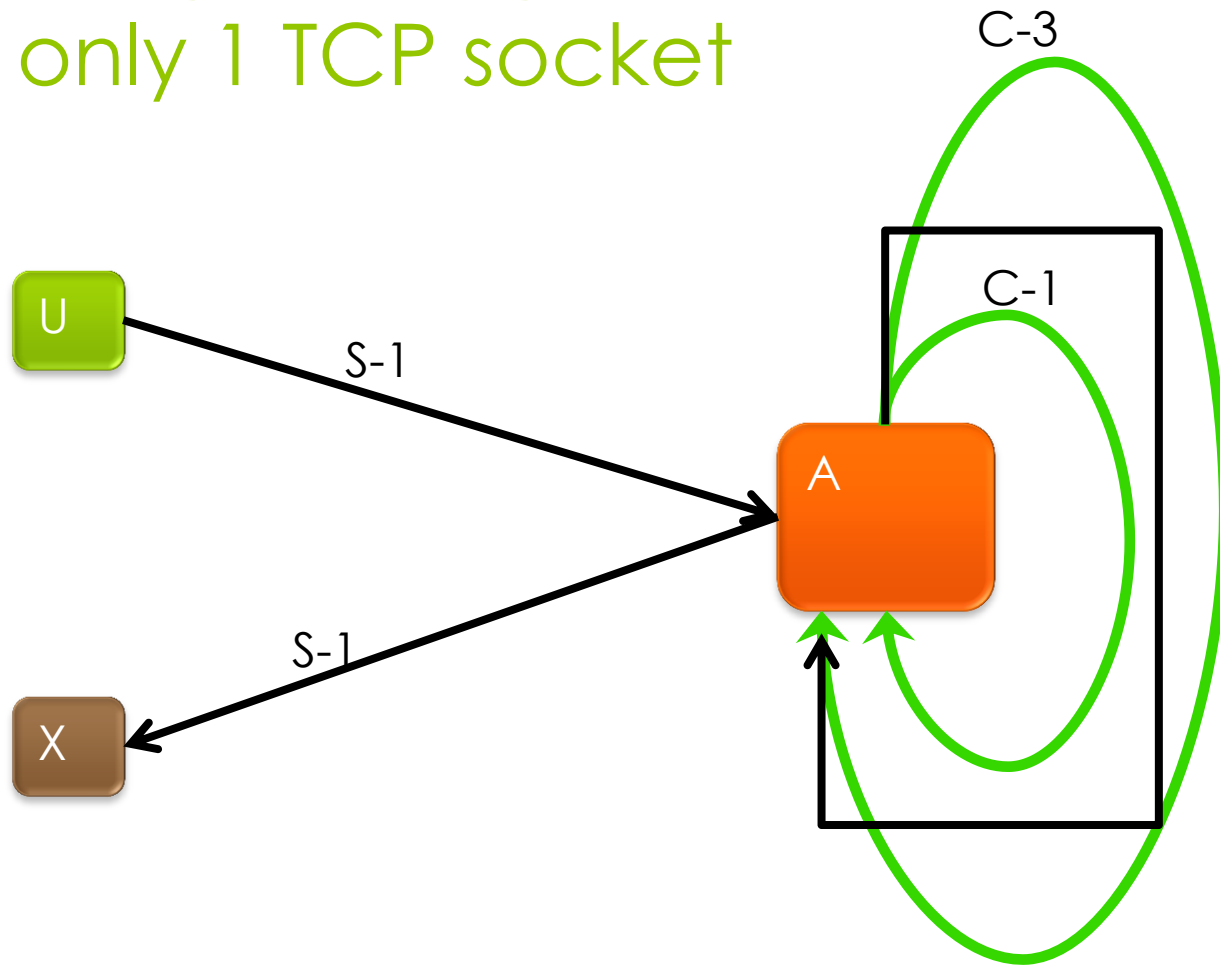
WHAT DO WE DO?

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>