

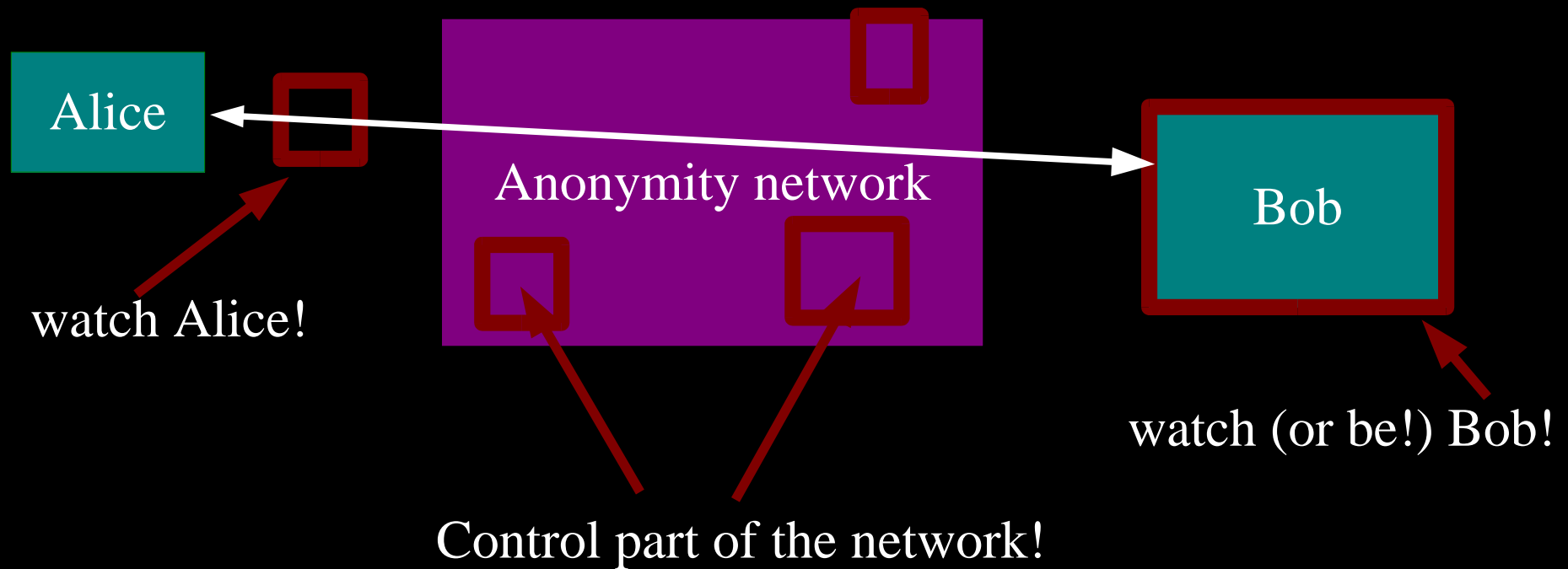
Tor and Wikipedia

Roger Dingledine
The Free Haven Project

Motivation

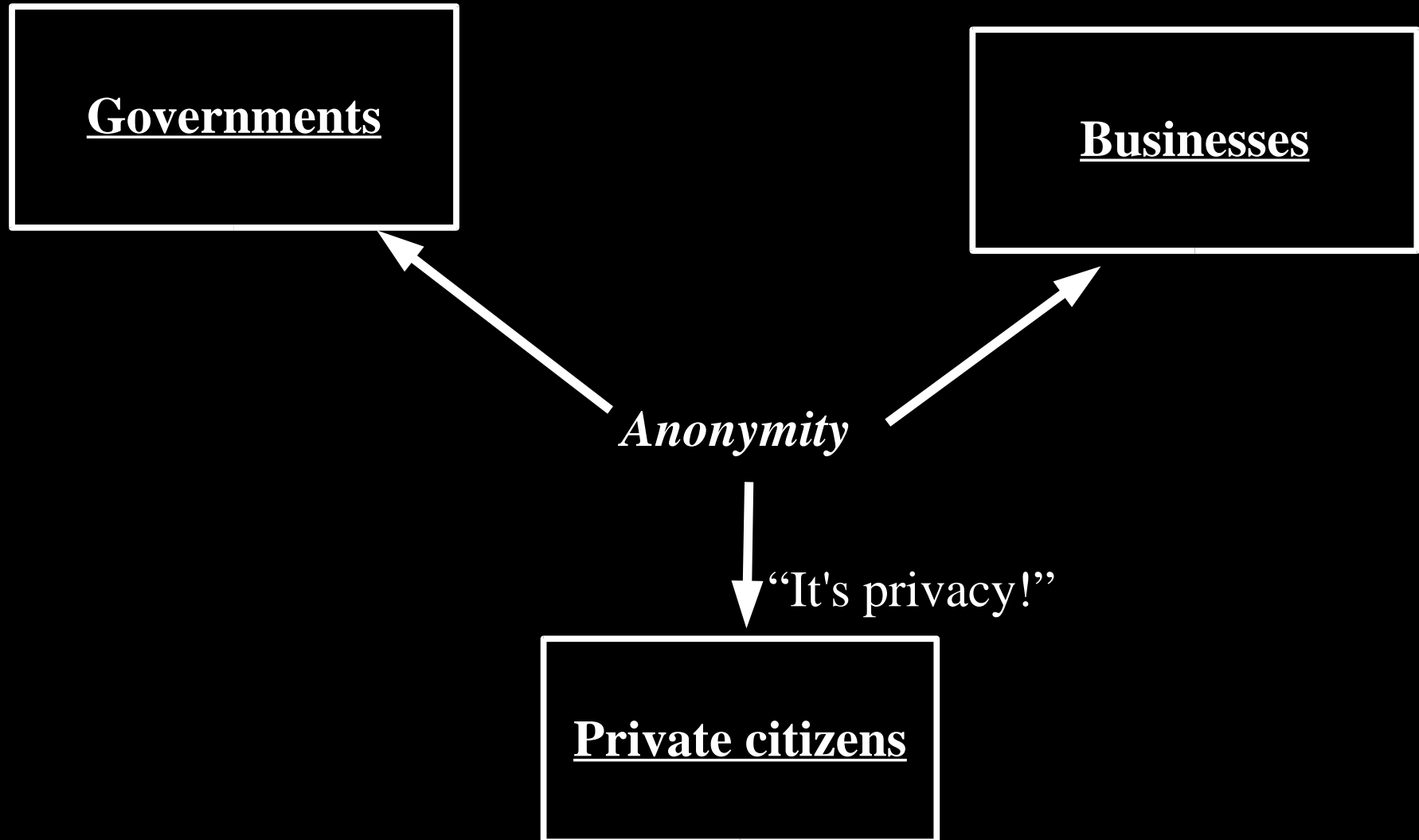
- China blocks Wikipedia; Wikipedia blocks Tor edits.
- Thousands(?) of Tor users would like to edit Wikipedia but can't.
- (I'm not saying you must allow Tor edits – I just want to explain some technical possibilities.)

We have to make some assumptions about what the attacker can do.

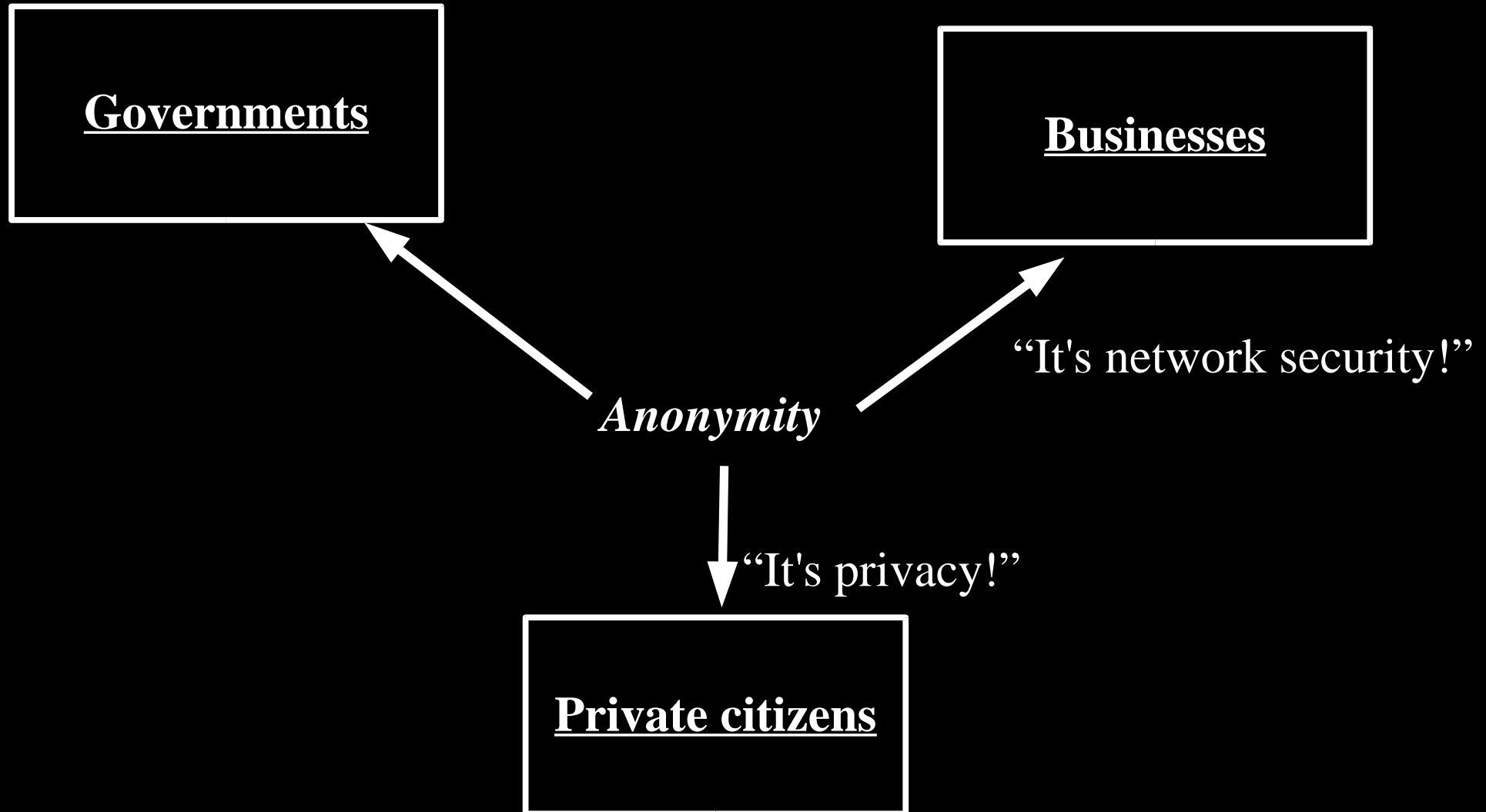


Etc, etc.

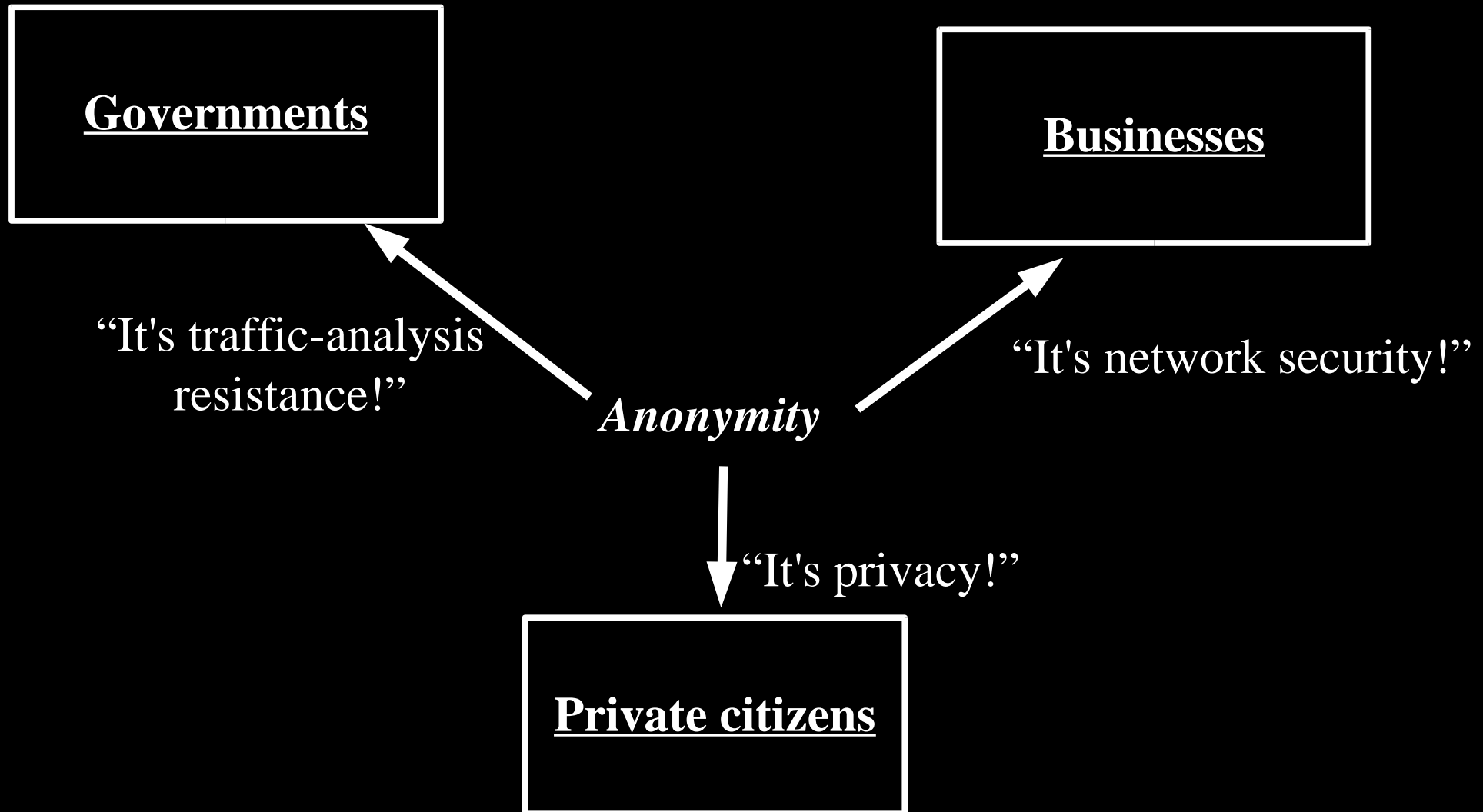
Anonymity serves different interests for different user groups.



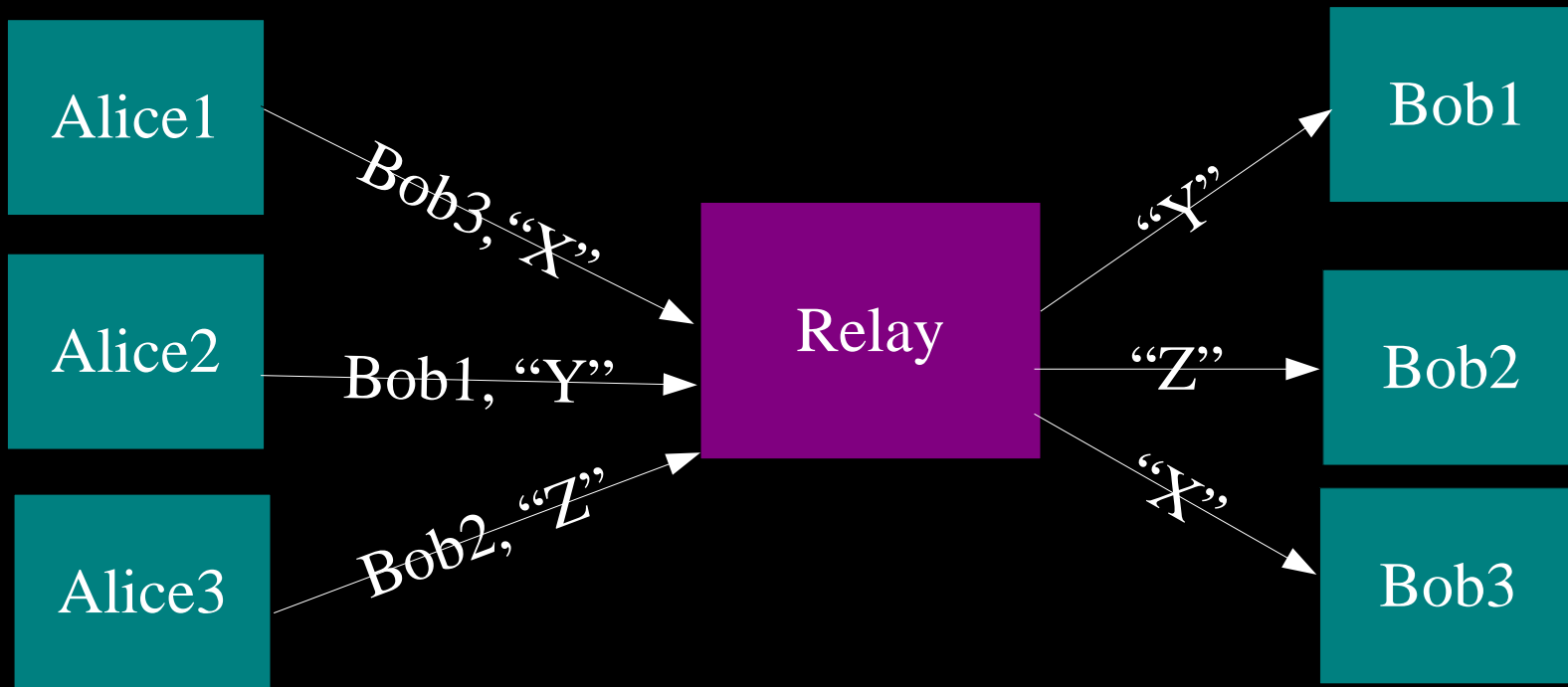
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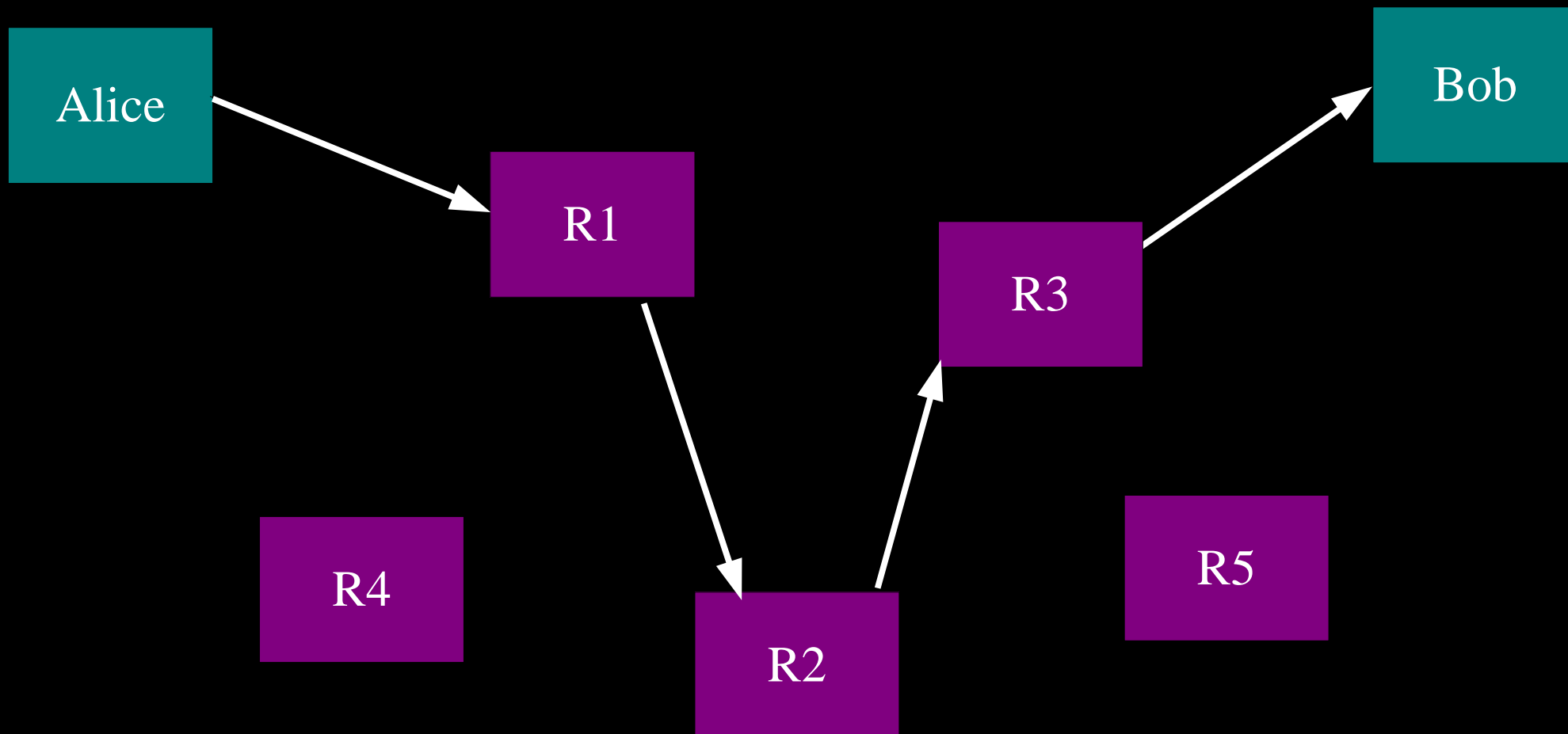


The simplest designs use a single relay to hide connections.

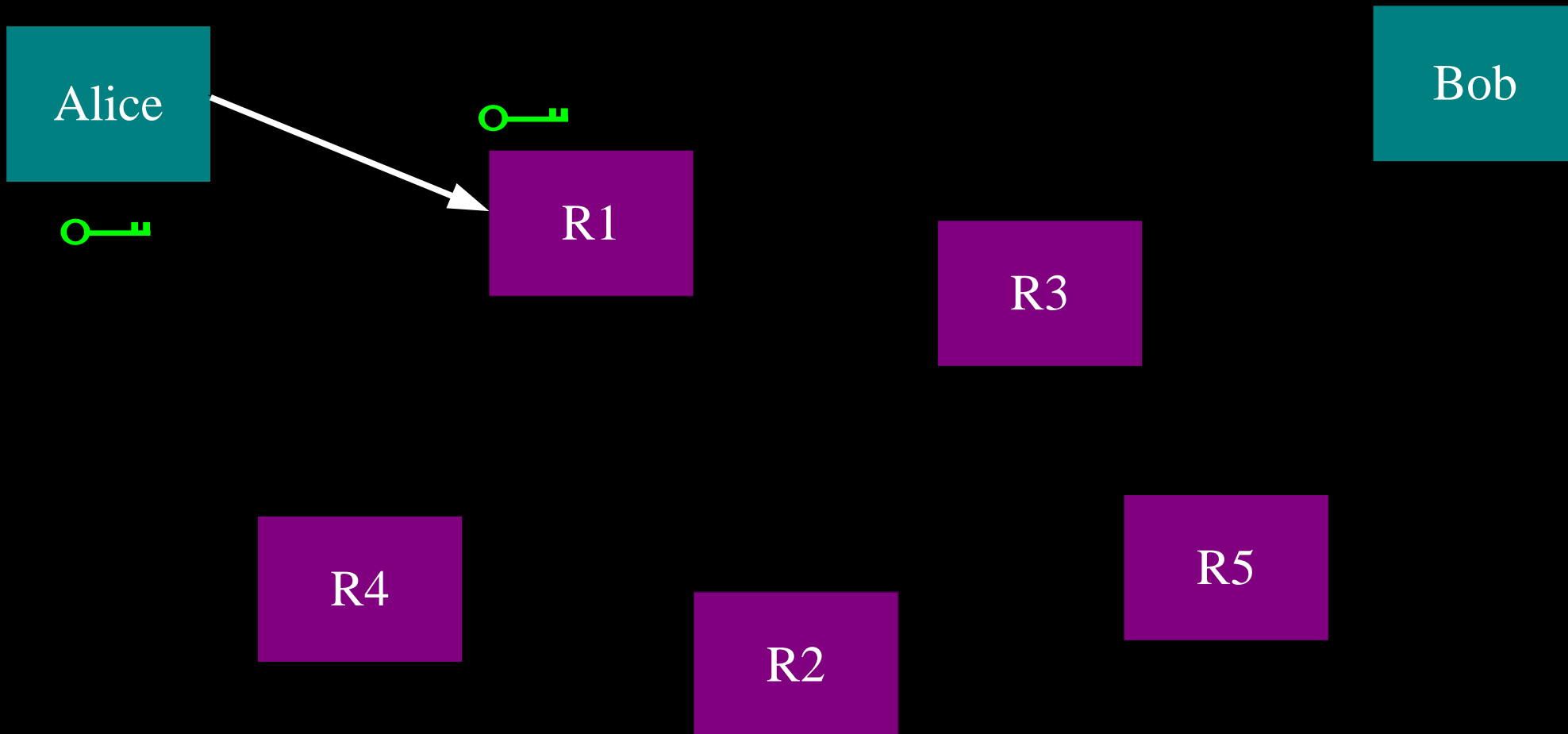


(ex: some commercial proxy providers)

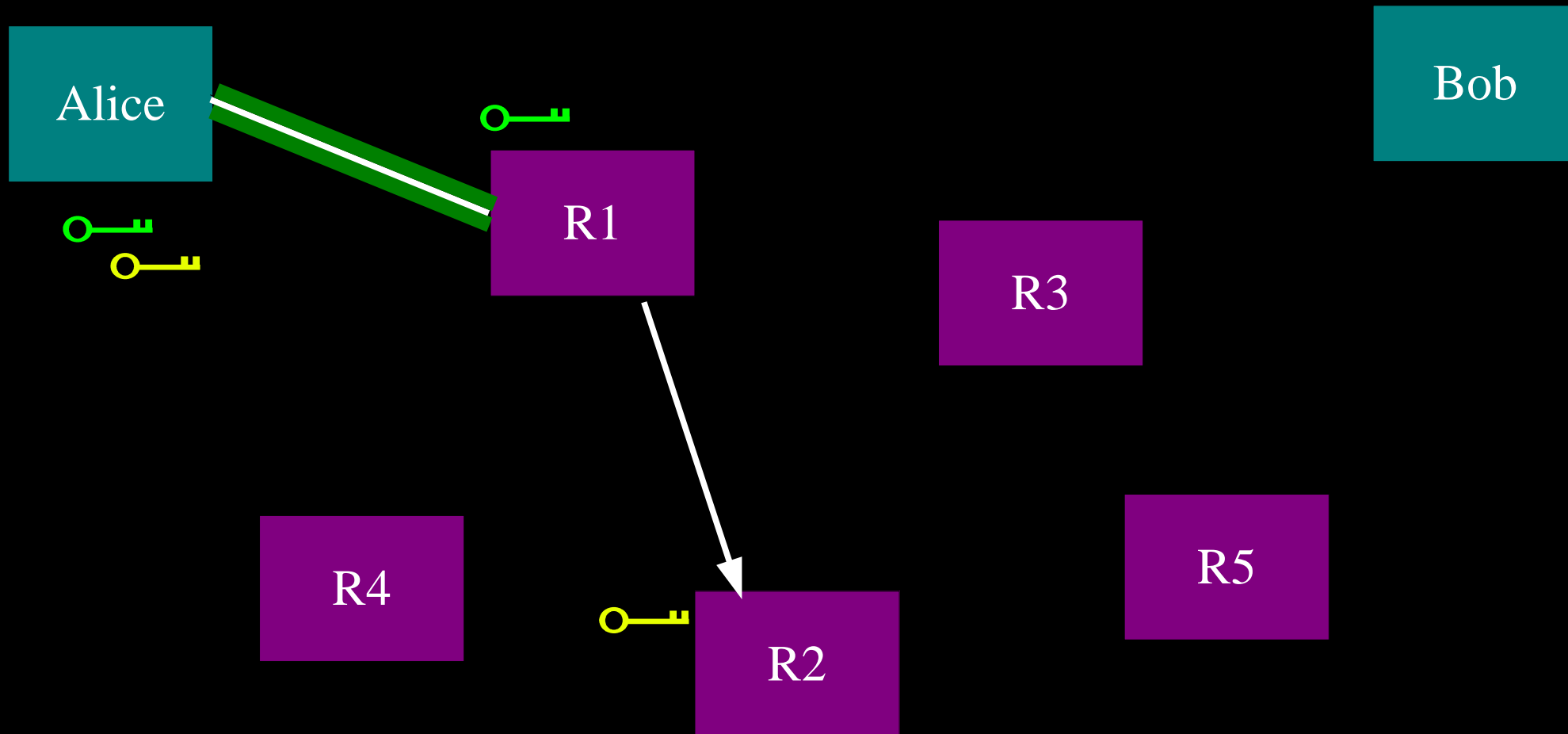
So, add multiple relays so that no single one can betray Alice.



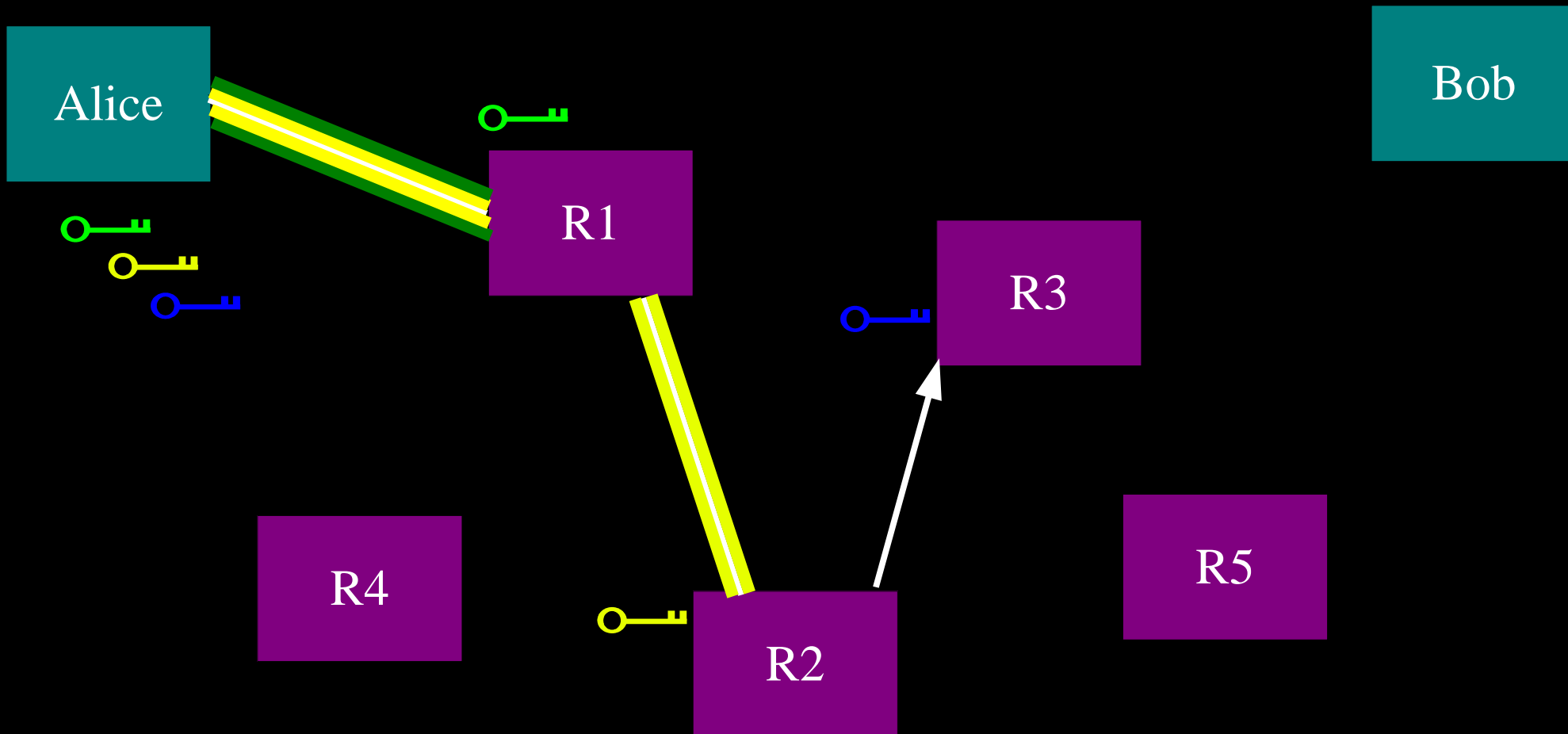
Alice makes a session key with R1



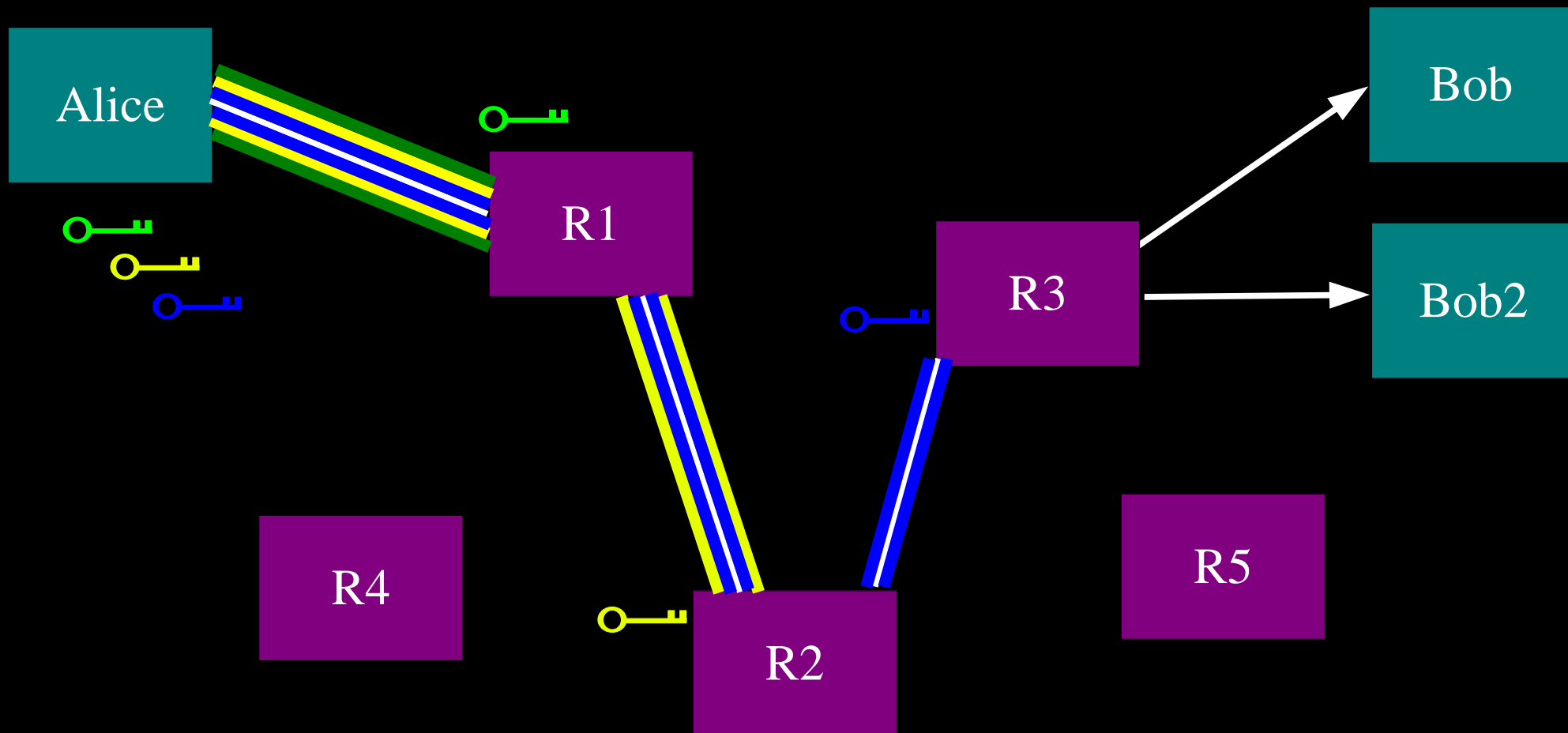
Alice makes a session key with R1
...And then tunnels to R2



Alice makes a session key with R1
...And then tunnels to R2...and to R3



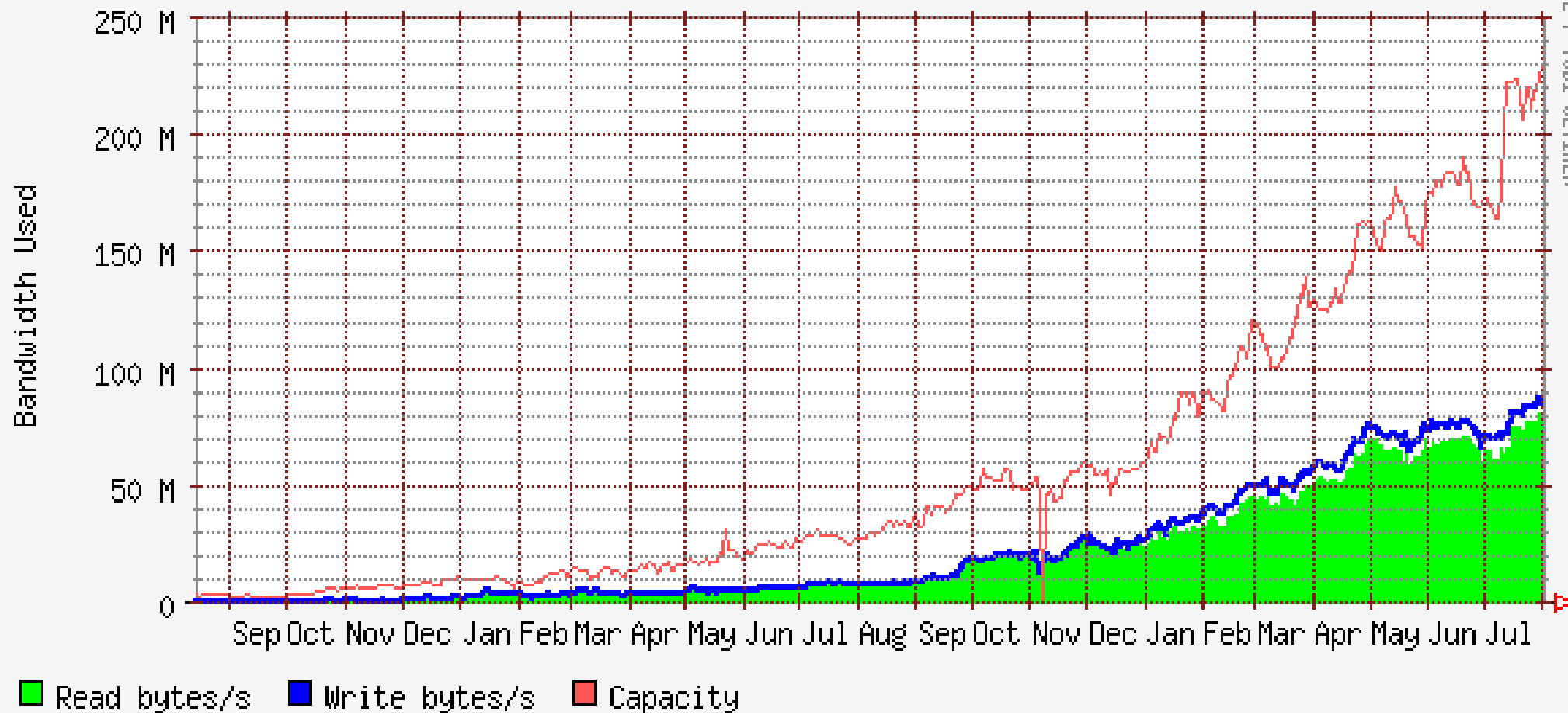
Can multiplex many connections through the encrypted circuit



Some problems with IP addresses as authenticators

- AOL has a dozen IP addresses.
- Open proxies, misconfigured computers, botnets, ...
- Dynamic IPs
- Universities (and countries!) with only a few IP addresses
- Tor

Total Traffic



Tor and Abuse

- Tor has hundreds of thousands of active users these days, and pushes >600Mbps of traffic, mostly web browsing.
- We have our share of jerks, just like the Internet in general.
- If an anonymity system works well, nobody hears about it. So “hearsay” is not on our side.

Bug 550 and its solution

(Thanks Tim!)

- Two new config options:
For some IP addresses,
 - Let people edit, but only if they're logged in.
 - Don't let people create new accounts.

Still some problems

- People can create accounts elsewhere and “spend” them at once.
- People who don't have unblocked IPs still lose.

Key concept

- Add speedbumps only for blocked IPs. Yes, IP addresses can give you a hint, but they're not authenticators.
- 1) edits need to prove that they're worthwhile; or better,
- 2) accounts need to prove that they're worthwhile.

But slowing down users is bad!

- AKA: “it's hard to do CAPTCHAs that work for blind people”
- You're blocking them completely right now.
At least this way, we let some of them edit.

How much abuse then?

- “But there will be so much abuse to wade through, this can't possibly work.”
- If the abuse doesn't go directly to the website, the jerks will go to a new avenue – so the number of edits/accounts we need to approve will be pretty much the actual number.