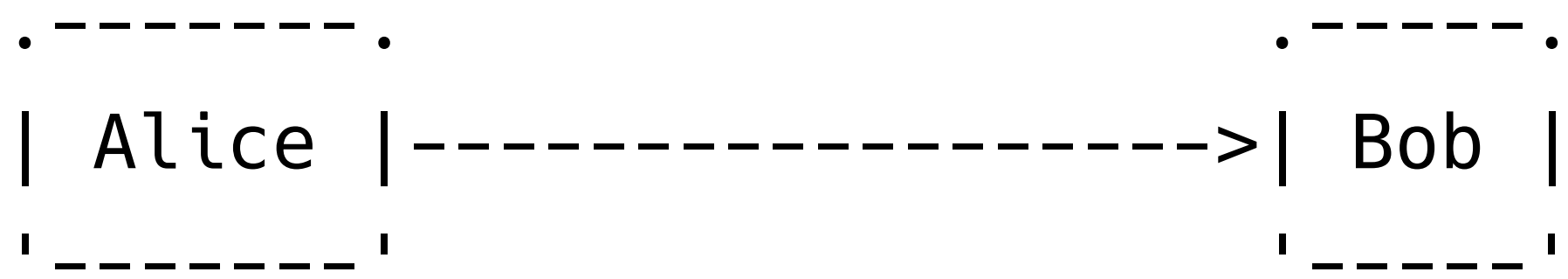
What can an onpath attacker do?

draft-richardson-saag-onpath-attacker

Michael Richardson <mcr+ietf @ sandelman.ca>
Jonathon Hoyland <jhoyland @ cloudflare.com>

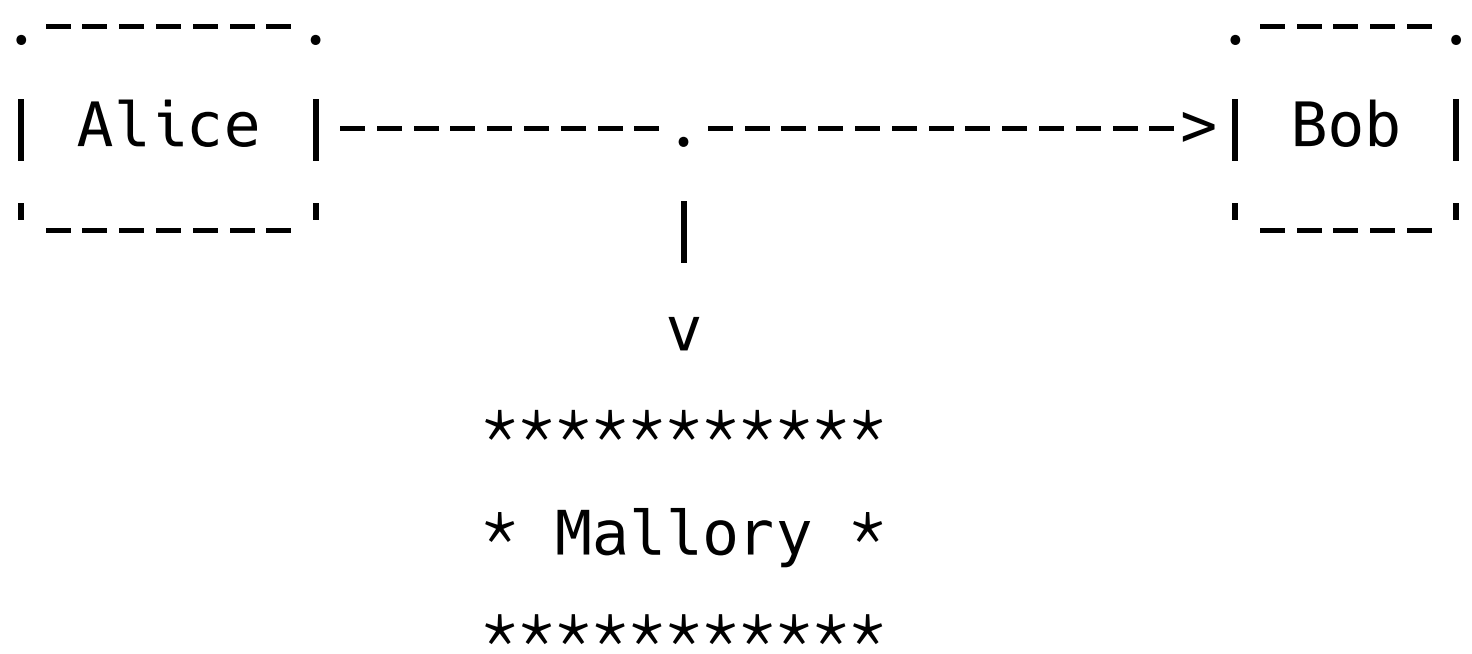
For discussion.

Alice and Bob

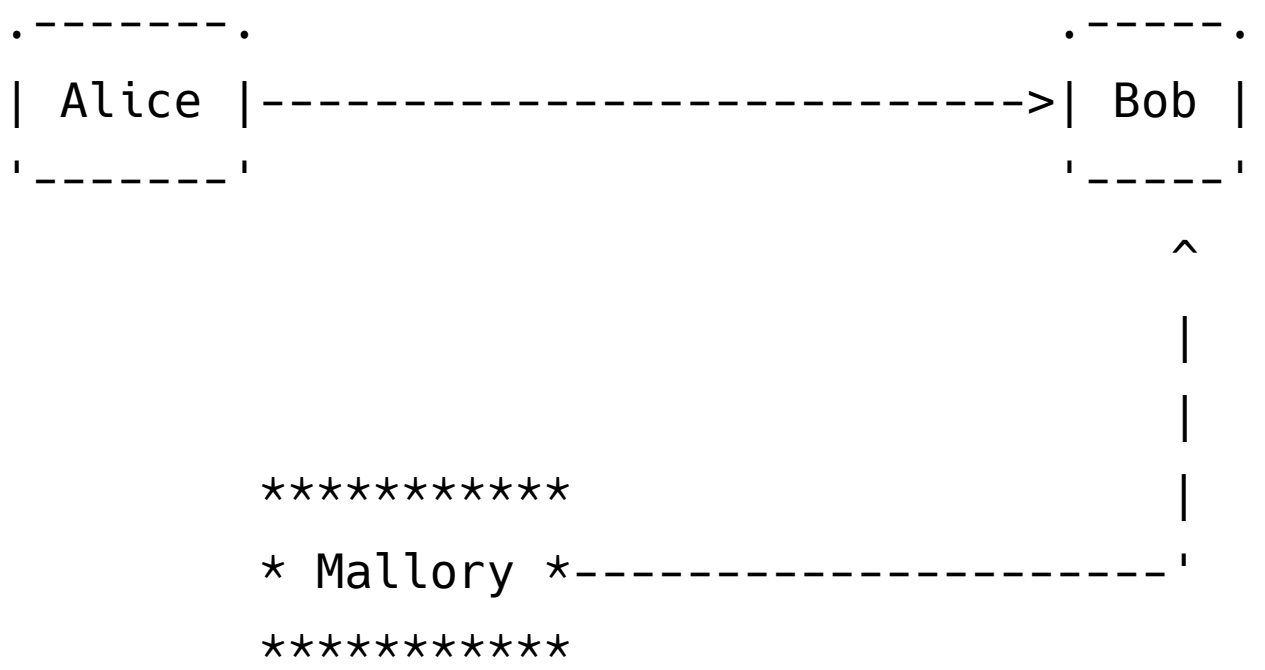


Alice and Bob and Mallory (1)

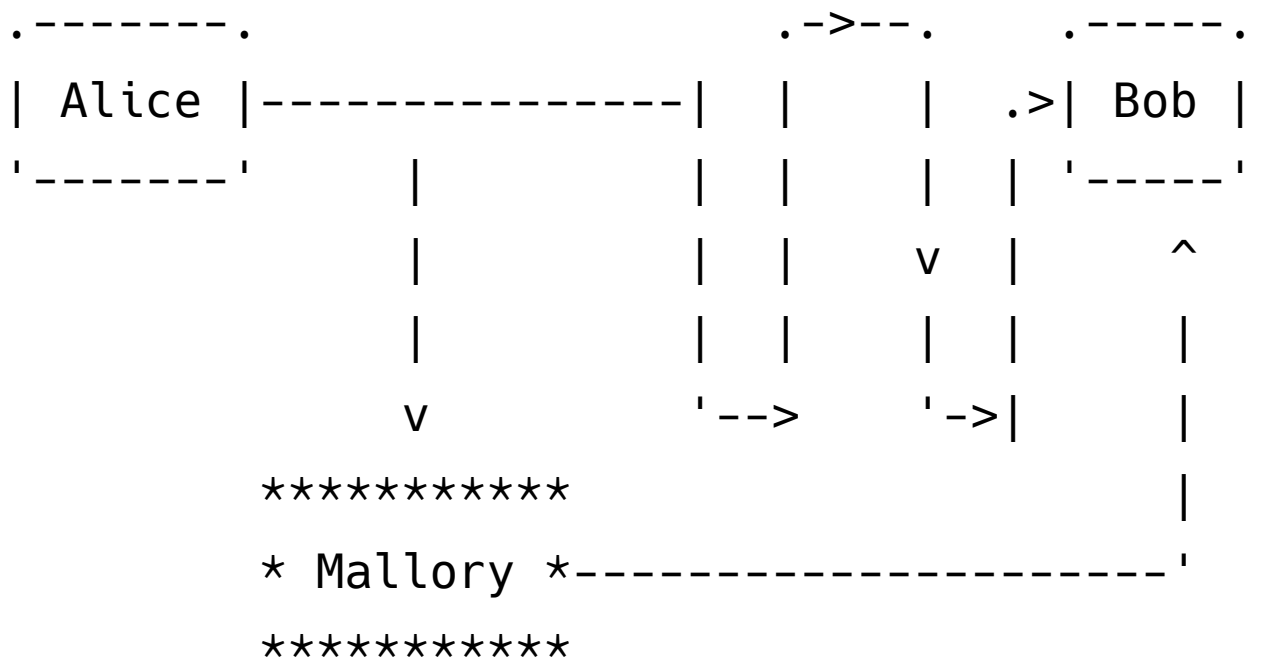
Alice and Bob and Mallory (2)



Alice and Bob and Mallory (3)



Alice and Bob and Mallory (4)



Literature!

- (1) is a Dolev-Yao attack
  - view, delete and modify messages
- What do we call (2), (3), and (4)?
  - (2) can view, but not delete or modify
  - (3) can not view, but can send new ones
    - TCP SYN cookies, for instance, defends against (3)
  - (4) is a variation of (2), has been seen in the wild through BGP attacks

Proposals

- Replace “MAN” with “Mallory” (not sure who to blame here)
- Retains MITM TLA.
  - MITM is Dolev-Yao attack.
- “on-the-side” (2)
- “in-the-rough” (3)
  - “rough” is a golf term

Proposals

- From QUIC:
  - “on-path”
  - Limited-on-path
  - off-path
- Council of Attackers
  - Malicious messenger
    - Who rewrites messages sent
  - Oppressive observer
    - “uses your information against you”
  - Off-path attacker

Discussion

- Do **we** need to do anything?
- This is a higher level question than SECDISPATCH, at this point.