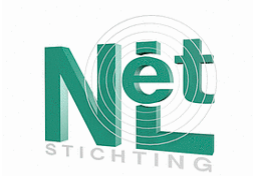

Turtle: Safe and Private Data Sharing

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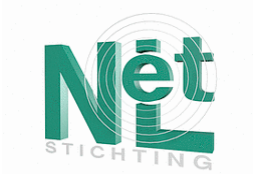


Motivation

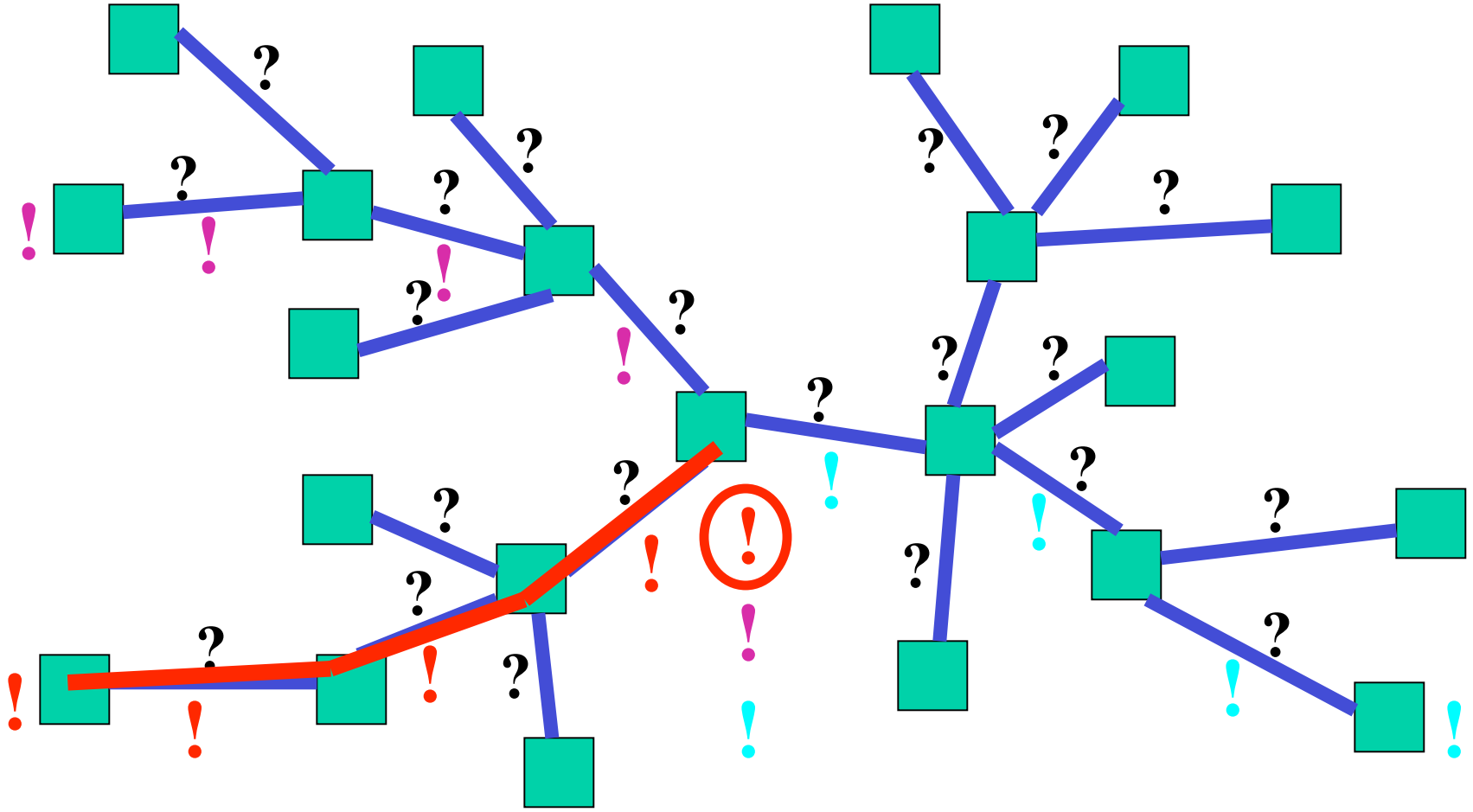
- Use p2p for safe sharing of sensitive data
  - an adversary (censor) attempts to prevent this
- Current solutions - anonymizing p2p networks
  - open connectivity => any 2 nodes may interact
  - good nodes interacting w. censor nodes => exposure
  - exposure => potential legal harassment
  - legal harassment => people don't use it!
- Can we do better?

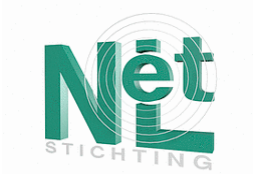
Solution - Turtle

- Create the P2P overlay based on social links
- Communication between links is encrypted
  - "Friend" nodes agree on keys out-of-band
- Both queries and results go hop-by-hop

Data exchanged **only** between **trusted** parties!

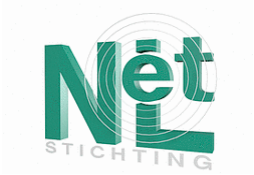
Turtle





Security properties

- Only trusted and authenticated parties can interact
- Each user is his own trust root
- Interesting security properties
  - Node compromise causes **localized** damage
  - Immune to Sybil attacks
  - Good protection against DoS attacks



Current Status

- Prototype Turtle client software available
  - designed as a plug-in for the GiFT p2p daemon
  - http://www.nlnet.nl/project/turtle/
  - http://sourceforge.net/projects/turtle-p2p/

Thank you!