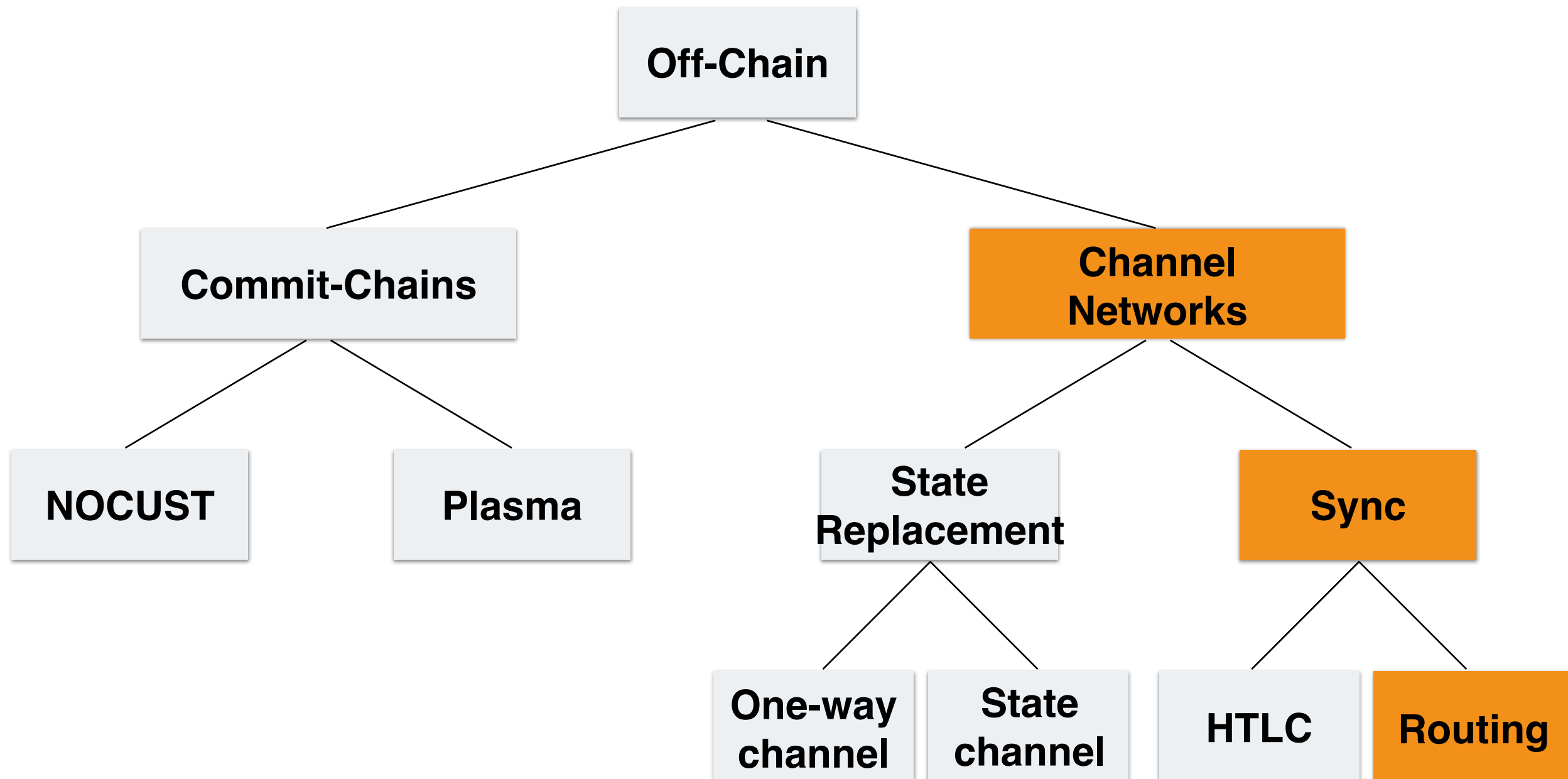
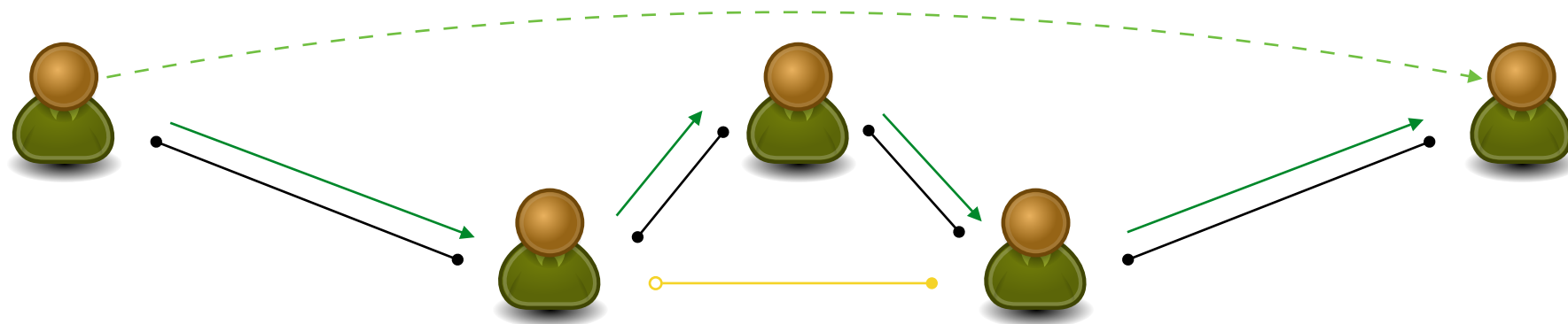


Channel Networks Routing

Which Off-Chain Solution?

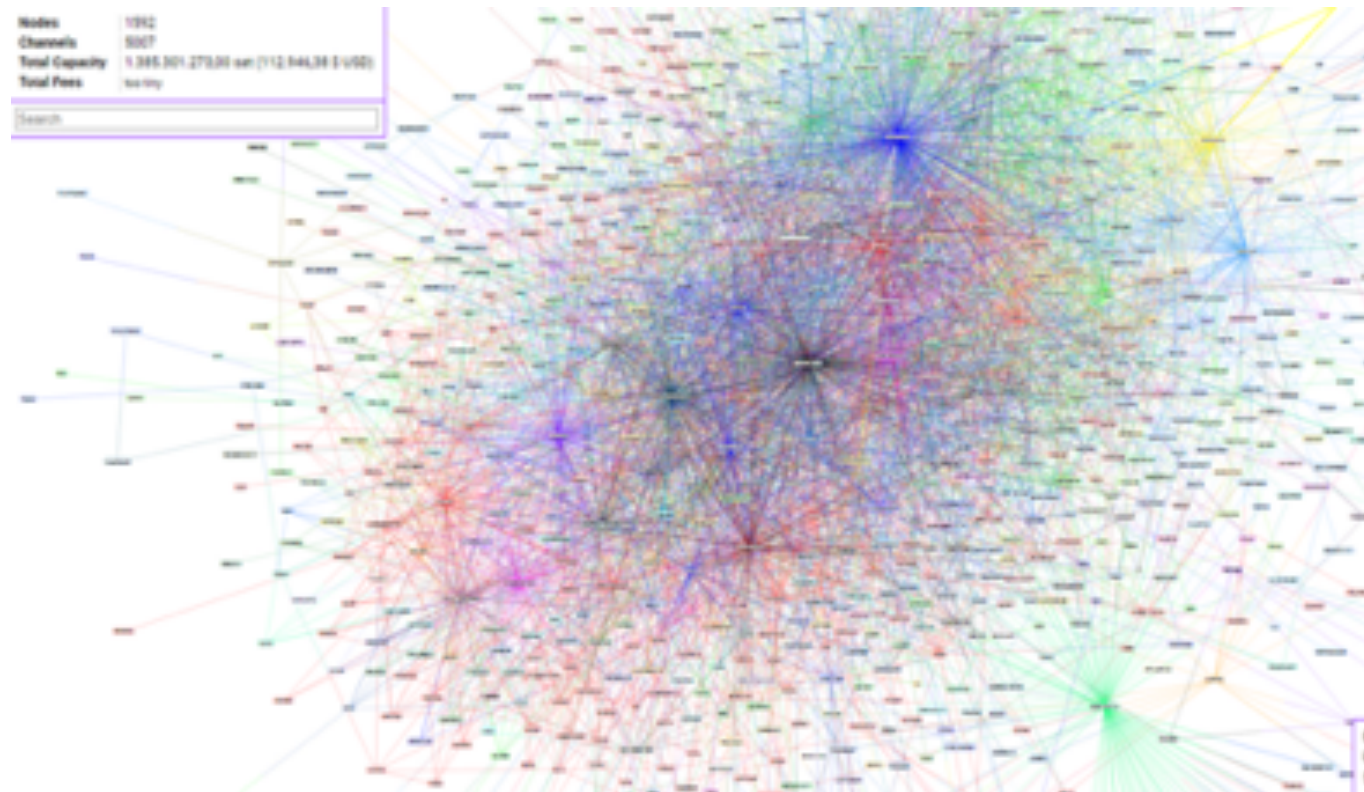


Payment Channel Network - Routing



Route Finding

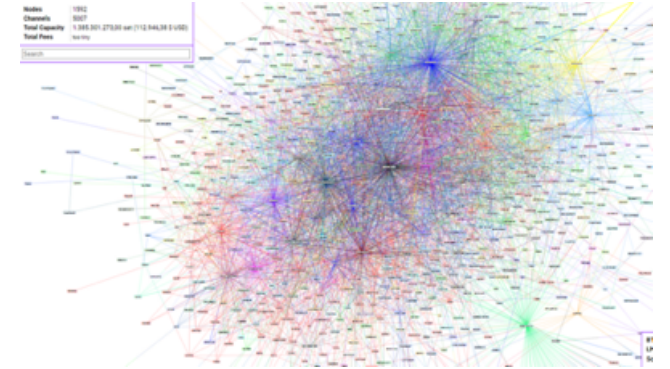
Payment Channel Network - Routing



The blockchain keeps a **record** of which channels are open

Channels are **advertised** via a gossip protocol

Routing Properties



- **Scalable:**

The routing algorithm should remain effective and efficient for large-scale PCN and high transaction rates.

- **Effectiveness:**

Given the network topology, the routing algorithm should find the path that will likely be successful.

- **Efficiency:**

The overhead of path discovery should be low in terms of communication, latency, and computation.

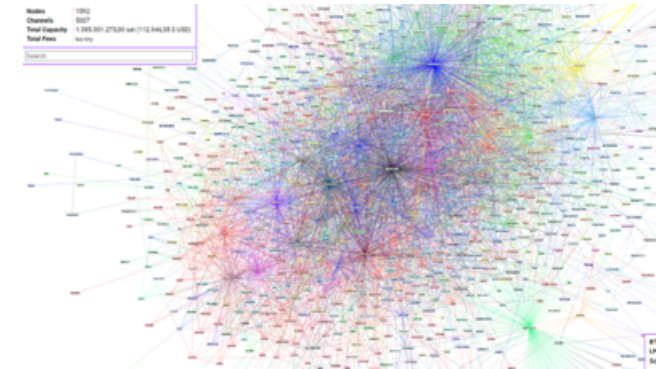
Routing Approaches



Topology is known.

Source-routing

Sender computes best path, during the transfer, each hop is told the identity of the next hop.



Topology is **not** known.

Per-hop routing

Every hop is aware of the final destination and they chose the next hop.

Silent Whispers by *Roos et al.*

Routing and Privacy

- **Value-Privacy:**

Find paths without revealing the value of a transfer.

- **Transfer-Privacy:**

Sender and receiver privacy should hold.