Mixing based privacy mechanisms are insufficient

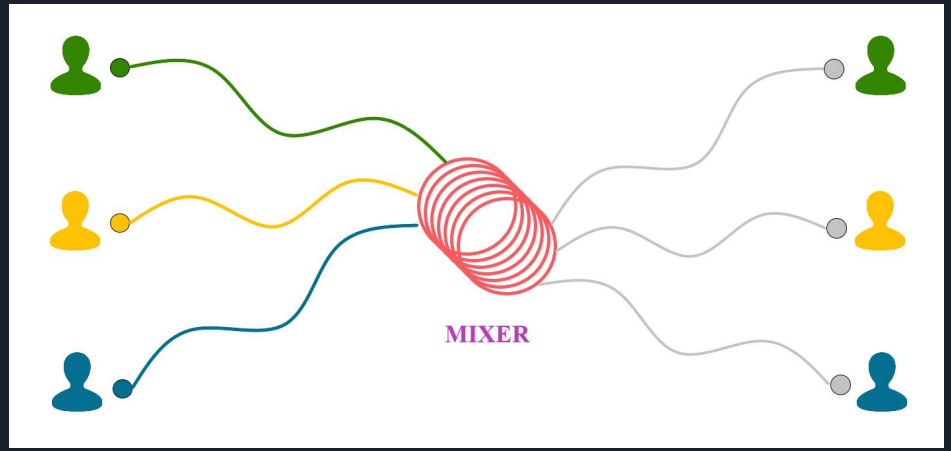
Presentation by Mudit Gupta

https://mudit.blog/

Mixing what?

There are two main components in mixing based privacy mechanisms.

1. Unlinking senders and receivers
2. Masking the transaction amount



Pic credit: Devashish Tomar

Linking the unlinkable transactions

- Anonymity set is limited in size
- Churning can help
- Analytics companies have access to more data than normal users
- Every transaction that gets de-anonymized reduces anonymity of others
- Bad actors can poison the anonymity set
- A big enough network of nodes can collect extra information over time

Attack on Wasabi

https://twitter.com/SamouraiWallet/status/1153253164298227713

FloodXMR: Low-cost transaction flooding attack with Monero's bulletproof protocol

"An attacker can take advantage of Monero's Bulletproof protocol, which reduces transaction fees, to flood the network with his own transactions and, consequently, remove mixins from transaction inputs. Assuming an attack timeframe of 12 months, our findings show that an attacker can trace up to 47.63% of the transaction inputs at a cost of just 1,746.53 USD. Moreover, we show also that more than 90% of the inputs are affected by our tracing algorithm."

https://eprint.iacr.org/2019/455.pdf

Mixing based privacy mechanisms are awesome but don’t blindly trust them.

Thank You!

Reach out to me
Email: hi@mudit.blog
Twitter: Mudit__Gupta
Github: maxsam4

Presentation by Mudit Gupta

https://mudit.blog/