Merged Mining

Merged Mining

- Mining typically exclusive
- Each attempt aimed at a Bitcoin block
- How to start a new blockchain with the same Proof of Work algorithm?

Sha256
based PoW

20'000'000 Tera Hash

BoringCoin

Sha256
based PoW

20 Tera Hash

Merged Mining

- Mine a Bitcoin and an Altcoin block at the same time!
- Bitcoin coinbase transaction has no input (scriptSig).

Hash(prev | merkle_root | N) < target

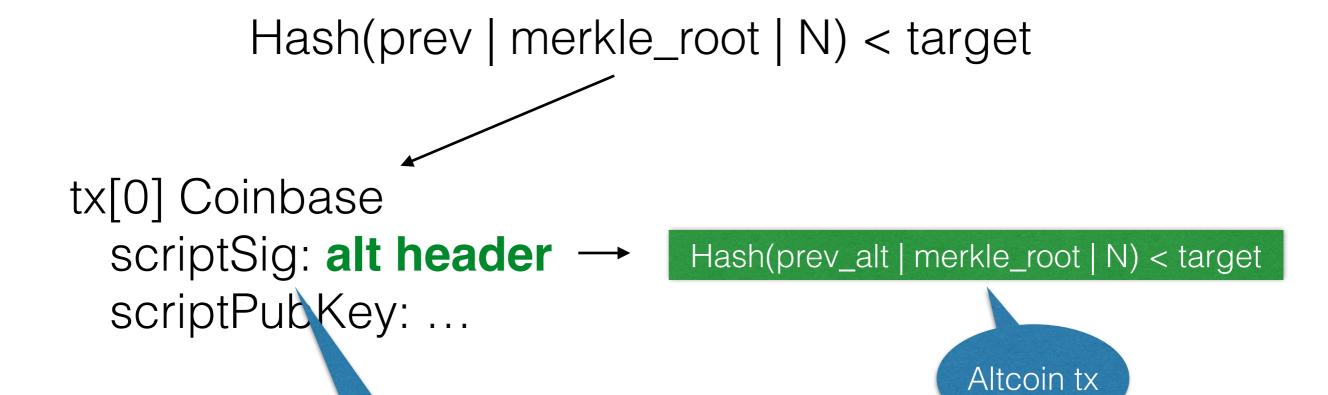Hash(prev_alt | merkle_root | N) < target

Merged Mining

$$Hash(prev \mid merkle\_root \mid N) < target$$

tx[0] Coinbase
   scriptSig: **alt header** →   Hash(prev_alt | merkle_root | N) < target

   scriptPubKey: …

Altcoin tx

tx[1]
tx[2]
…

Ignored by Bitcoin

Merged Mining

- **Advantages**
  - Easier bootstrapping of mining power

- **Disadvantages**
  - Cheaper for attackers (cf. CoiledCoins)
  - Inconsistency because miners might not validate transactions.

- Namecoin
  - One mining pool owned 60-70% hashrate