[Link to web article]

Front-running — the dark side of using blockchains.

Image from Shutterstock.com

What is front-running? In the blockchain context

(obviously, we aren't talking about a physical race, but they

both have some things in common), the term front-running occurs when due to programmatic knowledge that your pending blockchain trade transaction is highly likely to be executed (or confirmed) shortly on the blockchain and that such execution (or confirmation) of your trade transaction would affect the price of an asset immediately, a programmed trading bot quickly trades (buys or sells) before you by paying a higher gas price which speeds up the trade confirmation on the blockchain, this action leads to price manipulation. The bot then sells or buys the asset immediately after your own trades execute, reaping some easy profit for the bot due to the sudden change in the price of the asset.

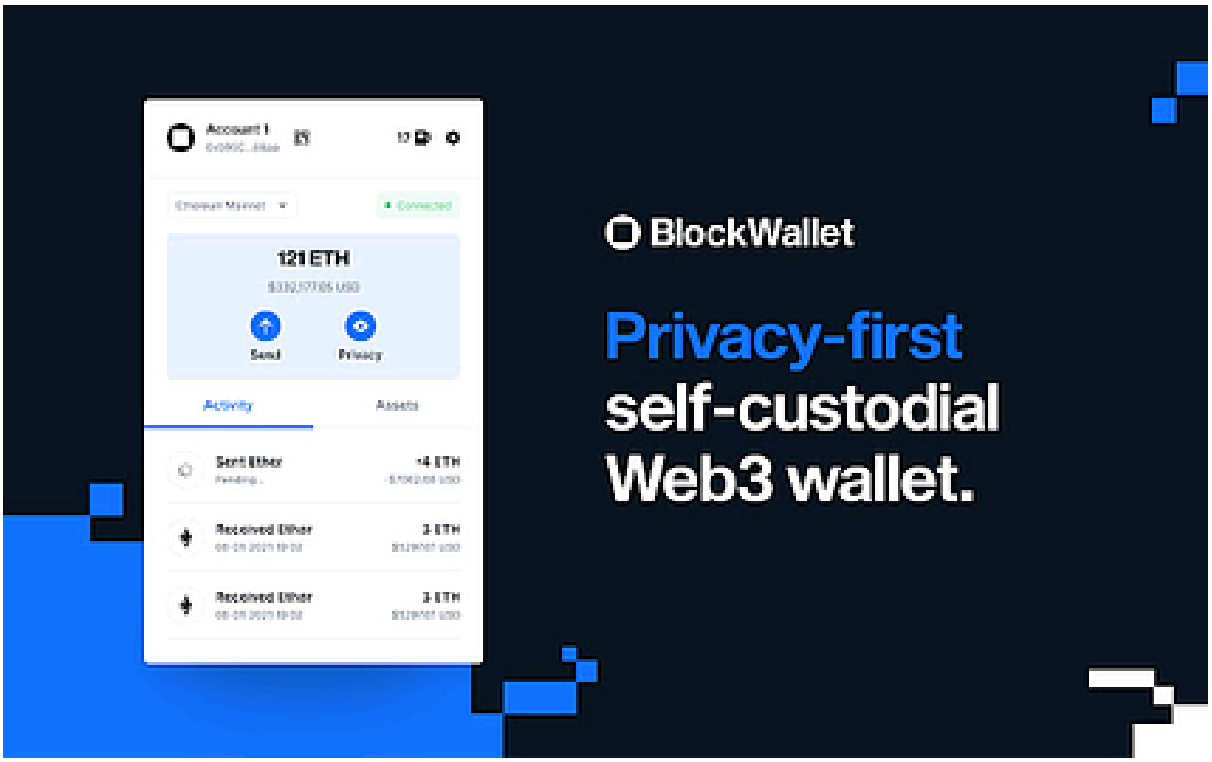
Here is a typical **example** that explains how front-running works,

Pablo is a trader, he wants to spend $50,000 worth of asset XYZ from an AMM Dex (Automated market maker

decentralized exchange), such as from Uniswap. Pancakeswap. He approves the transaction to make the purchase of the asset. However, there is usually a waiting period before his requested trade transaction would be confirmed on the blockchain. During this waiting period, Pablo's transaction stays in a mempool (memory pool) awaiting confirmation from the blockchain validators. Before it is confirmed, front-running bots can spot Pablo's pending transaction in mempool as a profitable MEV (maximum extraction value) opportunity. Immediately, they copy similar attributes of the trade, and front-run Pablo's original transaction by paying a higher gas price, resulting in price manipulation. Unknown to Pablo, he will be paying a higher price for his tokens, while on the other hand increasing the price the front-running bot would sell the tokens.

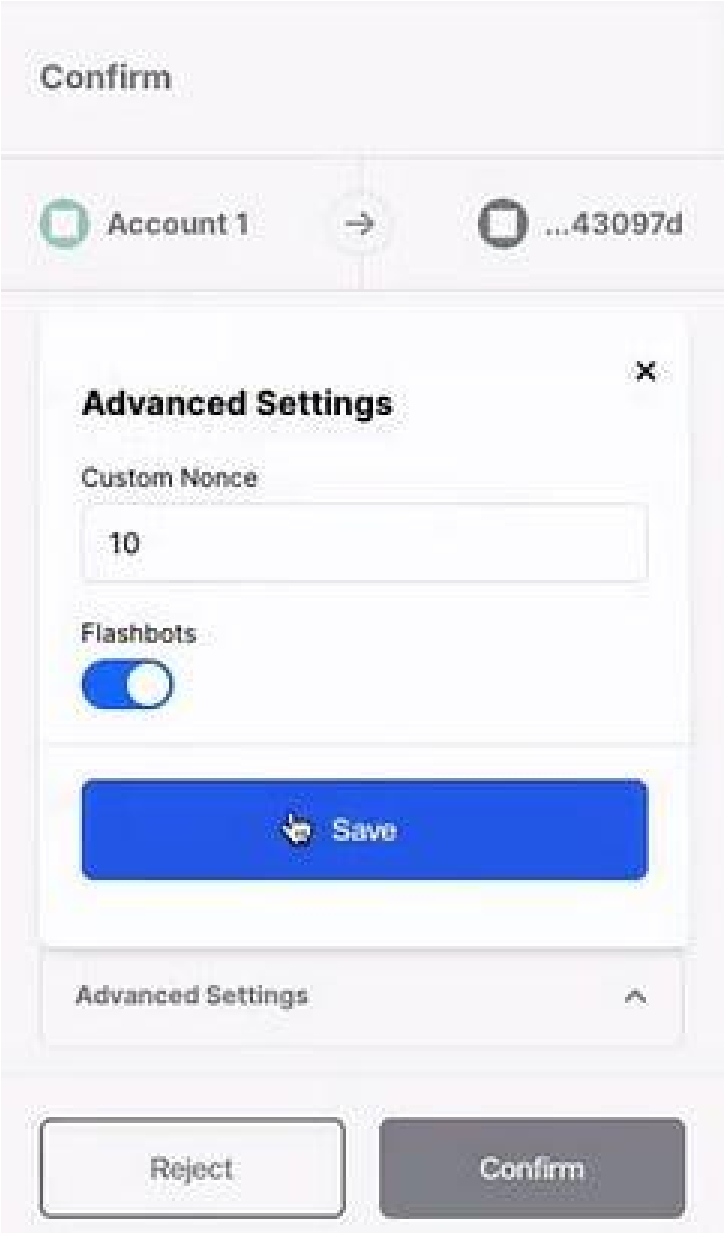
Flashbots protection — why it matters

There is still a debate among blockchain observers whether to consider this front-running practice to be **illegal and unethical** because of the surrounding nature in which the profit is made. If you are a user of dApps (decentralized applications), truth be told, you may have unknowingly been a victim of front-running flashbots in the past and possibly even the next time you interact with dApps unless you adopt innovative web3 wallet solutions like **BlockWalle**t that have built-in protection against flashbots.



How does it work?

All a user needs to do is to turn on the flashbots toggle switch in the advanced settings on the wallet anytime they intend to **sign** a transaction. BlockWallet will redirect the transaction to the blockchain validators in such a way that they would not be revealed to a public mempool that is visible to front-running bots. It is that simple.



BlockWallet Flashbot Protection Feature

Conclusion

Like with any technology, blockchain technology continues to be exploited by several actors for personal gain at the detriment of other users as can be seen from the front-running example cited earlier. The big question still remains as to the legality and ethicality of the actions of these actors. However, web3 users can have a measure of relief learning about privacy-centric solutions like BlockWallet equipped with features that help protect them from losing money to these actors. The blockchain space is rapidly developing with new solutions every day, it is thus quite essential to keep yourself informed about these solutions so as to make better-informed decisions the next time you interact on the blockchain.

Centralized or Decentralized, which exchange should you use? You can learn more about **decentralized exchanges** here in the very last article of the series.

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