

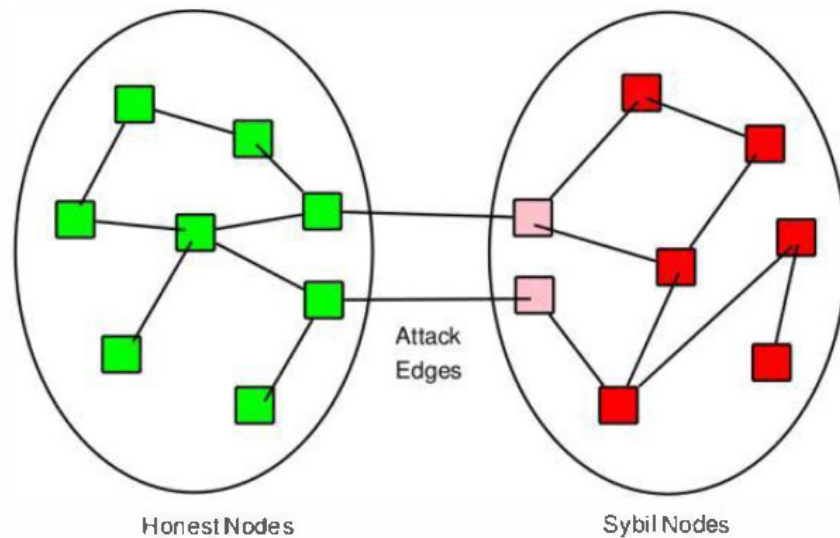
What is a Sybil Attack?

A Sybil Attack is a type of security threat on an online system where a person tries to take over the network by creating multiple accounts, nodes, or computers.

This sounds as simple as one person creating multiple social media accounts. But in the world of crypto, a more stark example is where someone runs multiple nodes on the blockchain network.

The word 'Sybil' in the name of the attack comes from a case study of a woman named Sybil Dorsett who was treated for 'Dissociated Identity Disorder' - also known as 'Multiple Disorder. personality'.

What problems can impersonation attacks cause?



Attackers can defeat real nodes on the network, if you have enough false identities (also known as Sybil identities). They may then refuse to receive or transmit blocks to block other users from the network.

In really large scale Sybil Attack attacks where attackers try to control the majority of the computing power in the network or the hash rate, they can perform a 51% attack. In such cases, hackers can change the order of transactions and prevent the transactions from being confirmed. They even have the ability to reverse transactions the victim did while under control, which could result in a double spend.

Over the years, computer scientists have spent a lot of time and research figuring out how to detect and prevent Sybil attacks, with varying degrees of effectiveness. Currently, there are no fully guaranteed defense measures.

So how do blockchains mitigate Sybil Attack attacks?



Many blockchains use different 'consensus algorithms' to help protect against Sybil Attack attacks, such as Proof of Work, Proof of Stake, and Delegated Proof of Stake.

These consensus algorithms don't really prevent Sybil Attack attacks, they just make it impossible for an attacker to successfully execute a Sybil attack.

For example, the Bitcoin blockchain applies a specific set of rules for creating new blocks.

One of the rules is that the ability to create blocks must be proportional to the total processing power of the Proof of Work mechanism. That means you have to really have the computing power needed to create a new block, which makes the attack very difficult and costly.

Since mining Bitcoin is so intensive, miners will continue to mine honestly, instead of trying to launch a Sybil Attack.

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