

## 2.3.2.1 Permissionless Networks

[return to Network Access Control](#)

**Permissionless Networks** require no permission to use them. In other words, there is no barrier to entry. Anyone can run a [node](#), run [mining](#) software/hardware, access a [wallet](#), and write data onto and transact within the [blockchain](#) (as long as they follow the rules of the blockchain). There is no way to censor anyone, ever, on a permissionless [Bitcoin](#) blockchain.<sup>1)</sup>

### Benefits of Permissionless Networks

- **Decentralized**

Permissionless networks are decentralized and distributed. In other words, no one [entity](#) can close or terminate the network, modify the content, or censor parts of it. The larger the distributed and decentralized networks and or history are, the harder it is to tamper with.<sup>2)</sup>

- **Transparency**

Users or nodes have complete access to the [ledger](#), transactions, and blocks in the blockchains, which allows for complete auditing of permissionless networks<sup>3)</sup>.

- **Anonymity**

In permissionless networks, users or nodes of the network are anonymized. Technically, permissionless networks like Bitcoin are pseudonymous, and not truly anonymous.<sup>4)</sup> Another way to achieve anonymity is using [The Onion Router \(Tor\)](#), however the blockchain must allow Anonymity.

- **Governance**

As a general rule, permissionless networks rely on [open source software](#), which is ruled by open source communities (see [todo](#)). The governance of the network is by consensus. [Consensus](#) is different for many of the permissionless networks (i.e., [Proof of Work \(PoW\)](#), [Proof of Stake \(PoS\)](#), [Proof of Authority \(PoA\)](#), etc).<sup>5)</sup>

- **Tokens**

Permissionless blockchains employ fat protocols that compensate network contributors with [Tokens](#). As the value and utility of the network increases, the value of the underlying tokens increases as well. This is the premise of [cryptoeconomics](#) and [Initial Coin Offering \(ICO\)](#) based fundraising. There are two predominant types of tokens today: monetary value tokens and utility tokens. Monetary value tokens are used in myriad ways as instruments for exchanging value. Utility tokens are akin to loyalty points: they have intrinsic value but no monetary value outside of that ecosystem.<sup>6)</sup>

- **Scalability and Performance**

For all the value blockchains bring to modern business processes, their Achilles heel often involves [scalability](#) and [performance](#). Both Bitcoin and Ethereum blockchains suffer from poor scores in this area. For example, a recent blockchain game called Crypto kittles clogged the [Ethereum](#) network. Having said that, these are just early teething troubles, and startups are experimenting with various strategies to address this issue. Hopefully it is only a matter of time before this issue

becomes a non-entity.<sup>7)</sup>

1)

“Permissioned vs. Permissionless blockchains: Who will win and will it matter?”, Dustin D, 22 March 2018, [Permissionless](#)

2) 4)

“Nuances Between Permissionless and Permissioned Blockchains”, Anant Kadiyala, 18 February 2018, <https://medium.com/@akadiyala/nuances-between-permissionless-and-permissioned-blockchains-f5b566f5d483>

3)

“Nuances Between Permissionless and Permissioned Blockchains”, Anant Kadiyala, 18 February 2018, <https://medium.com/@akadiyala/nuances-between-permissionless-and-permissioned-blockchains-f5b566f5d483>

5)

“Nuances Between Permissionless and Permissioned Blockchains”, Anant Kadiyala, 18 February 2018, <https://medium.com/@akadiyala/nuances-between-permissionless-and-permissioned-blockchains-f5b566f5d483>

6) 7)

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Last update: 2021/08/17 13:01

