

2.3.3.1.2.1 Authority Node

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Traditionally, the participation in [DIDO Node Networks](#) to perform tasks is permissionless requiring no outside authority from anyone or anything. Having permissionless access to a Node Network is one of the original guiding principles that is integral to the decentralized nature of DIDOs¹⁾.

Note: Unfortunately, there are drawbacks to this approach. Solutions involving a level of centralization for granting permission can provide benefits like increased speed because there is no need for the costly, time consuming consensus algorithms such as [delegated_proof_of_stake_dpos](#), [delegated_byzantine](#), [proof_of_authority_poa](#) and others. However, centralized permissioned systems are vulnerable to malicious attacks such as Denial of Service thereby undermining many of the “democratizing” aspects of the DIDO.

Networks making use of [proof_of_authority_poa](#) Networks define a fixed number of **Authority Nodes**. The number of Nodes and associated PoA designation is voted on by the PoA community or defined by the development team. Authority Nodes are similar to [Full Nodes](#) and can create and validate blocks. All other Nodes in the Node Network run as [Lightweight Nodes](#), depending on broadcasted data to participate in the blockchain.²⁾

[Iota](#) refers to Authority Nodes as **Permanodes** ([definition](#)) because they keep all transaction data even after [snapshots](#) are made (concept introduced by Iota³⁾)

¹⁾
S. Nakamoto, “Bitcoin: A Peer-to-Peer Electronic Cash System,” 24 May 2009. [Online]. Available: <https://bitcoin.org/bitcoin.pdf>.

²⁾
“Blockchain Nodes: An In-Depth Guide”, <https://nodes.com/>

³⁾
“Full node vs permanode”, Helmar, 5 January 2018, <https://iota.stackexchange.com/questions/782/full-node-vs-permanode/783>

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Last update: 2020/05/18 17:18

