

IOTA

[return to the de facto Standards area](#)

Source: [What is IOTA](#)

IOTA is a revolutionary new transaction settlement and data transfer layer for the [Internet of Things \(IoT\)](#). It is based on a new distributed ledger technology, the [Tangle](#), which overcomes the inefficiencies of current Blockchain designs and introduces a new way of reaching consensus in a decentralized [Peer-to-Peer \(P2P\)](#) system. Using IOTA, for the first time ever, people and machines can transfer money and/or data without any transaction fees in a trustless, permissionless, and decentralized environment. This means that even nano-payments are possible without the need for a trusted intermediary of any kind.

IOTA is the missing puzzle piece for the Machine Economy to fully emerge and reach its true potential. IOTA is envisaged to be the public and permissionless backbone protocol for the IoT that enables true interoperability between all devices.

Kinds of Nodes

Source: [What is the difference between a Light Node and Full Node?](#)

The IOTA GUI makes it possible to choose between a Full Node and Light Node. The Full Node automatically runs an IRI instance in the background, which in turn means that you need neighbors in order to participate in the Peer-to-Peer network to synchronize with the Tangle. If you run the Full Node, you have no “trust requirements”, as you are completely and independently participating in the network.

The Light Node makes it possible to connect to a remote Full Node (whether it is your own Full Node, or someone else's publicly provided), in order to get the latest state of the network, most importantly fetching two transactions for validation which are required for issuing a transaction. When running a Light Node, it should be noted that your seed never leaves your wallet, you are still required to perform the Proof-of-Work, and all the sensitive work (such as signing) is done client-side. It also should be noted that the public Full Node providers are often overwhelmed with Light Node requests, so in order to reap the full benefits of the IOTA feeless and fast transaction settlement and data integrity technology, it is recommended to run a Full Node and not have to rely on the public Full Node providers (think of it like hitchhiking vs. having your own car).

The IOTA Foundation

Source: [What is the IOTA Foundation](#)

The IOTA Foundation is the [Non-Profit Organization \(NPO\)](#), open-source driven organization behind the IOTA [Distributed Ledger Technology \(DLT\)](#) and other related technologies. The IOTA Foundation houses the academic researchers, developers, industry experts, and other engineering and business professionals working on the development and adoption of the IOTA protocol for the machine economy and the IoT industry. Apart from research and development, the Foundation also fosters the adoption of its technologies into real-world production use-cases at scale by providing an open, collaborative ecosystem where companies, startups and developers alike can innovate with the technologies and build proof-of-concepts, case studies and pilots together. The IOTA Foundation is organized into five divisions:

- **General administration:** Operations, communications, finance, human resources, and legal.
- **Social & Public Policy:** Social initiatives, collaborations with Governments and NGOs, and governmental regulations advocacy.
- **Research & Development:** Academic research, IOTA core protocol development, theory to working code, protocol standardization, and new technologies.
- **Ecosystem:** Community development, developer resources and advocacy, educational material, events and hackathons.
- **Business & Industry Streams:** Industry adoption, key account management, proof-of-concept development, strategic development, alliance management.

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