

# NODES & THE BLOCKCHAIN ECOSYSTEM



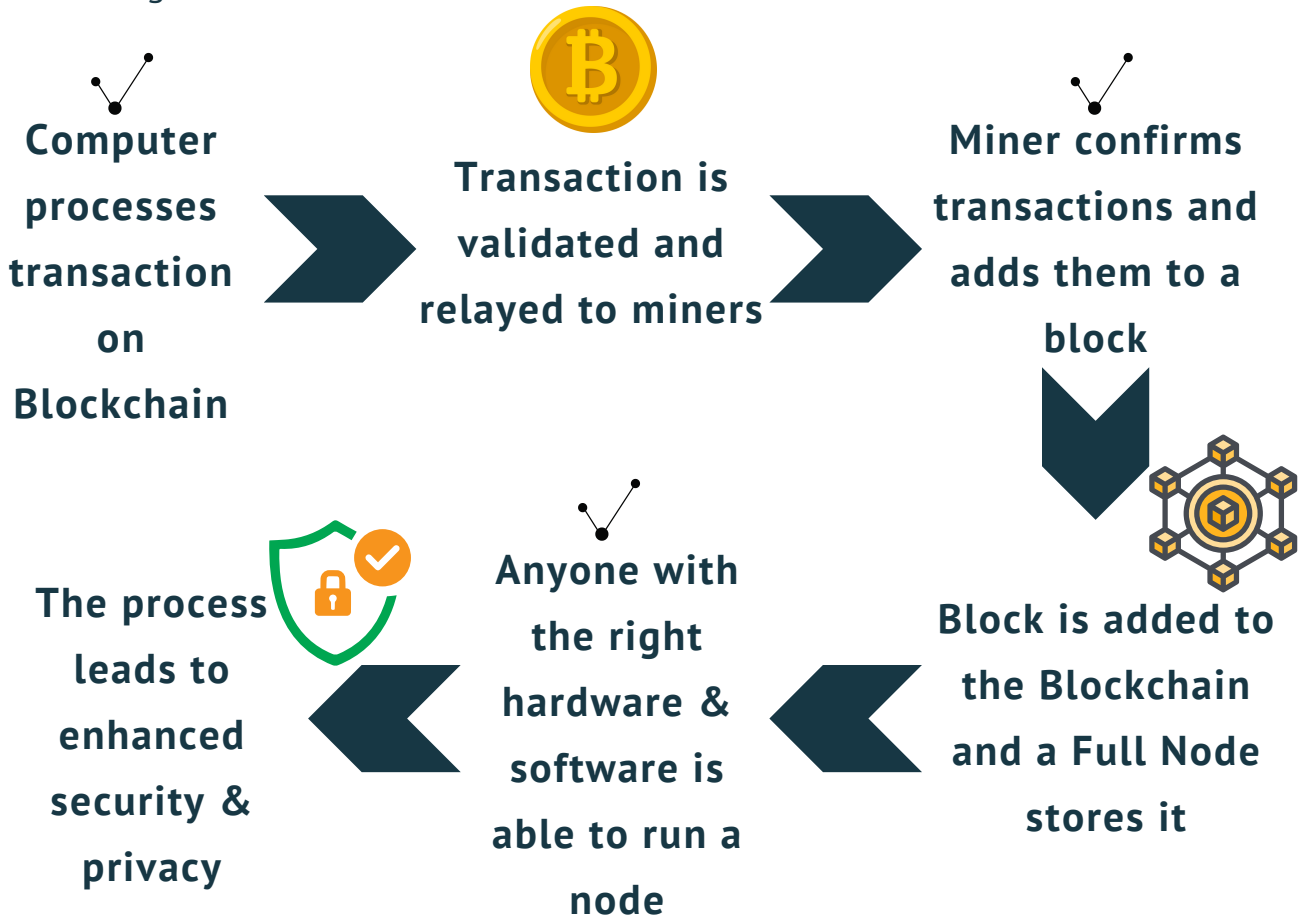
# NODES ARE VITAL TO THE BLOCKCHAIN SYSTEM

A Bitcoin node is a computer or device that runs a copy of the Bitcoin software. Nodes help maintain the integrity of the blockchain in a variety of ways. Nodes validate transactions and show as “pending” until a miner or mining pool picks them up to confirm the transactions into blocks. Double-spending, like double dipping, is when a user attempts to spend their cryptocurrency twice. Bitcoin nodes help prevent double-spending from occurring.

## NODE TYPES

Full

Lightweight



 indicates a node



# THERE ARE TWO MAJOR TYPES OF NODES: FULL AND LIGHTWEIGHT

**Full nodes:** has a complete copy of the blockchain; can vote on future of the network with majority rules

**Pruned Full nodes:** doesn't keep the whole blockchain; downloads blocks to a certain size then deletes old blocks only keeping the chain placement and headers

**Archival Full nodes:** retains the full blockchain; validates blocks and maintain consensus in the network; there are types which can add to the blockchain (stakers, miners, and authority) and ones that can't (masternodes)

**Lightweight nodes:** also known as simple payment verification (SPV) nodes allow ease of use; includes wallets which only download the block's header



**Stakers:** have proof-of-stake of the crypto, meaning they have “skin in the game” or are personally invested in the crypto

**Miners:** provide the hardware to solve the math problems then create a new block to add the transactions to the blockchain

**Authority:** elected by the community or organization and has proof-of-authority, the only ones who can add to the blockchain

**Masternodes:** don't add new blocks to the blockchain, used for transaction validation by performing verification on new blocks and perform other special functions












*Lightning nodes are a computer or software that connects and interacts with the main blockchain and Lightning Network.*



# SETTING UP A NODE REQUIRES

Software and hardware minimums, but anyone can do it. For example, Bitcoin has the software Bitcoin Core which will copy the entire blockchain from other nodes. Once the Initial Block Download (IBD) is completed, new blocks can be seen every few minutes. Running your own node gives you the perks of mining, privacy, and voting on the future of the blockchain.

## Requirements to set up and run a full node

Disk space:	System:
 350 GB	 Desktop
Download:	 Laptop
 500 MB/day (15 GB/month)*	 Some ARM chipsets >1 GHz
Upload:	Operating system:
 5 GB/day (150 GB/month)	 Windows 7/8.x/10
Memory (RAM):	 Mac OS X
 1 GB	 Linux
 Plus, a one-time 340 GB download the first time you start Bitcoin Core	

*Note: all miners are nodes but not all nodes are miners.*

## NOT ALL SYSTEMS ARE EXACTLY THE SAME

The general way nodes work are the same across all cryptocurrencies but the policies for what is considered acceptable or not are different in each community, as well as what style of node is used.



## BITCOIN

- *Uses a full node implementation*
- *All nodes verify transaction to make sure there are enough “outputs”*
- *Block is created and verified by other nodes*

## ETHEREUM

- *Uses lightweight node implementation*
- *Work with other nodes but all don't have to download or store blockchain information*
- *Enables faster transactions and eases strain on nodes*

## WHY YOU SHOULD CARE ABOUT NODES

Since cryptocurrency is a decentralized system, the only way to keep it that way is to have peer-to-peer review and validation on a blockchain network. Without the node system, there wouldn't be a way to store the blockchain system.

Understanding how the network works helps to understand where bad actors come into play.

Blocks are the fingerprints for cryptocurrency transactions so knowing how they are created, verified, and approved is essential to knowing which transactions are suspicious.





## FINALLY,

Crypto Track Pro retrieves their blockchain data directly from Bitcoin nodes in-house. This direct connection to the Bitcoin network enhances the security and privacy of our analytical tool and helps ensure the accuracy of the data being captured.

To request a 30-day free demo, visit our website at: [www.cryptotrackpro.us](http://www.cryptotrackpro.us)

