TAKE3

GUIDE TO BLOCKCHAIN LAYERS

Confused about blockchain architecture and what Layer 1 vs Layer 2 is? This handy guide is here to help!

CROSS-SECTION OF A BLOCKCHAIN

The general school of thought is that blockchain architecture comprises up to 5 main layers. It's important to note that some ecosystems may not have all these layers, or they may classify them differently depending on context.

L4
APPLICATION LAYER

This layer consists of smart contracts, decentralised applications (dApps), and other software that operate on the blockchain network. It empowers developers to create innovative applications and services that utilise the blockchain's security and transparency.

L3
PROTOCOL/CONSENSUS LAYER

This layer is in charge of validating the blocks according to the rules that have been programmed, ensuring smooth transactions.

L2
NETWORK LAYER

Many blockchains utilise this layer as the scaling solution for Layer 1. Layer 2 protocols further the discovery and interaction among nodes, which are the physical devices (computers) that maintain copies of the chains connecting a network together and ensuring it stays operational.

L1
DATA LAYER

This layer serves as the data structure and the physical storage of the blockchain. The ledger is created using links or Merkle trees, consisting of encrypted blocks utilising asymmetric encryption.

L0
INFRASTRUCTURE LAYER

Blockchains are built on the concept of sharing data among peers. This layer includes the physical components like computers and servers that make up the blockchain network. The infrastructure serves to solve challenges such as scalability and interoperability faced by Layer 1 networks.

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BLOCKCHAIN LAYERS AT A GLANCE

L0 L1 L2 L3 L4

- COSMOS
- BITCOIN
- POLYGON
- NFT
- SMART CONTRACTS
- ETHEREUM
- ARBITRUM
- DEFI APPS
- VENOM
- DAPPS
- CARDANO
- STARKNET
- DAO
- POLKADOT
- ALGORAND
- IMMUTABLEX
- GAMES