A-Z OF STRATOS

#stratosexplained

AUTO CLEAN-UP NETWORK

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To increase the speed of file transfer during download the *Content Delivery Network* will automatically generate copies of files allowing them to be downloaded from multiple different locations in the network, at the same time.

The *auto clean-up tool* removes these duplicate files once the demand has diminished, ensuring more efficient use of the storage space.

STRATOS

BLOCKCHAIN

Blockchain is a system of recording information in a way that makes it difficult or impossible to change, hack, or cheat the system. A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. Each block in the chain contains many transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger.

STRATOS

CDN (Content Delivery Network)

A CDN is a network of servers that help minimize delays in data transfer speeds by reducing the physical distance between the server and the user.

This means content providers can deliver fast, quality web experiences to all their end users; no matter what location, browser, device, or network they are connecting from. Webpages render faster, video buffering time is reduced, users stay more engaged, and content providers get more business.
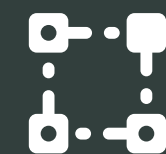
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DATA MESH

The data mesh is the collective term for the four pillars of the Stratos eco-system.

Without the data mesh the Blockchain would not be able to deliver the content, as a stand-alone blockchain is not able to process, store and transfer data that is not of a transactional nature.

The mesh links together the Blockchain, the Database, the Storage, and the Computation.

STRATOS

DECENTRALIZED

Decentralized networks are made up of computers, also known as nodes, that interact on a direct, peer-to-peer basis, without the need for third parties. Within a decentralized network, information is distributed to every single "node" on the network. The implementation of decentralization removes the single, usually human, point of authority from the system. People may use a decentralized system without requiring the permission of another person, or have to provide their own personal information to gain access.
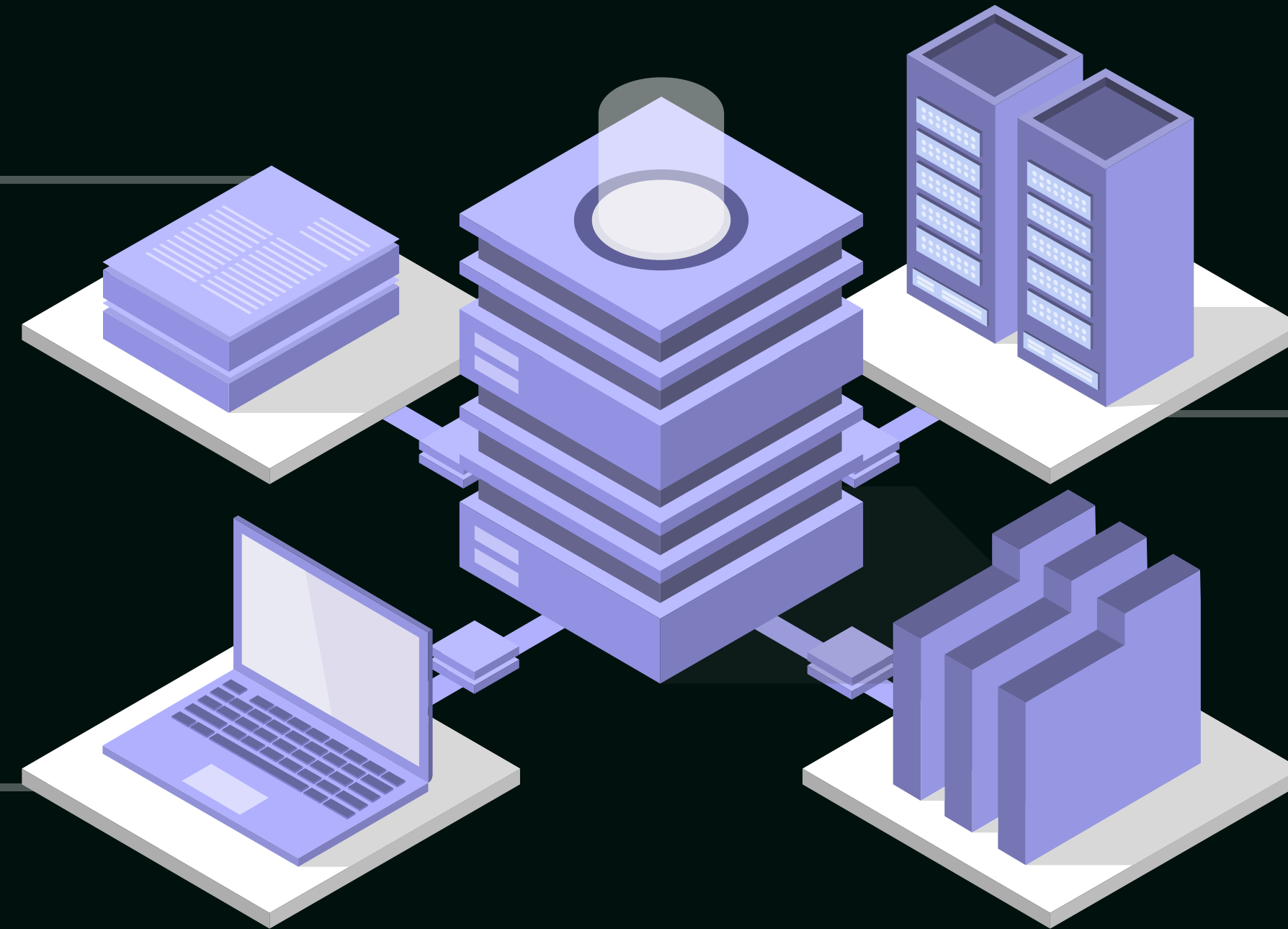
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EDGE COMPUTING

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Edge computing is the practice of capturing, storing, processing and analyzing data **physically** nearer to the end user.

Edge computing is often associated with **'smart home technology'** like programmable heating systems, remote controlled lighting or a high-tech coffee machine!

This is done by utilising a **network** of nodes physically located near to the users home. This reduces **latency** (slow performance) as the data has a shorter distance to travel.

STRATOS

ELASTIC ACCELERATION

Elastic Acceleration refers to the network's ability to duplicate files as demand for certain data increases. To increase the speed of file transfer during download the **Content Delivery Network** will automatically generate copies of files allowing them to be downloaded from multiple different locations in the network, at the same time.

STRATOS

GAS

Transactions generated on the Stratos blockchain consume gas. Since each STOS transaction requires computational resources to execute, each transaction requires a *fee*. Gas fees help keep the Stratos network *secure*. By requiring a fee for every *computation* executed on the network, we prevent bad actors from spamming (overloading) the network. To prevent accidental or hostile activity, or other computational wastage in code, each transaction is required to set a limit to how many computational steps of code execution it can use. The fundamental unit of computation is "gas".
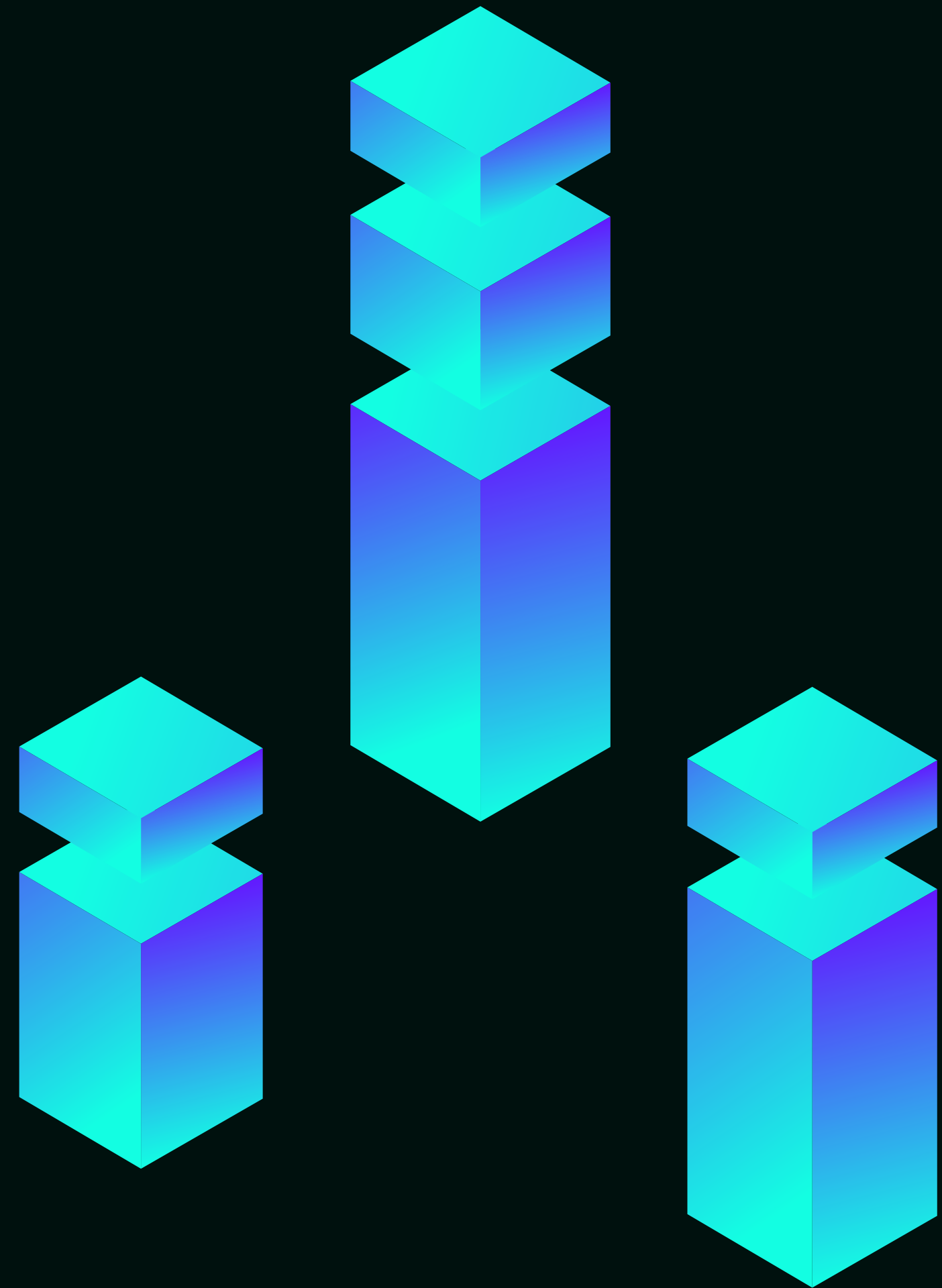
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IMMUTABLE

An immutable object, or code, is something that cannot be changed. With Stratos blockchain, the *database* offers an immutable feature that could power *Oracle* and data aggregation for any blockchain project, as it is *guaranteed* to be tamper-proof.
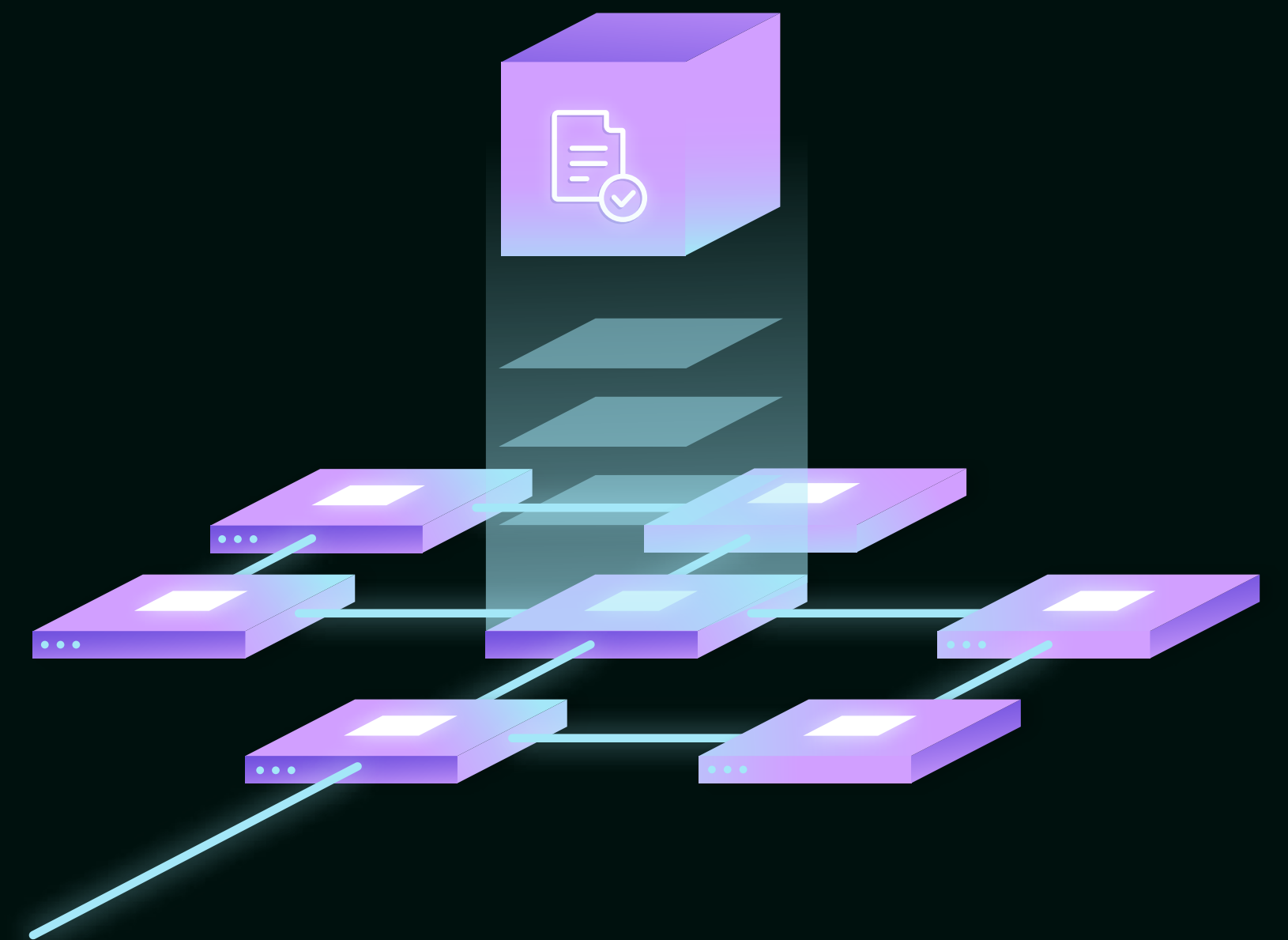
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LEDGER

The ledger is the record of all transactions on the Stratos **Blockchain**. Stratos uses its own Blockchain to measure the usage of computing **resources** (computation, storage, processing, and network traffic) The Ledger provides financial payment services for network providers and network users in an efficient, fair, and **transparent** manner.
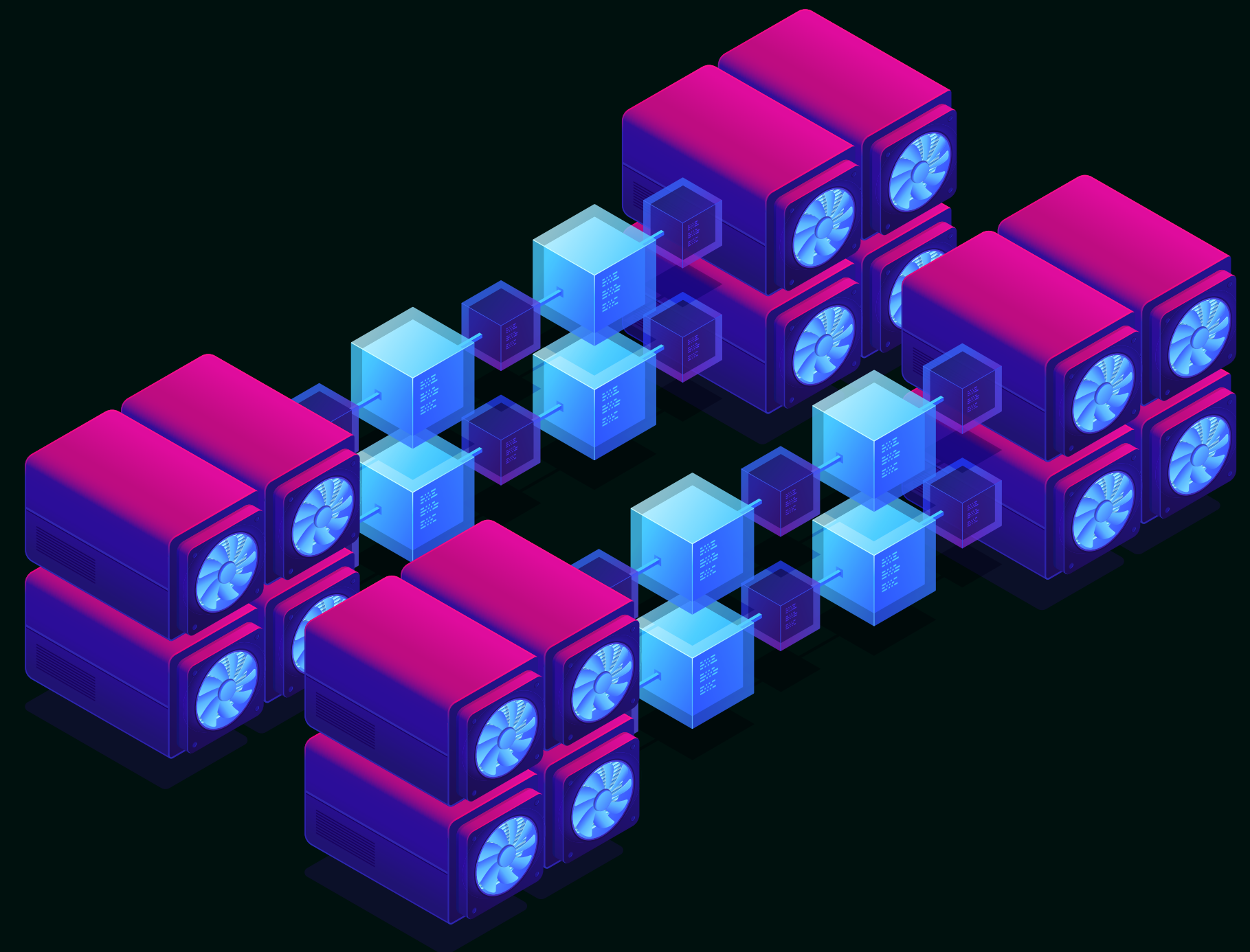
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NFT MARKETPLACE

NFT stands for ***non-fungible token***. It is a digital asset that serves as a secure record of ownership for an item or collection of items, stored on the Stratos Blockchain. Non-Fungible means the item is unique and cannot be replicated or faked. NFTs can be anything digital, however currently the majority of NFTs are digital art. The marketplace provides an application to buy and sell these items.
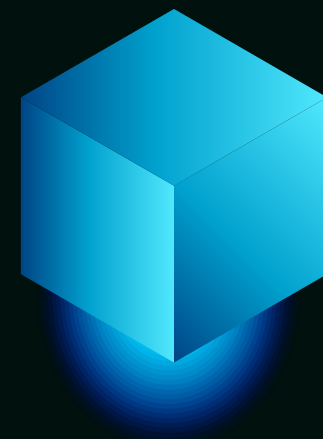
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MINING POOL

Mining pools are groups of cooperating miners who agree to share **block rewards** in proportion to their contributed mining hash power. Stratos will invite everyone to contribute to the expansion of the Stratos eco-system by providing computation resources, for which they will be given mining rewards, paid in **STOS**
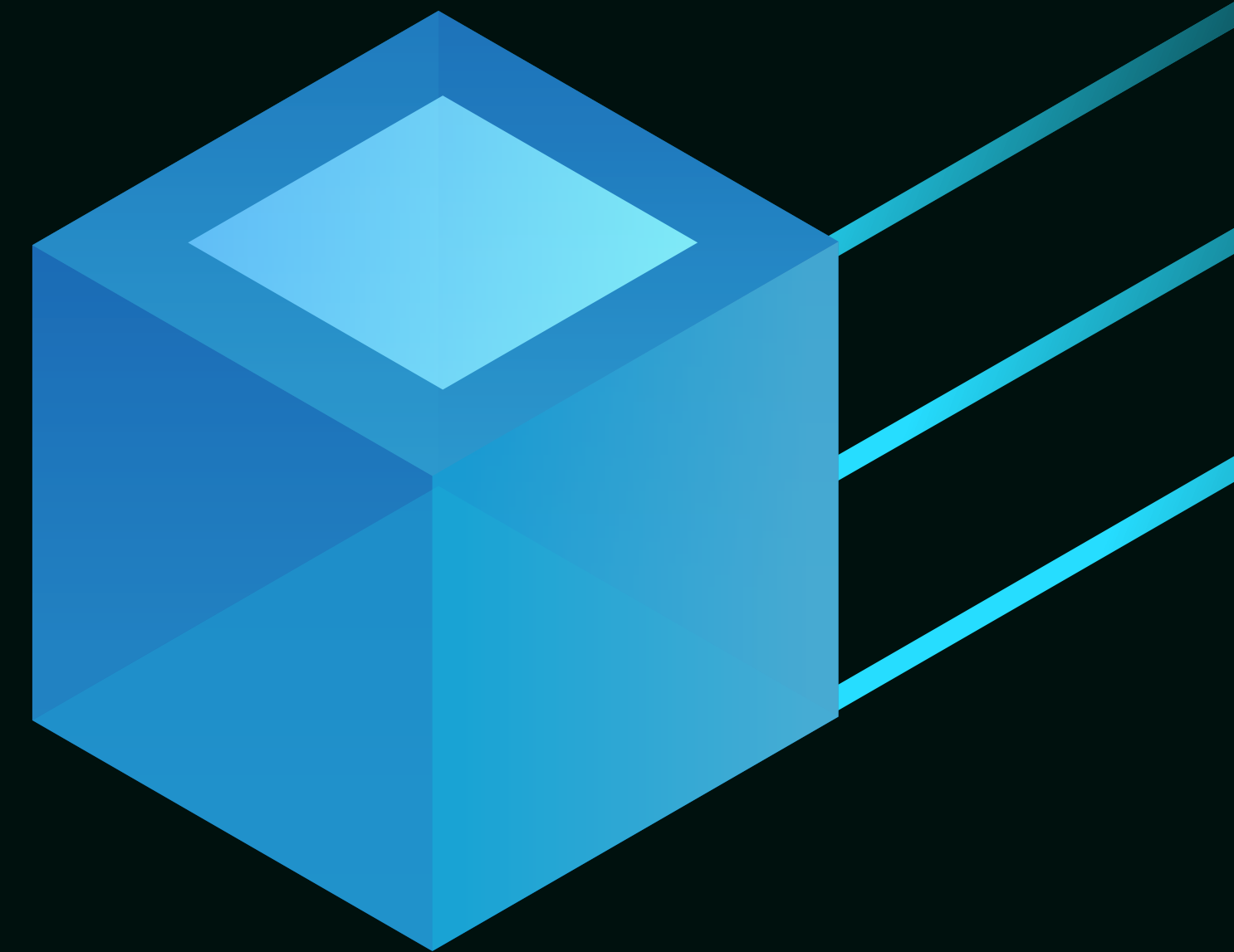
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NODE

A node is a **computer** that connects to the Stratos (or other) network. The node or computer supports the network. It supports it through validation and relaying **transactions**. At the same time, it also gets a copy of the full blockchain. Any computer that connects to the Stratos network is a node. There are different categories of nodes used in the Stratos eco-system, each with a different **function**. Stratos utilizes Validator, Blockchain, Follower, Meta nodes, and Resource nodes.

STRATOS

ORACLE

Oracles serve as **bridges** between blockchains and the outside world. Blockchains and **smart contracts** cannot access **off-chain** data (data that is outside of the network). Many applications reply on Oracles for their functionality, it is vital to have relevant information from the outside world to execute the agreement. Oracles are vital within the blockchain ecosystem because they broaden the scope in which smart contracts can operate. Without blockchain oracles, smart contracts would have extremely limited use as they would only have access to data from within their networks.

STRATOS

OZONE

Ozone is the unit of **traffic** used in the Stratos Eco-System. Units of Ozone are measured and tracked via the **Proof-of-Traffic** consensus. It's important to know how many units of ozone are moving around the system as this information is required to charge the user, as well as pay the person(s) who provided the network resource.

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PROOF OF AUTHORITY

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Proof-of-authority (PoA) is an alternative *consensus mechanism* (a method of authenticating transactions), which relies on known and *reputable validators* to produce blocks and thus provide computational power to a network. PoA is well suited for Stratos Metadata Service layer which takes care of all content indexing for its fast nature and barrier of entry on technical skills.

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PROOF OF STAKE

The Proof of Stake algorithm uses a **_near-random_** election process to select a node to be the validator (authenticates the transactions) of the next block, based on a combination of factors that could include the staking age, randomization, and the node's wealth. Furthermore, PoS encourage everyone to participate in the network even without any technical skills by delegating their token to validator nodes.

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PROOF OF TRAFFIC

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The Stratos Proof-of-Traffic algorithm is used to track and calculate the resources (storage, computing, traffic) used by each individual participant on the network. This information is then used to generate the fees for the user, and the rewards for the provider of the network resources.

STRATOS

WEB 3.0

Web 3.0 is the next generation of Internet technology that heavily relies on the use of machine learning and artificial intelligence (AI). It aims to create more open, connected, and intelligent websites and web applications, which focus on using a **machine-based understanding** of data. Using AI and advanced machine learning techniques, Web 3.0 aims to provide more personalized and relevant information at a faster rate. Using Web 3.0 each user can experience a website in a way that is tailored to their own personal requirements.

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