

COTI Node Ecosystem

Introduction

At a glance

- **Self-Sustaining Economy:** Nodes, license holders, and stakers collaborate to grow and secure the COTI network.
- **Decentralized Node System:** Anyone can run a Full Node to validate transactions, secure the network, and earn rewards.
- **Customizable Treasury Pools:** Node operators can manage their own staking pools with flexible rules, offering competitive terms for stakers.
- **License-Based Participation:** Running a node requires an NFT-based license, which can be assigned to experienced operators for rewards.
- **Multi-Token Support:** Nodes will support not only COTI staking but also new tokens launched on the network, benefiting both developers and operators.

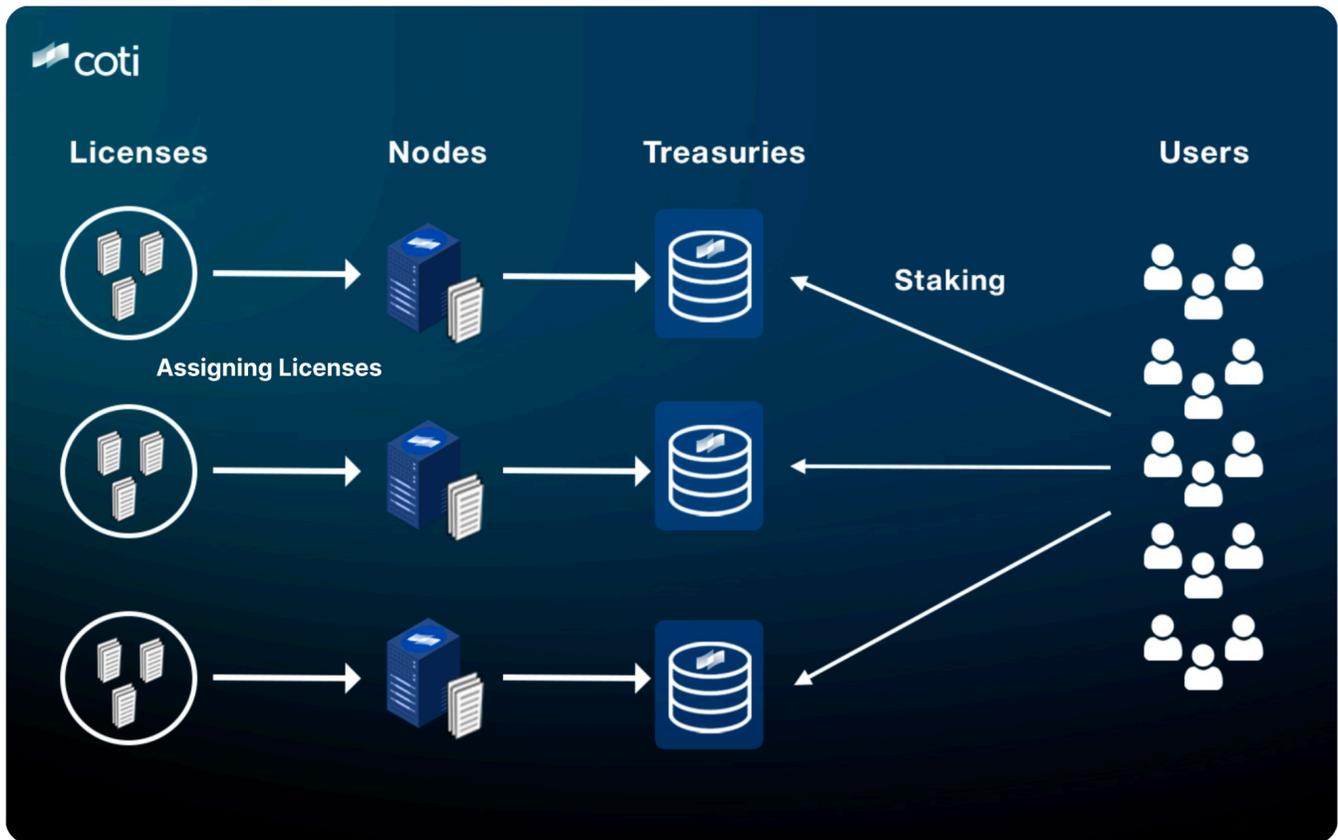
In the COTI network, Full Nodes will be decentralized, lean clients that play a critical role in maintaining the network's security, scalability, and overall functionality - anyone will be able to run a Full Node to support the network and gain rewards.

Additionally, node operators will also be able to run their own "staking pool", which is a version of [COTI's Treasury](#) app with a customized ruleset (locking periods, rewards, multipliers, etc.) and rewards, allowing others to stake their \$COTI in it and further support the decentralization of the network.

To run a node, users must hold a license in the form of an NFT. Those less familiar with the technical aspects of running a node can assign their licenses to an experienced node operator and join a larger node network. This eliminates the burden of node operation while allowing participation in the reward-oriented node economy.

Nodes will not only support native \$COTI staking but will support any new tokens launching on COTI's network, which is a lucrative offering both for dApp developers launching on COTI and for node operators.

In summary, the COTI ecosystem functions as a self-sustaining economy where nodes, license holders, and stakers collaborate to grow and maintain the network. Participation is incentivized through a reward system that aligns the interests of all stakeholders. Node operators validate transactions, secure the network, and manage Treasury Pools. License holders boost nodes' staking capacity and rewards by assigning their licenses, while stakers lock their tokens in Treasury Pools, stabilizing and expanding the network's liquidity.



Role of Nodes in the COTI Network

Nodes are the backbone of the COTI network. They ensure its integrity and decentralized nature. By verifying transactions and maintaining the decentralized ledger, they prevent single points of failure and enforce consensus across the network, making them indispensable for network stability.

Full nodes are lightweight clients that play a pivotal role in maintaining security, scalability, and seamless functionality. These nodes validate transactions, safeguard data integrity, and ensure the privacy of user information. Each node operates the Node software, which processes and verifies all on-chain activities, making them essential to the network's operation and growth.

Node Licensing

At a Glance

- **Node Licensing:** Run your own Full node or assign your license to earn Node Rewards. Licenses are NFTs, ensuring uniqueness and long-term value.
- **Lite License:** Costs a fraction of a Full Node license, offering an affordable entry into the network.
- **Technical Requirements:** Lightweight node setup with minimal hardware.
- **Assignment Benefits:** License holders can earn rewards based on node performance by assigning their license to active nodes. Both Full Node and Lite licenses are assignable to a 3rd party node operator.
- **Secondary market:** Licenses will be tradeable on the secondary market (i.e. via exchange)

A Full Node License allows you to run the Node software or to assign the license to another operator, thus earning Node Rewards. Running your own node lets you control performance, uptime, and security—ideal for those with technical expertise.

For users not interested in operating a node, licenses can be assigned to other node operators, earning rewards according to their chosen level of engagement.

In addition to the Full Node license, we will introduce the **Lite License**, which is priced at a 1/10th of a Full Node license and is exclusively for assignment. While providing the same Node Rewards' APR, it offers a more accessible entry point into the network based on a particular user's goals and budget.

Both licenses are represented as NFTs, ensuring uniqueness and transferability within the ecosystem.

The number of Licenses is limited. This makes them even more valuable, ensuring they retain their value over the long term. This scarcity increases demand, making each license a valuable asset that is likely to appreciate as the network grows.

Running a Node

A Full Node license will allow node operators to run a Full node. As it is the norm in the Ethereum ecosystem, a Full node does not act as a sequencer. Full nodes ensure correctness by validating all on-chain transactions of the COTI network as well as storing the complete state, blocks, and smart contracts. Operators will be able to run as many nodes as desired. Each node will have its own distinct private key.

Technical requirements

Running a Full node is simple and accessible, even for users with limited technical expertise. The Node software operates on minimal hardware.

Please refer to docs.coti.io for detailed technical requirements.

Assigning a Node License

Joining a Full Node as a license holder provides a lucrative opportunity. By assigning your license to a node, you start earning a share of the Node's Rewards, distributed to high-performing nodes, minus an Assignment Fee for operational costs. The assignment fee is set by the node operator and can range between 0% and 10%. This range will be made configurable to provide future flexibility.

Additionally, if the node operates a Treasury Pool (allowing users to stake tokens), you as a license assigner, benefit from a share of the Staking Reward Fees (see [Node Economy](#)), further increasing your earnings. Choosing a well-managed node with an active treasury allows you to maximize returns from both Node rewards and staking income, making it a strategic way to grow your earnings in the COTI ecosystem.

Secondary Market Opportunity for Node Licenses

Licenses are designed with liquidity in mind and as such will be tradeable on the secondary market, allowing the current owner to list and sell the license on approved secondary marketplaces. Should the owner decide to transfer ownership, the license can be seamlessly traded while ensuring all operational rights and compliance protocols are maintained. This secondary market opportunity ensures that the license retains its market value and supports a dynamic, user-driven ecosystem.

License Transfers

License holders can request to reassign their license to another node at any time. Once the request is made, it will be made effective at the end of the current reward period.

Node Economy

At a Glance

- **Node Economy:** Nodes earn rewards through performance, uptime, and assigned licenses, with a 98% uptime requirement for eligibility.
- **Treasury Pools:** Node operators manage their own Treasury Pools, customizing fees, locking periods, and rewards to attract both assigned license holders as well as stakers.
- **Staking Rewards:** Rewards are based on the total tokens staked but capped by the number of licenses. The system encourages balanced staking across the network.
- **Economic Benefits:** Node operators earn from node rewards, assignment fees, and staking reward fees.
- **Flexible Participation:** Users can participate in nodes and staking pools based on their involvement level, with rewards scaling accordingly.
- **Safeguarding:** Funds staked in a node operator's pool are not accessible by the operator at any time.

The economic structure of COTI nodes is designed to incentivize active participation and ensure the long-term sustainability of the network.

Full Nodes that maintain a minimum uptime of 98% are eligible to receive **Node Rewards**, which are distributed every **103-hour** period ("Reward Period"). This uptime requirement underscores the importance of reliability and consistent performance within the network. 2% of downtime per month should allow node operators ~15 hrs most months to conduct upgrades/maintenance.

Node operators who do not meet the uptime requirements will not be eligible to receive rewards up to 98% uptime (after which threshold, no rewards will be distributed). Node Rewards are proportionally reduced for license holders who have assigned their license to the offending node. Treasury pools are not reduced as the funds in question belong to stakers and not the node operator themselves.

Node Rewards are a significant incentive for operators, as they constitute **12.5%** of the total inflatory tokens generated by the protocol in each Reward Period, as part of the general 58% reward allocation. Unlike some reward systems that are limited by time or diminishing returns, the COTI Node Rewards are not time-bound, providing a continuous and potentially growing source of income for node operators. Node Rewards are split between all nodes that fulfill the uptime criteria, based on the amount of licenses assigned to it. This structure encourages operators, and license owners, to maintain their nodes over the long term, ensuring the network's stability and resilience. Node Rewards will be distributed evenly between all nodes that meet or exceed the uptime requirements.

Operating a Full node provides substantial earning potential, especially as more license holders assign licenses to your node. **Rewards are shared between the operator and license assigners (holders who assign their license to a node operator), with an Assignment Fee (ranging from 0% to 10%) deducted from the assigner's Node Rewards to cover node maintenance.**

The node economy is designed to offer users the flexibility to participate at their own pace, with rewards that scale according to their chosen level of engagement—whether they are node operators or stakers with more passive roles.

Nodes Manage Independent Instances of the COTI Treasury App

The screenshot displays the 'New Deposit' form in the COTI Treasury App. The form is divided into several sections:

- From:** A dropdown menu showing 'Deposit from any address' with a balance of 214,499.98823507 COTI.
- Amount:** A text input field containing '100,000' and a unit selector set to 'COTI'. A rate indicator shows '1 COTI ~ \$0.10014077'.
- Slider:** A horizontal slider ranging from 0% to MAX, with a green dot positioned at approximately 50%.
- Include fees:** A checkbox that is currently unchecked.
- Multiplier:** A dropdown menu with options X1, X2, X4, and X8. X8 is selected.
- Warning:** A small text warning: 'Warning: Deposits with a Multiplier greater than x1 carry a risk of deposit liquidation. In Addition, a Liquidation Risk withdrawal fee will be applicable if the initial deposit health factor becomes 1.04'.
- Locking Period (Days):** A grid of buttons for different durations: Unlocked, 30D, 60D, 90D, 120D (selected), 180D, 270D, and 360D.
- Preview Panel:** A summary box on the right containing:
 - Multiplier: X8
 - Lock period: 120 Days
 - Extended lock period: Disabled
 - Health factor: 1.14
 - Liquidation price: \$0.0876
 - APY: 34.43%
 - Deposit Amount: 100,000
 - Treasury fees: 50 COTI
 - Transaction fee: 35 COTI
 - Total Amount: 100,085 COTI
- Agreement:** A checkbox for 'I agree to all terms & conditions'.
- Submit:** A large green button labeled 'New Deposit'.

Screenshot from current COTI's Treasury App

The new COTI network presents a major leap forward in empowering consumer choice within the treasury system, empowering each node operator to manage their own COTI Treasury. These Treasuries will act as mini-economies within the network, distributing the protocol's staking rewards based on the configured stake, boost, locking period, and multiplier.

In order to incentivize active participation and secure the network, the protocol in this newly launched Layer 2 chain will distribute a portion of newly issued tokens to treasury participants on a regular basis, depending on the protocol's requirements and network conditions. Staking rewards are designed to reward users who lock their tokens as part of the staking mechanism, contributing to network security and stability.

Staking rewards are proportional to the total amount staked but are subject to the node's cap, which is determined by the number of Node Licenses assigned to it. Each Full Node License increases the cap by **500,000 \$COTI**, and each Lite Node License increases the cap by **50,000 \$COTI**, with these figures adjustable every 103 hours to align with network dynamics.

If the total staked amount exceeds the node's cap, rewards are distributed based on the cap rather than the actual staked amount, resulting in lower returns. This system encourages participants to join nodes that remain within their cap to maximize returns and ensures balanced staking across the network. The

flexibility to adjust cap limits and reward allocations allows for a sustainable and equitable staking ecosystem, promoting long-term growth and decentralization.

Node Operator Treasury Customization

Node Operators will have the ability to customize their Treasury offerings by setting **Staking Reward Fees** (ranging from 0% to 10%) on the protocol's staking rewards distributed to their Treasury, helping optimize revenues and manage operational costs. This fee can be adjusted every 103 hours, allowing flexibility in response to network conditions. Additionally, operators will control fees for deposits, withdrawals, and other activities, determining how Treasury revenues are shared with stakers to potentially enhance their rewards.

By strategically managing fees, rewards, and governance, Node Operators can position their Treasuries for sustained success within the COTI ecosystem.

Configuration settings will be restricted to minimize risk, ensuring that node operators don't take on unnecessary exposure and users remain protected from undue risks. This means not all settings will be freely configurable.

As with any economy, users will likely seek the treasury that benefits them most. That will generally mean lowest fees, greatest staking capacity, and highest APY payout.

Fixed Aspects of the Treasury Pool

The following aspects will remain fixed to maintain consistency and fairness across the network, like the default annual percentage yield matrix and the gCOTI boost ratio.

- **APY Matrix:** The default annual percentage yield matrix is standardized across all Treasury Pools
- **gCOTI Boost Ratio:** The ratio for boosting returns using gCOTI is fixed, no single pool can offer disproportionately higher returns through gCOTI boosts.

Funds in Treasury Pools are Safeguarded

Funds which are deposited, distributed, or liquidated from any COTI treasury pool managed by node operators are not held by them. This means the node operators do not have direct access to the funds in the treasury pools at any time. Liquidated deposits go back to the node economy.

Economic Benefits

The reward system offers multiple income streams. Node operators earn Node Rewards from the protocol, along with Assignment Fees from license holders and Staking Reward Fees from Treasury participants. License holders receive a share of the Staking Reward Fees by assigning their license to high-performing nodes, while stakers earn returns from their treasury pool's staking activity. This system ensures all participants are rewarded for contributing to the network's growth.

Any Token On COTI Can Use The Node Infrastructure: Empowering Developers with Decentralized Staking and Treasury Tools

Anyone on the COTI network can integrate with the Treasury app to provide decentralized staking and treasury management tools. This allows users to stake tokens, earn rewards, and participate in governance for any token on the network. By leveraging COTI's infrastructure, projects can focus on growth while benefiting from shared staking rewards, governance, and liquidity across platforms. As more projects adopt the app, demand for nodes and staking services will increase, creating more opportunities for node operators.

The COTI network unlocks limitless potential and revolutionizes how developers build and scale projects by providing native, decentralized staking and treasury management tools that can be seamlessly integrated into any dApp or protocol. Developers no longer need to build staking and treasury features from scratch; instead, they can leverage COTI's robust, battle-tested infrastructure to manage staking, distribute rewards, and facilitate governance for any token within the ecosystem.

By using COTI's decentralized infrastructure, developers can focus their efforts on innovation and growth while benefiting from shared staking rewards and liquidity across the network. This opens up vast opportunities for creating applications, all of which can tap into the network's core functionalities without needing to reinvent the wheel.

The potential is large: as more projects integrate COTI's tools, they not only gain access to a growing ecosystem of stakers and liquidity providers but also fuel demand for nodes and staking services. This creates a positive feedback loop where developers will attract more participants, increase engagement, and ensure their projects thrive in a decentralized, scalable environment.

This unprecedented access to native tools, coupled with the ability to attract a network of stakers, node operators, and users, allows developers to focus on delivering cutting-edge solutions while tapping into the broader potential of the COTI network.

As the ecosystem grows, the demand for staking services, treasury management, and governance participation will surge, creating a wealth of opportunities for both developers and node operators. COTI's platform ensures that the tools needed for success are not only accessible but designed to help developers scale their projects efficiently and sustainably.