



# Cardano Foundation

**Museums in the era of Web 3.0:**  
Exploring new ways of collaboration  
and interaction with audiences



Cardano  
Foundation

We empower the architects of the future to use the Cardano blockchain to solve world problems.



CARDANO

Public, permissionless **proof-of-stake** blockchain

First founded on **peer-reviewed research**

Created on **industry-defining research** and **robust engineering**

Built with **energy efficiency** in mind

Developed to provide maximum **security**, **scalability**, and **decentralization**

# Disclaimer

**Massively Simplified**

**The conclusion of society is that  
I have to **trust** you in order to  
**transact** with you.**

**We manufacture Trust**



# Property

# Ledger

01

Sold to Owner 1

1971

# Ledger

02	50 K Improvemnt	1978
01	Sold to Owner 1	1971



# Ledger

09		
08	Electrical Fire	2017
07	105 K Improvement	2001
06	Sold to Owner 3	1994
05	Failed Inspection	1989
04	Sold to Owner 2	1982
03	Approved Extension	1981
02	50 K Improvemnt	1978
01	Sold to Owner 1	1971

# Ledger

09		
08	Electrical Fire	2017
07	105 K Improvement	2001
06	Sold to Owner 3	1994
04	Sold to Owner 2	1982
03	Approved Extension	1981
02	50 K Improvemnt	1978
01	Sold to Owner 1	1971

DELETE

# Ledger

09		
08	Electrical Fire	2017
07	105 K Improvement	2001
06	Sold to Owner 3	1994
05	New Chimney	1989
04	Sold to Owner 2	1982
03	Approved Extension	1981
02	50 K Improvemnt	1978
01	Sold to Owner 1	1971

TAMPER-ABLE

Start with the **automatic assumption**  
that the counterparty **can't be trusted**

# Intermediaries

# Trust is the fundamental currency of commerce



# Blockchain Ledger

Builder

01

Sold to Owner 1

1971

# Blockchain Ledger

Builder

01

Sold to Owner 1


1971







# Blockchain Ledger

Owner	02	50 K Improvement	1978
Builder	01	Sold to Owner 1	1971



# Blockchain Ledger

Owner	02	50 K Improvement	1978	
Builder	01	Sold to Owner 1	1971	

# Blockchain Ledger

Architect	03	Approved Extension	1981	
Owner	02	50 K Improvement	1978	
Builder	01	Sold to Owner 1	1971	

# Blockchain Ledger

Architect	03	Approved Extension	1981	
Owner	02	50 K Improvement	1978	
Builder	01	Sold to Owner 1	1971	

# Blockchain Ledger

	09			
Insurance	08	Electrical Fire	2017	
Contractor	07	105 K Improvement	2001	
Real Estate	06	Sold to Owner 3	1994	
Government	05	Failed Inspection	1989	
Real Estate	04	Sold to Owner 2	1982	
Architect	03	Approved Extension	1981	
Owner	02	50 K Improvement	1978	
Builder	01	Sold to Owner 1	1971	

IMMUTABLE

# Distributed

Real Estate

Architect

Owner

Builder

Government

Contractor

Insurance



ID	Category	Item	Value	Status
001	Insurance	Electrical Fire	2017	Active
002	Contractor	W & Improvement	2018	Active
003	Real Estate	Sold to Owner 1	1024	Active
004	Government	Public Inspection	1020	Active
005	Contractor	W & Improvement	1020	Active
006	Insurance	W & Improvement	1020	Active
007	Contractor	W & Improvement	1020	Active
008	Insurance	W & Improvement	1020	Active
009	Insurance	Electrical Fire	2017	Active
010	Contractor	W & Improvement	2018	Active
011	Real Estate	Sold to Owner 2	1024	Active
012	Government	Public Inspection	1020	Active
013	Contractor	W & Improvement	1020	Active
014	Insurance	W & Improvement	1020	Active
015	Contractor	W & Improvement	1020	Active
016	Insurance	W & Improvement	1020	Active
017	Contractor	W & Improvement	1020	Active
018	Insurance	W & Improvement	1020	Active
019	Insurance	Electrical Fire	2017	Active
020	Contractor	W & Improvement	2018	Active
021	Real Estate	Sold to Owner 3	1024	Active
022	Government	Public Inspection	1020	Active
023	Contractor	W & Improvement	1020	Active
024	Insurance	W & Improvement	1020	Active
025	Contractor	W & Improvement	1020	Active
026	Insurance	W & Improvement	1020	Active
027	Contractor	W & Improvement	1020	Active
028	Insurance	W & Improvement	1020	Active
029	Insurance	Electrical Fire	2017	Active
030	Contractor	W & Improvement	2018	Active
031	Real Estate	Sold to Owner 4	1024	Active
032	Government	Public Inspection	1020	Active
033	Contractor	W & Improvement	1020	Active
034	Insurance	W & Improvement	1020	Active
035	Contractor	W & Improvement	1020	Active
036	Insurance	W & Improvement	1020	Active
037	Contractor	W & Improvement	1020	Active
038	Insurance	W & Improvement	1020	Active
039	Insurance	Electrical Fire	2017	Active
040	Contractor	W & Improvement	2018	Active
041	Real Estate	Sold to Owner 5	1024	Active
042	Government	Public Inspection	1020	Active
043	Contractor	W & Improvement	1020	Active
044	Insurance	W & Improvement	1020	Active
045	Contractor	W & Improvement	1020	Active
046	Insurance	W & Improvement	1020	Active
047	Contractor	W & Improvement	1020	Active
048	Insurance	W & Improvement	1020	Active
049	Insurance	Electrical Fire	2017	Active
050	Contractor	W & Improvement	2018	Active

# Distributed

Real Estate

Architect

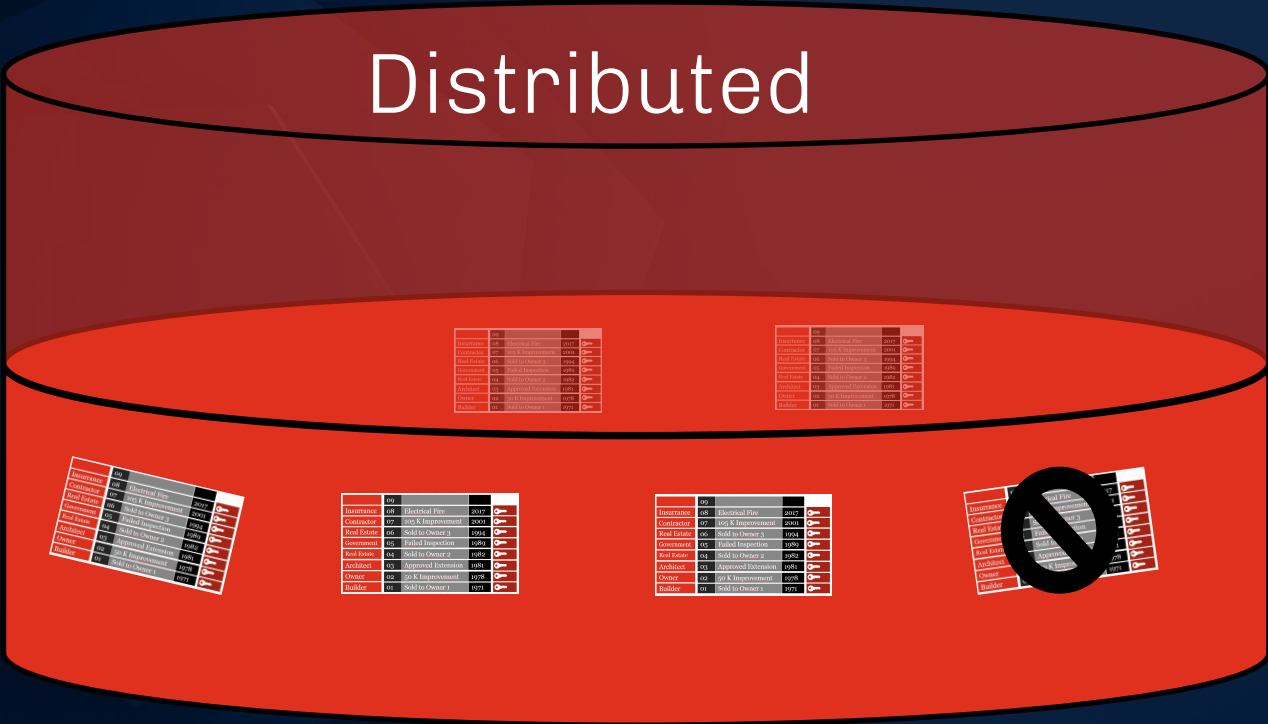
Owner

Builder

Government

Contractor

Insurance



# Distributed

Real Estate

Architect

Owner

Builder

Government

Contractor

Insurance

Contractor	004	Electrical Fire	2017	0
Contractor	005	Roof & Improvement	2018	0
Real Estate	006	Build to Owner 2	2019	0
Contractor	007	Paint Inspection	2020	0
Contractor	008	Build to Owner 1	2021	0
Contractor	009	Approved Extension	2022	0
Contractor	010	Roof & Improvement	2023	0
Contractor	011	Build to Owner 1	2024	0

Contractor	004	Electrical Fire	2017	0
Contractor	005	Roof & Improvement	2018	0
Real Estate	006	Build to Owner 1	2019	0
Contractor	007	Paint Inspection	2020	0
Contractor	008	Build to Owner 2	2021	0
Architect	009	Approved Extension	2022	0
Owner	010	Roof & Improvement	2023	0
Builder	011	Build to Owner 1	2024	0

Contractor	004	Electrical Fire	2017	0
Contractor	005	Roof & Improvement	2018	0
Real Estate	006	Build to Owner 3	2019	0
Contractor	007	Paint Inspection	2020	0
Contractor	008	Build to Owner 2	2021	0
Contractor	009	Approved Extension	2022	0
Owner	010	Roof & Improvement	2023	0
Builder	011	Build to Owner 1	2024	0

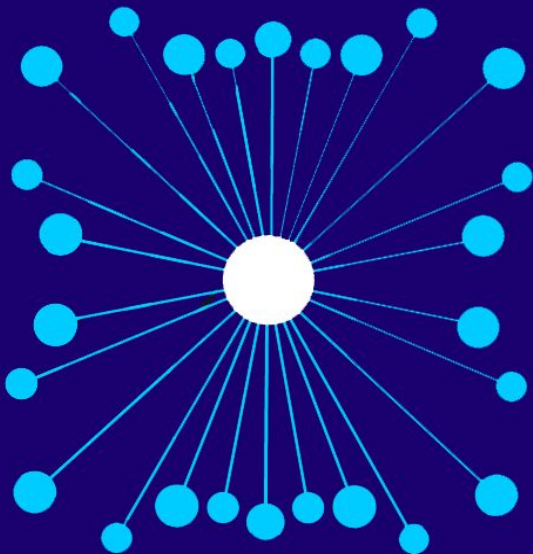
Contractor	004	Electrical Fire	2017	0
Contractor	005	Roof & Improvement	2018	0
Real Estate	006	Build to Owner 3	2019	0
Contractor	007	Paint Inspection	2020	0
Contractor	008	Build to Owner 2	2021	0
Contractor	009	Approved Extension	2022	0
Architect	010	Roof & Improvement	2023	0
Contractor	011	Build to Owner 1	2024	0

Contractor	004	Electrical Fire	2017	0
Contractor	005	Roof & Improvement	2018	0
Contractor	006	Build to Owner 1	2019	0
Contractor	007	Paint Inspection	2020	0
Contractor	008	Build to Owner 2	2021	0
Contractor	009	Approved Extension	2022	0
Contractor	010	Roof & Improvement	2023	0
Contractor	011	Build to Owner 1	2024	0

Contractor	004	Electrical Fire	2017	0
Contractor	005	Roof & Improvement	2018	0
Contractor	006	Build to Owner 3	2019	0
Contractor	007	Paint Inspection	2020	0
Contractor	008	Build to Owner 2	2021	0
Contractor	009	Approved Extension	2022	0
Contractor	010	Roof & Improvement	2023	0
Contractor	011	Build to Owner 1	2024	0

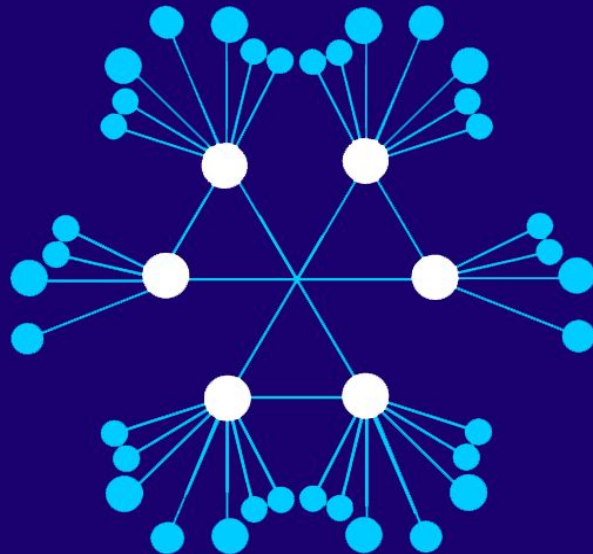


# Centralized vs Decentralized vs Distributed Network: An Overview



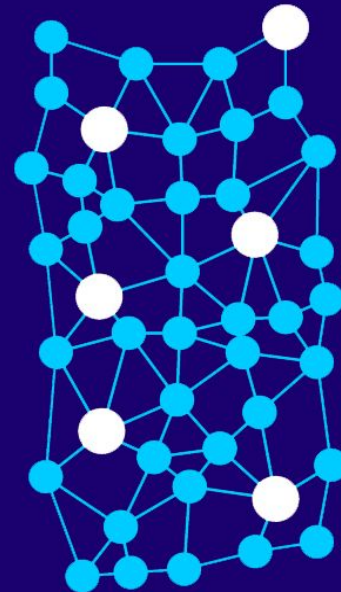
**Centralized Network**

All the nodes are connected under a single authority



**Decentralized Network**

No single authority server controls the nodes, they all have individual entity



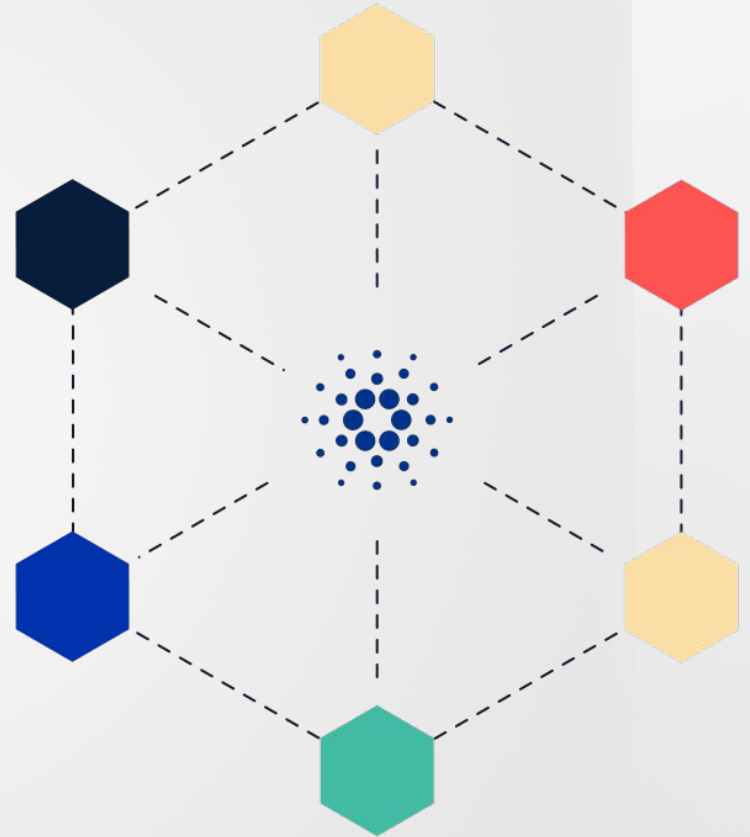
**Distributed Network**

Every node is independent and interconnected with each other

## Protocol Consensus

The process a blockchain network agrees to create and validate new transactions to a blockchain, and rewarding the participants for their actions.

In essence, a consensus protocol is what controls the laws and parameters that govern the behavior of blockchains, like a type of ruleset to which each network participant adheres, and the source of economic costs accrued for participating in the network.



## Proof of Work



Race to First

### **Excessive Resource Consumption**

Consumption of external computational resources to be selected as a transaction validator.

## Proof of Stake



Game Theory

### **Optimal Resource Consumption**

Utilizes the internal amount of stake (or value) that is held in the system to determine consensus. Stake is the native cryptocurrency

# Strong Attributes



**Immutability** - blockchain prevents undetected changes to past records/ transactions.



**Consensus** - Rules to come to agreement without “direct” trusting



**Authentication** - Updates to the chain are signed by known entities and protected by consensus.



**Resilience** - A well maintained distributed ledger is highly resilient to external impact



**Validity** - Rules to validate updates, which should be unique (double record prevention)



Blockchain For Refugees

# Help 103M+ displaced people in need

Delegate stake with



# Support People Forced To Flee



Mint your exclusive



**UNHCR**

The UN Refugee Agency

**NFT**

[unhcr.nmkr.io](https://unhcr.nmkr.io)

 **NMKR**

**TURF**



Cardano  
Foundation



**Veritree's global land restorations, now powered by Cardano's blockchain.**

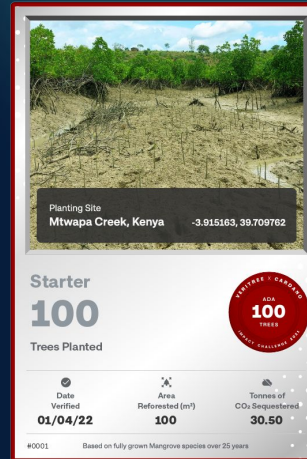
**Traceability & transparency for funding, planting and monitoring of reforestation.**



# Veritree Assets for SDG Financing, Reporting, Data Tracking



**Descriptive Utility Tokens**



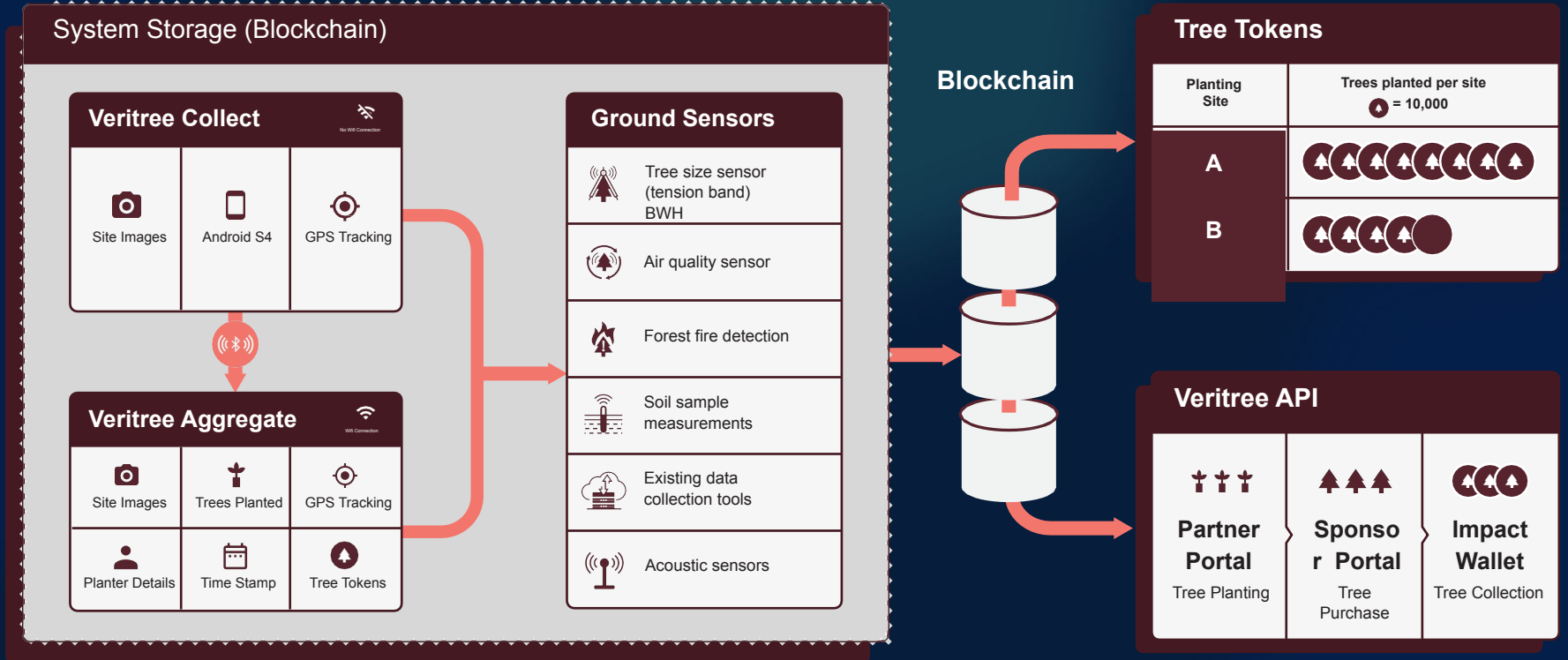
**Verified Land Restoration NFT**



**On-chain "NFTree"**



# Our Solution



On Chain Links: [Descriptive Utility Tokens](#), [Verified Land Restoration NFT](#), [On-chain](#)

"NFTree"

The Veritree System

# Proof of Authenticity



- Epoch Lacrosse has launched the official World Championship Jersey, available in white, black, and VIP editions
- Each jersey features an NFC patch that allows fans to register their purchase and unlock exclusive rewards via Epoch's website
- Just tap a smartphone to the tag to access discounts and special offers at attractions around San Diego.
- A digital version of the jersey is embedded in the NFC and linked to a secure blockchain to prove its authenticity
- By registering their jersey, fans agree to share their contact information with participating brands. This allows brands to send targeted marketing messages and offers to fans who are already interested in their products.
- [Link on chain](#)

# Proof of Authenticity



- **The primary objective of using blockchain to authenticate a lacrosse jersey is to prove that it is an original licensed product. (\$USD 400 Bn industry)**
- **Inextricably linking an NFC to a blockchain record is a world-class security solution to protect licensed IP.**
- **The non-fungible token (NFT) is a digital representation of the commemorative jersey which contains a cryptographically signed set of metadata.**
- **The metadata in the NFT includes the list of participants, information about the partners, and the world championships.**

Value Capture

# UPGRADING the **SYSTEMS** of the **WORLD**

- ✓ **Decentralized Apps** DEXs, NFT, Tokens
- 📊 **Consuming Blockchain** Data forensic, Analytics
- 🏢 **Legacy Businesses** Upgrading to blockchain
- ❓ **Radical Innovation of Operating Models**


Value Creation

Connecting the offline world to the **blockchain** and **sidechain**


- Predictability
- Reliability
- Resilience

**Cardano Foundation**


Core Focus Areas



**Operational Resilience**



**Adoption**



**Education**

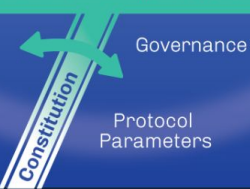
Regulators & Policy Makers

- DID/SSI
- L2 Solutions
- Interfaces
- Programmability
- Token Economies

End Users Enterprises

Developers

Blockchain Monitoring and Operations



**Cardano Blockchain and Sidechains**

Stake Pool Operators

## Code Repository



- Technical Roadmaps
- Change Management [CIPs]
- Open Source Software

Base Layer

Layer 1 Protocol

**Member Based Organization (MBO)**  
Off chain governance

Layer 0 → Network Stack

# Blockchain

is

**OPEN**

*for Business*

# Where to find us

[www.cardanofoundation.org](http://www.cardanofoundation.org)

[www.cardano.org](http://www.cardano.org)



**Developer Portal**  
[developers.cardano.org](http://developers.cardano.org)



**Cardano Forum**  
[forum.cardano.org](http://forum.cardano.org)



[www.linkedin.com/company/cardano-foundation](https://www.linkedin.com/company/cardano-foundation)



@Cardano, @Cardano\_CF



[www.reddit.com/r/cardano](https://www.reddit.com/r/cardano)



[www.youtube.com/c/CardanoFoundation](https://www.youtube.com/c/CardanoFoundation)



[t.me/Cardano](https://t.me/Cardano)



# CARDANO

**Seamless Upgrades**

**Scalable and  
Interoperable**

**Innovative Solutions**

**Deterministic Fees**

**Predictable  
Transactions**

**Efficient  
Transactions**

**Flexible Metadata**

**Immutable &  
Verifiable**

**Open Participation**



Transactions  
**72.6 M**

↑ 3.32%

Native Tokens  
**8.64 M**

↑ 1.67%

Delegated Wallets  
**1.29 M**

↑ 0.47%

Wallets  
**4.23 M**

↑ 1.19%

Policies  
**77,741**

↑ 1.69%



# Proof of stake on Cardano

**Fast Transaction Speeds**

**Efficient Energy  
Consumption**

**Low Barrier to Enter**

**High Scalability**

## **Liquid Staking Experience**

No locking period to access or withdraw funds and no slashing for an operator's harmful behavior

