Why Universities Can Become Validator Node Operators?

Dr. Klitos Christodoulou, University of Nicosia

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What it takes to be a validator:

- **Technical Expertise**: Universities have the infrastructure and talent to manage validator nodes.
- **Idle Resources**: Institutions often have unused computing resources.
- **Reputation & Trust**: University-operated nodes contribute credibility to decentralized networks due to their strong reputations.

Motivation for Involvement:

- Gaining hands-on experience with cutting-edge blockchain technologies.
- Supporting emerging projects and their ecosystems.
- Exploring research opportunities through active involvement in blockchain governance.

Setting up Validator Nodes – Our Process

Step 1: Establishing Intent

- Engage with project teams through communication channels like Discord or Telegram.
- Provide an intention statement and relevant organizational details.

Step 2: Experimentation & Resource Allocation

- Test blockchain clients and estimate resource requirements.
- Use a consistent internal protocol for security and setup.
- Run virtualized, containerized environments on enterprise-grade hardware.

Step 3: Monitoring & Alerts

- Use **Prometheus** and **Grafana** to monitor node performance and metrics.
- Set up a public-facing **Validators Dashboard** for transparency.

VALIDATORS DASHBOARD

Welcome to the Validators Dashboard. This dashboard provides real-time information about the status and performance of our validators.

Key Metrics: CPU Usage, Memory Usage, Storage Usage

Update Frequency: Every 30 seconds

Active	Inactive	Totals	Admin
9/9 Mainnet	0/9 Mainnet	Average CPU Usage: 6.91%	Prometheus Service: Up
1/1 Testnet	0/1 Testnet	Total Storage Usage: 9.11 TB	Grafana Dashboard: Up
		Total Memory Usage: 69.89 GB	

IFF XRPL EVM SIDECHAIN (TESTNET)

Status: Up

Contribution: Actively participating as early adopters in the XRPL EVM sidechain ecosystem.

XRP LEDGER EVM

CPU Usage: 18.94%
Storage Usage: 225.65 GB
Memory Usage: 6.38 GB

Since: 2024

Consensus: Proof of Authority (PoA)

Type: Validator

IFF XRPL Node

Status: Up

Contribution: Enhancing the security and efficiency of the global payments network.

XRP LEDGER

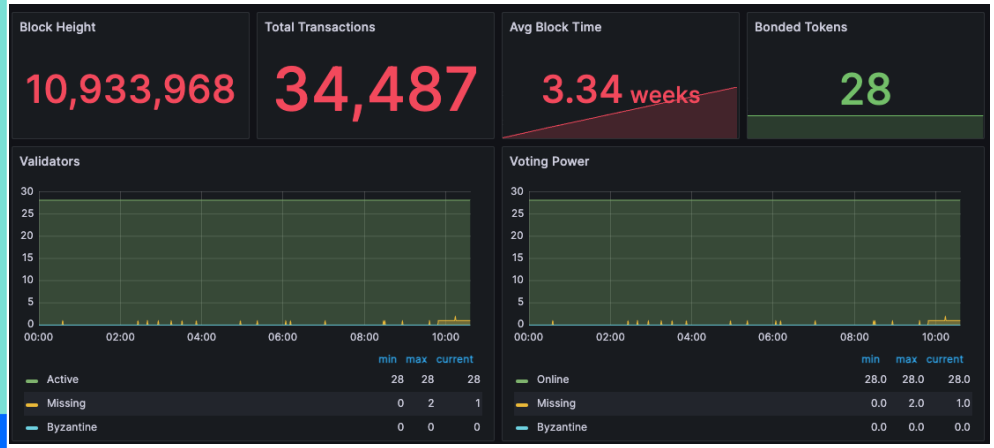
CPU Usage: 1.74%
Storage Usage: 244.13 GB
Memory Usage: 18.85 GB

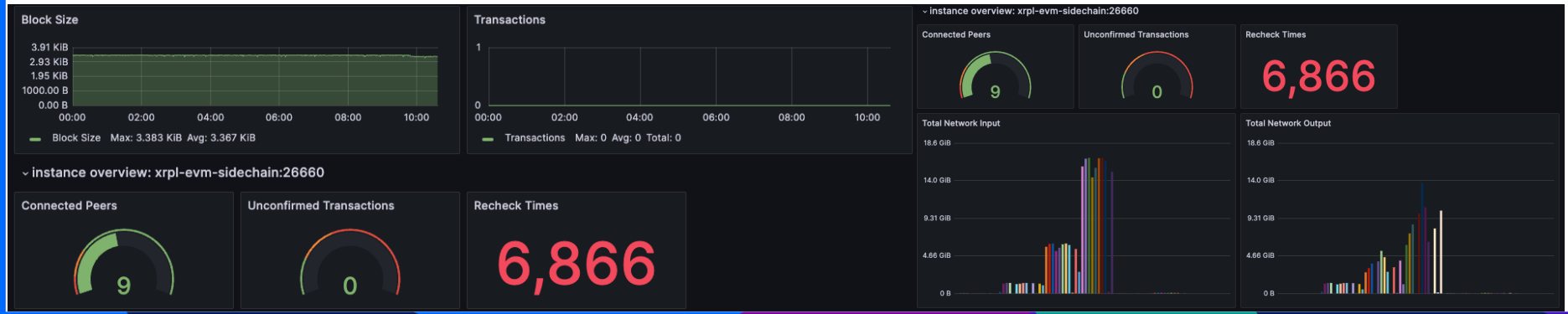
Since: 2019

Consensus: Ripple Protocol Consensus Algorithm (RPCA)

Type: Validator

Admin Grafana Dashboard – EVM Sidechain Validator





Research Opportunities and BBF (Blockchain Benchmark Framework)

Real-World Learning:
- Operating validators creates hands-on learning opportunities for PhD students and researchers.
    - Example: Monitoring, maintenance, incident support management.

BBF Extensions:
- The Blockchain Benchmark Framework now supports an EVM side-chain.
- Facilitates testing environments for assessing network upgrades before voting on governance proposals.
- Supports decision-making through empirical data and experimentation.

Thank you!

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