BeL2 Arbiter Setup Guide for Elastos Community

Introduction

This guide outlines the process of setting up an Arbiter node in the BeL2 (Bitcoin-Elastos Layer 2) ecosystem. Arbiters play a crucial role in the NBW (New Bretton Woods) system by facilitating cross-chain operations and ensuring network security and stability.

About Arbiter/Arbitrator Nodes

The Arbitrator Network is a key component that enables cross-chain operations and maintains system integrity:

- Decentralized nodes relay data and proofs between different blockchain networks

- Manage redemptions and dispute resolution

- Stake BTC, ELA (Elastos tokens), or BPoS NFTs as collateral to ensure honest behavior

Benefits of Being an Arbiter

As an Arbiter in the BeL2 ecosystem, you'll enjoy:

1. Supporting a growing BeL2 ecosystem of BTCFI dApps in return for set fees

2. Earning rewards from various services, such as:

    - Lending protocols

    - Stablecoin issuance services (including NBW)

    - Cross-chain transaction facilitation

3. Participation in BeL2 governance and decision-making processes

4. Potential future airdrops or additional incentives from the BeL2 community

5. Contributing to the advancement of Bitcoin-based decentralized finance

By becoming an Arbiter, you play a crucial role in maintaining the security, stability, and growth of the BeL2 network while benefiting from its expanding ecosystem.

> **Note:** More details on the incentive program, consensus mechanism, and dispute resolution will be released soon.

Prerequisites

Ensure you have the following before beginning:

1. An Elastos Smart Chain (ESC) Wallet with ELA Tokens
   - Set up by following the [Elastos Smart Chain and Cross-Chain Operation Manual](to meet staking requirements)to meet staking requirements

2. Metamask Browser Extension (for Arbiter Registration)

3. Bitcoin Wallet (Unisat or OKX Browser Extension)

4. Go 1.20 or newer: [Download and install Go](#)

5. Hardware Requirements:
   - CPU: 2+ cores
   - RAM: 8GB+
   - Storage: 100GB+ SSD
   - Network: 100Mbps+ internet connection

> **Note:** For future developments, we are working towards simplifying the setup process. In the future, we aim to provide a one-click installation solution for all platforms to make node deployment as effortless as possible. Additionally, we are exploring the possibility of allowing existing Elastos BPOS nodes (approximately 60) to run Arbiter nodes on their current servers. This approach could rapidly expand our network by onboarding these nodes with minimal additional effort from the node operators.
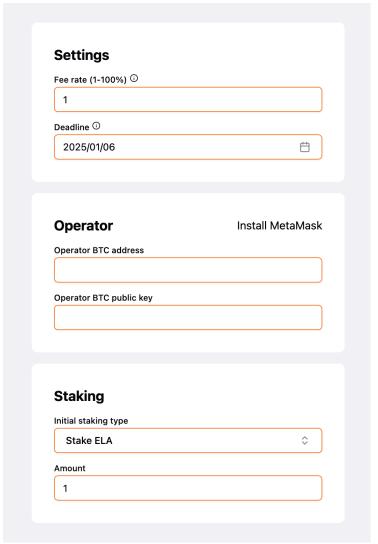
Video Tutorial

You can also follow along with the video setup guide:

- Step 1: https://youtu.be/6AN-UjhPd8c

- Step 2: https://youtu.be/iG97GkhPD9A

Step 1: Register as an Arbiter

1. Visit the beta Arbiter Portal: https://arbiter.bel2.org/

2. Connect your Metamask wallet to the portal

3. Configure your Arbiter settings:

Settings

Fee rate (1-100%) ⓘ

1

Deadline ⓘ

2025/01/06

Operator   Install MetaMask

Operator BTC address

Operator BTC public key

Staking

Initial staking type

Stake ELA

Amount

1

Fee Rate

Set your yearly fee rate as a percentage. Example: 10% fee on a 1000 ELA stake (valued at 3 USD per ELA) results in a 300 USD annual fee.

Deadline

Set the period for your service commitment. Choose wisely, as this affects stake withdrawal and attractiveness to dApps.

Operator Details

Enter your BTC address and BTC public key.

Staking

Choose your staking method:

- Stake ELA (minimum 1 ELA)
- Stake NFTs

4. Complete the registration process

Once registered, proceed to set up your Arbiter Signer Node.

Step 2: Set Up an Arbiter Signer Node

The Arbiter Signer provides signing services for the BeL2 loan arbiter. Follow these steps:

Preparation

1. Create two key files in your working directory:

   - `btcKey.json`: `{"privKey": "[HEX_PRIV_KEY]"}`
   - `escKey.json`: `{"privKey": "[HEX_PRIV_KEY]"}`
     Replace `[HEX_PRIV_KEY]` with your actual private keys in hexadecimal format.

2. Note your Arbiter Wallet Address from the [Arbiter Dashboard](#)

Installation and Configuration

1. Clone the Arbiter Signer repository:

   ```
   git clone https://github.com/BeL2Labs/Arbiter_Signer
   ```

2. Navigate to the project directory:

```
cd Arbiter_Signer
```

3. Install dependencies:

```
go mod tidy
```

4. Build the project:

```
make
```

5. Edit the `config.yaml` file:
   - Replace the "escArbiterAddress" value with your Arbiter Wallet Address

6. Place the key files (`btcKey.json` and `escKey.json`) in the default "keyFilePath" directory, or set your own path in the `config.yaml` file.

7. Run the Arbiter Signer:

```
go run app/arbiter/main.go
```

Conclusion

Congratulations on setting up your BeL2 Arbiter node! As an Arbiter, you play a vital role in the NBW ecosystem, facilitating cross-chain operations and ensuring network security and stability.

Stay updated with the latest developments and participate actively in the community. Your contribution is essential to the growth and success of the BeL2 and NBW systems.

For questions or support, please reach out to the BeL2/Elastos community.