

# **The Autumn Cross-Chain Asset Bridge**

Whitepaper

[autumn.finance](https://autumn.finance)

By the Autumn Network

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# I. The Autumn Cross-Chain Asset Bridge

The Autumn Cross-Chain Asset Bridge (also known as Autumn Bridge) is the infrastructure to bridge assets in two or more chains.

The Autumn Bridge use the verification model similar to Chainlink on the non-blockchain layer to solve the centralized risks with smart contracts on two side chains to hold that.

Generally, the bridge is comprised of three parts, the source chain smart contract to provide a user interface for depositing and withdrawing the source asset, the decentralized verification layer (named as the witness mechanism) and the target chain smart contract to provide the user interface for the minting and burning the cross-chain asset.

Both smart contracts handle the verification submissions from the witness nodes and are responsible for granting withdrawal or minting allowance. The whole process is fully decentralized, built on top of both blockchains and our verification lay, and designed for non-trust requiring.

*user interface : deposit, withdraw*

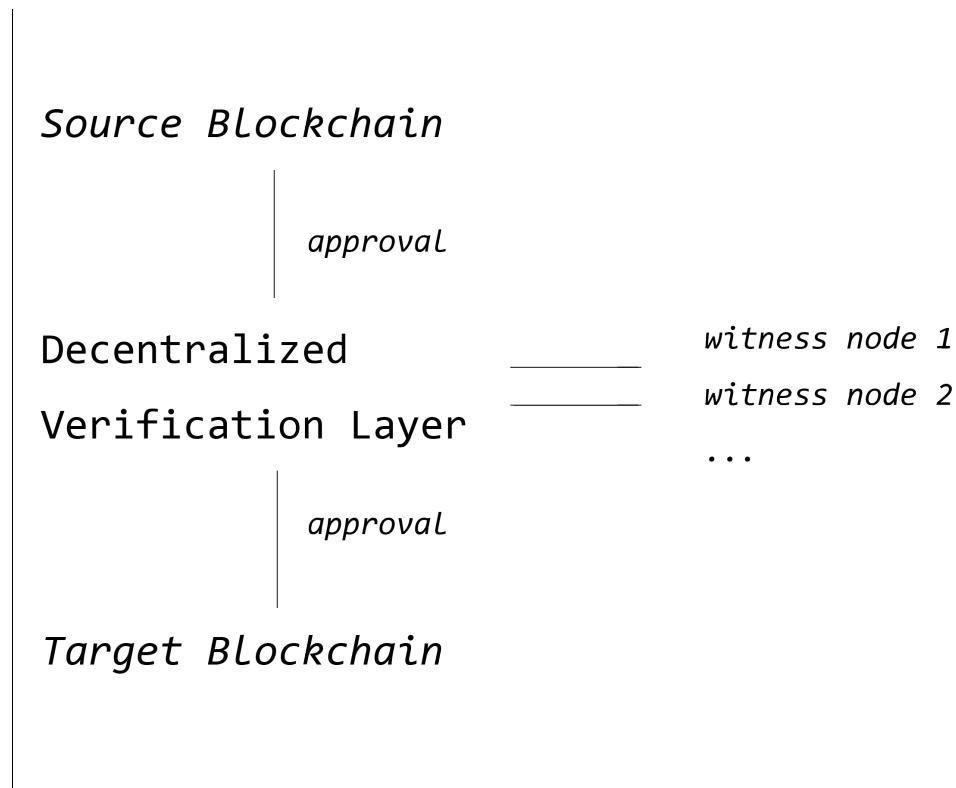


Figure I. The Autumn Cross-Chain Asset Bridge

## **II. Bridge Assets**

Bridge Assets are the cross-chain assets on the target blockchain and can only be issued by bridge smart contract of the target chain side. Though the bridge asset is 1:1 anchoring to the source chain asset, it is compulsory to distinguish by adding 'we (refers to 'wrapped') to the asset name, such as `wBTC`.

Bridge Assets can redeem back to the source chain asset with the smart contract at any time.

## **III. Involved Blockchains**

As mentioned in the first charter, there are two blockchains, the source and the target. One purpose of Autumn Bridge is to bridge between high performance and low-cost blockchains such as Heco, BSC and TRON to provide a nice user experience.

### **1. Source Chain**

Source Chain are blockchain that the source asset is living by, such as TRX to the TRON blockchain.

### **2. Target Chain**

Target Chain are the blockchain is the target of the cross-chain interaction, such as for Heco to the TRON with TRX asset.

## IV. Decentralized Witness Layer

The Decentralized Witness Layer is the most critical part of the bridge. It is responsible for verifying whether a cross-chain is valid as it deposited or burnt the assets.

The verification is handled by the bridge smart contracts to indicate whether it is valid and granting user allowance. At the same time, the witness nodes are running by multiple trust providers to monitoring and submitting the transaction status of two blockchains.

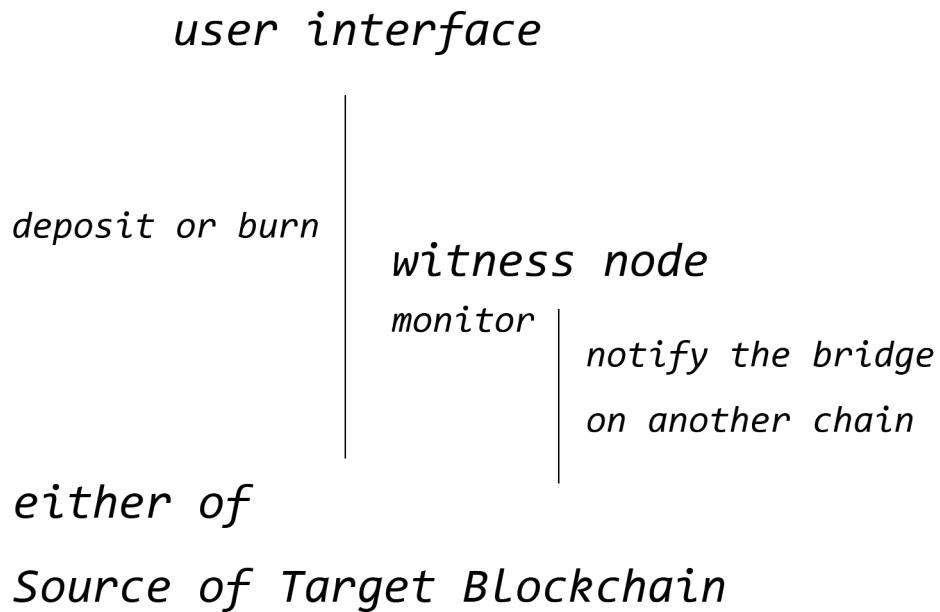


Figure II. The Decentralized Witness Layer

## V. Earn Aggregator Integration

The Earn Aggregator Integration is one of the most exciting parts of the system, enabling the ability to earn only by holding the cross-chain asset. It is implemented by integrating the earn aggregator to the bridge smart contract on the source chain (or even the target chain if there are possible to earn using the cross-chain asset).

It is an innovating and exploring to the integrations of multiple Defi infrastructures.

## VI. Resources

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