What is claimed is:

1. A computer implemented method for automatically executing transactions across a source blockchain and a separate target blockchain, the method comprising:

receiving, by a backend computer system from an endpoint computer system operated by a user, a control signal indicating to obtain a blockchain-based asset on the target blockchain;

wherein the user has source blockchain transaction credentials, the user's source blockchain transaction credentials having been created using an initial seed of entropy;

wherein the user does not have target blockchain transaction credentials;

wherein transaction credentials for a specific blockchain further comprise at least a unique public/private key pair and an address configured for transacting on the specific blockchain;

receiving, by the backend computer system from the endpoint computer system, a control signal indicating that the endpoint computer system has hierarchically created target blockchain transaction credentials for the user, using the initial seed of entropy that was used to create the user's source blockchain transaction credentials, transparently to the user;

automatically obtaining an amount of target blockchain cryptocurrency at least sufficient to obtain the blockchain-based asset on the target blockchain, by the backend computer system, in exchange for source blockchain cryptocurrency of the user; and

using the obtained target blockchain cryptocurrency and the hierarchically created target blockchain transaction credentials to automatically obtain the blockchain-based asset on the target blockchain;

wherein the obtained blockchain-based asset is registered to the address of the user's hierarchically created target blockchain transaction credentials.

2. The method of claim 1 wherein hierarchically creating target blockchain transaction credentials for the user, using the initial seed of entropy that was used to create the user's source blockchain transaction credentials further comprises:

transparently to the user, using a private child key derivation function to derive a private key for the user to transact on the target blockchain, from the private key of the user's source blockchain transaction credentials; and

transparently to the user, using a public child key derivation function to derive a public key for the user to transact on the target blockchain, from the public key of the user's source blockchain transaction credentials.

3. The method of claim 1 wherein hierarchically creating target blockchain transaction credentials for the user, using the initial seed of entropy that was used to create the user's source blockchain transaction credentials further comprises:

transparently to the user, using a private child key derivation function to derive a private key for the user to transact on the target blockchain, from the private key of the user's source blockchain transaction credentials; and

transparently to the user, using a public child key derivation function to derive a public key for the user to transact on the target blockchain, from the private key of the user's source blockchain transaction credentials.

4. The method of claim 1 wherein automatically obtaining an amount of target blockchain cryptocurrency at least sufficient to obtain the blockchain-based asset on the target blockchain in exchange for source blockchain cryptocurrency of the user further comprises:

transparently to the user, exchanging, by the backend computer system, an amount of the user's source blockchain cryptocurrency for the amount of target blockchain cryptocurrency at least sufficient to obtain the blockchain-based asset on the target blockchain.

5. The method of claim 4 wherein exchanging the determined amount of the user's source blockchain cryptocurrency for target blockchain cryptocurrency further comprises:

using a pool of target blockchain cryptocurrency stored by the backend computer system to facilitate the exchange

6. The method of claim 4 wherein exchanging the determined amount of the user's source blockchain cryptocurrency for target blockchain cryptocurrency further comprises:

using an external cryptocurrency exchange service to facilitate the exchange.

7. The method of claim 1 wherein using the obtained target blockchain cryptocurrency and the hierarchically created target blockchain transaction credentials to automatically obtain the blockchain-based asset on the target blockchain further comprises:

using the obtained target blockchain cryptocurrency to purchase, by the backend computer system, the blockchain-based asset on the target blockchain, using target blockchain transaction credentials of the backend computer system; and

transferring the blockchain-based asset from the backend computer system to the user, such that the user's target blockchain transaction credentials are not exposed during the purchase of the blockchain-based asset.

8. The method of claim 1 further comprising:

receiving, by the backend computer system from the endpoint computer system, a control signal indicating that the endpoint computer system has pre-signed a first transaction with the user's source blockchain private key transparently to the user, and pre-signed a second transaction with the user's target blockchain private key transparently to the user;

wherein the first transaction comprises a transaction to exchange source blockchain cryptocurrency of the user for the amount of the target blockchain cryptocurrency at least sufficient to obtain the blockchain-based asset on the target blockchain;

wherein the second transaction comprises a transaction to use target blockchain cryptocurrency to purchase the blockchain-based asset on the target blockchain;

transparently to the user, utilizing the pre-signed first transaction to automatically exchange the source blockchain cryptocurrency of the user for the amount of the target blockchain cryptocurrency at least sufficient to obtain the blockchain-based asset; and

transparently to the user, utilizing the pre-signed second transaction to use target blockchain cryptocurrency to purchase the blockchain-based asset on the target blockchain.

9. The method of claim 8 wherein the control signal received by the backend computer system from the endpoint computer system further indicates:

that the endpoint computer system has, prior to pre-signing the first transaction, determined a nonce of a last transaction processed for the user, and pre-signed multiple copies the first transaction having successive incrementing nonces, transparently to the user; and

that the endpoint computer system has, prior to pre-signing the second first transaction, determined a nonce of a last transaction processed for the user, and pre-signed multiple copies the first transaction having successive incrementing nonces, transparently to the user; the method further comprising:

receiving, by the backend computer system from the endpoint computer system, the multiple pre-signed copies of the first transaction and the multiple pre-signed copies of the second transaction;

prior to utilizing the pre-signed first transaction, determining a nonce of a last transaction processed for the user;

utilizing a copy of the pre-signed first transaction with a successive incremented nonce;

prior to utilizing the pre-signed second transaction, determining a nonce of a last transaction processed for the user; and

utilizing a copy of the pre-signed second transaction with a successive incremented nonce.

10. The method of claim 1 wherein:

the transaction credentials for the source blockchain further comprise a cryptocurrency wallet configured for the source blockchain; and

the transaction credentials for the target blockchain further comprise a cryptocurrency wallet configured for the target blockchain.

11. The method of claim 1 wherein:

the obtained blockchain-based asset further comprises a non-fungible token (NFT) on the target blockchain.

12. The method of claim 10 wherein automatically obtaining the blockchain-based asset on the target blockchain further comprises:

executing a smart contract on the target blockchain to obtain the NFT.

13. The method of claim 1 wherein:

the source blockchain and the target blockchain each comprise separate ones from a group consisting of: FLOW, Ethereum, Solana, and Bitcoin.

14. A computer implemented method for automatically executing transactions across a source blockchain and a separate target blockchain, the method comprising:

in response to a user of the endpoint computer system selecting a specific blockchain-based asset on the target blockchain via an interface, hierarchically creating, by the endpoint computer system, target blockchain transaction credentials for the user, using the initial seed of entropy that was used to create the user's source blockchain transaction credentials, transparently to the user; and

automatically obtaining the blockchain-based asset on the target blockchain, using the hierarchically created target blockchain transaction credentials, and using target blockchain cryptocurrency obtained by the backend computer system in exchange for source blockchain cryptocurrency of the user;

wherein the user has source blockchain transaction credentials, the user's source blockchain transaction credentials having been created using an initial seed of entropy;

wherein the user does not have target blockchain transaction credentials;

wherein transaction credentials for a specific blockchain further comprise at least a unique public/private key pair and an address configured for transacting on the specific blockchain;

wherein the obtained blockchain-based asset is registered to the address of the user's hierarchically created target blockchain transaction credentials.

15. The method of claim 14 wherein hierarchically creating target blockchain transaction credentials for the user further comprises:

transparently to the user, using, by the endpoint computer system, a private child key derivation function to derive a private key for the user to transact on the target blockchain, from the private key of the user's source blockchain transaction credentials; and

transparently to the user, using, by the endpoint computer system, a public child key derivation function to derive a public key for the user to transact on the target blockchain, from the public key of the user's source blockchain transaction credentials.

16. The method of claim 14 wherein hierarchically creating target blockchain transaction credentials for the user further comprises:

transparently to the user, using, by the endpoint computer system, a private child key derivation function to derive a private key for the user to transact on the target blockchain, from the private key of the user's source blockchain transaction credentials; and

transparently to the user, using, by the endpoint computer system, a public child key derivation function to derive a public key for the user to transact on the target blockchain, from the private key of the user's source blockchain transaction credentials.

17. The method of claim 14 where automatically obtaining the blockchain-based asset on the target blockchain further comprises:

pre-signing a first transaction with the user's source blockchain private key transparently to the user, the first transaction comprising a transaction to exchange source blockchain cryptocurrency of the user for the amount of the target blockchain cryptocurrency at least sufficient to obtain the blockchain-based asset on the target blockchain;

pre-signing a second transaction with the user's target blockchain private key transparently to the user, the second transaction comprising a transaction to use target blockchain cryptocurrency to purchase the blockchain-based asset on the target blockchain;

transparently to the user, utilizing the pre-signed first transaction to automatically exchange the source blockchain cryptocurrency of the user for the amount of the target blockchain cryptocurrency at least sufficient to obtain the blockchain-based asset; and

transparently to the user, utilizing the pre-signed second transaction to use target blockchain cryptocurrency to purchase the blockchain-based asset on the target blockchain.

18. The method of claim 17 further comprising:

prior to pre-signing the first transaction and second transactions, determining a nonce of a last transaction processed for the user;

pre-signing multiple copies the first transaction having successive incrementing nonces, transparently to the user;

pre-signing multiple copies of the second transaction having successive incrementing nonces, transparently to the user;

prior to utilizing the pre-signed first transaction, determining a nonce of a last transaction processed for the user;

utilizing a copy of the pre-signed first transaction with a successive incremented nonce;

prior to utilizing the pre-signed second transaction, determining a nonce of a last transaction processed for the user;

utilizing a copy of the pre-signed second transaction with a successive incremented nonce.

19. The method of claim 14 wherein:

the transaction credentials for the source blockchain further comprise a cryptocurrency wallet configured for the source blockchain; and

the transaction credentials for the target blockchain further comprise a cryptocurrency wallet configured for the target blockchain.

20. The method of claim 14 wherein:

the obtained blockchain-based asset further comprises a non-fungible token (NFT) on the target blockchain.