



Apache
ResilientDB
Incubating



ResilientDB Fullstack

By - Apratim Shukla



ExpoLab
Creativity Unfolded

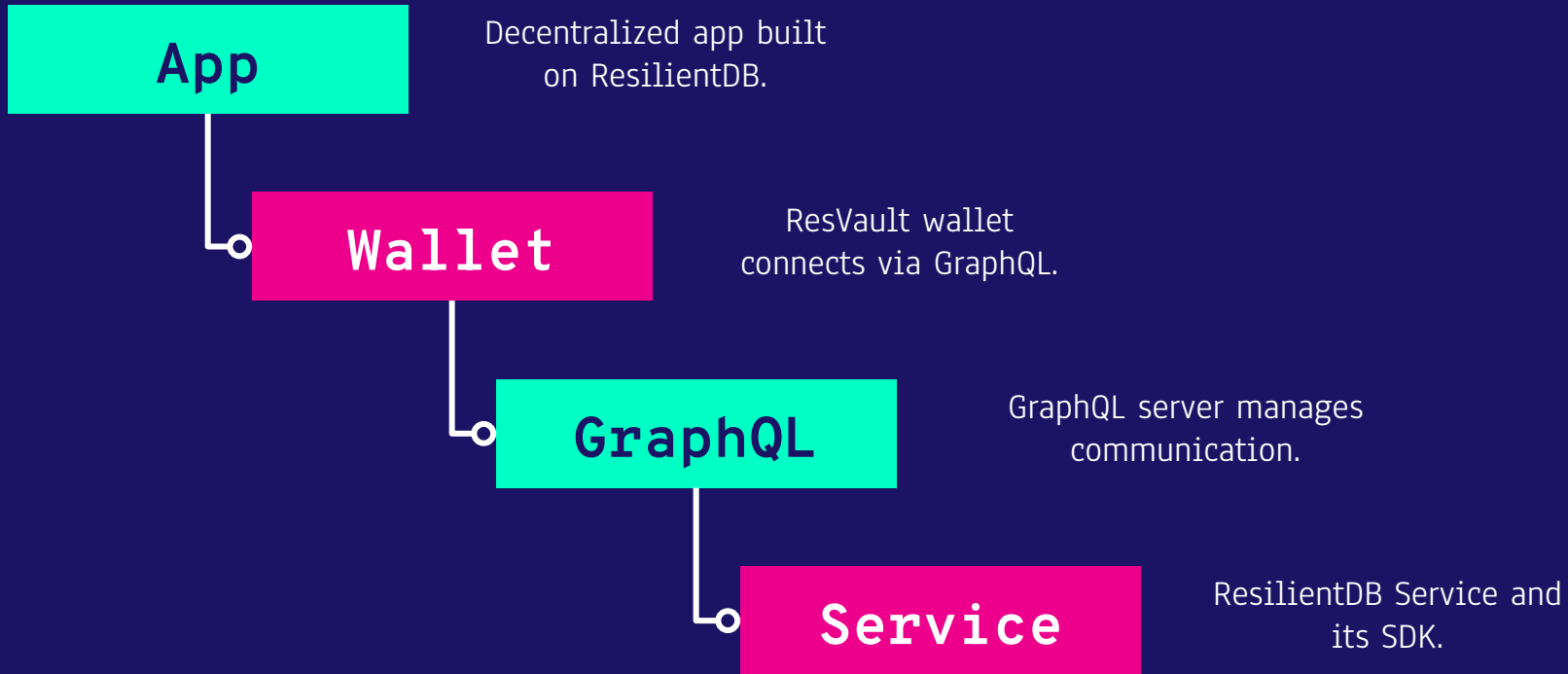
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What is ResilientDB Fullstack?

ResilientDB Fullstack comprises applications built on ResilientDB, utilizing ResVault as the wallet interface for seamless interaction via the ResilientDB GraphQL server. Web applications can effortlessly connect with ResVault using the provided web SDK.

Furthermore, ResilientDB enhances development flexibility by offering SDK support for languages like Python, Rust, and TypeScript, facilitating easy integration and application development with ResilientDB.

ResilientDB Fullstack Components



ResilientDB Service and SDK

Crow HTTP server

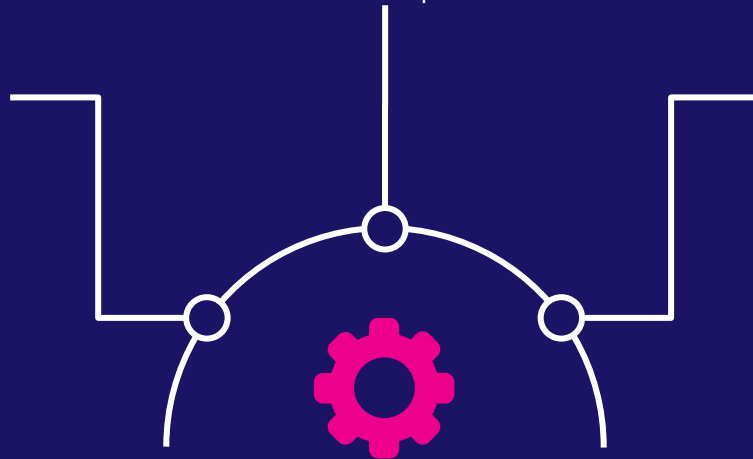
HTTP server exposes ResilientDB's key-value service endpoints.

KV service

ResilientDB Key-Value service offers efficient data management.

Python SDK

Python SDK utilizes HTTP server to connect with key-value service.



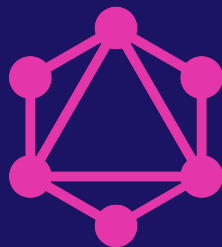
ResilientDB SDK Support

	Python	Rust	Typescript
Status	Stable	Alpha	Alpha
Usage	<u>GitHub</u>	<u>Cargo</u>	<u>NPM</u>



ResilientDB GraphQL Server

ResilientDB GraphQL server offers efficient data retrieval by allowing specific data requests, reducing over-fetching. Its single endpoint simplifies API structure compared to REST's multiple endpoints. The GraphQL Playground further enhances development with an interactive interface for testing and exploring APIs.



Repo: <https://github.com/apache/incubator-resilientdb-graphql>

Query vs Mutation

Query

GraphQL

Fetches data without changing it, allowing precise and efficient data retrieval.

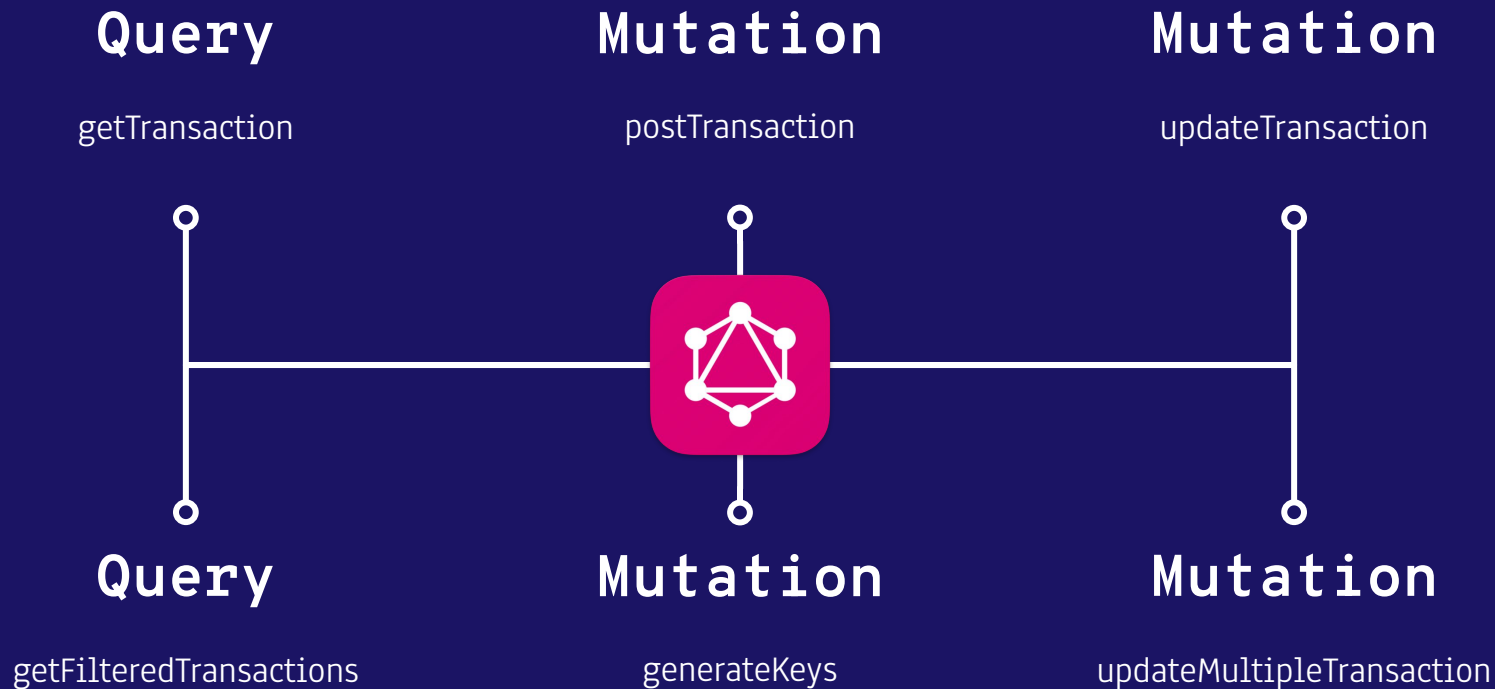


Mutation

GraphQL

Modifies data, handling create, update, and delete operations, altering data state.

ResilientDB GraphQL Queries & Mutations



What is ResVault?

ResVault is a chrome extension that serves as a wallet for ResilientDB. The wallet allows you to commit and retrieve data from ResilientDB and provides user account creation and deletion. It communicates with ResilientDB using the ResilientDB GraphQL server and enables transaction logging.

So, ResVault is quite similar to Metamask in terms of functionality.



Repo: <https://github.com/apache/incubator-resilientdb-resvault>

What is MetaMask?

MetaMask is a software cryptocurrency wallet used to interact with the Ethereum blockchain. It allows users to access their Ethereum wallet through a browser extension, which can then be used to interact with decentralized applications.



URL: <https://metamask.io>

ResVault Features

Txns



Submit transactions
via ResVault.

History



Access history to view
transactions.

Account



Create and log into
accounts easily.

Remove

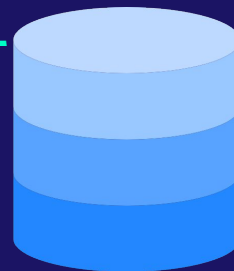


Effortlessly delete your
account.

Our Showcase

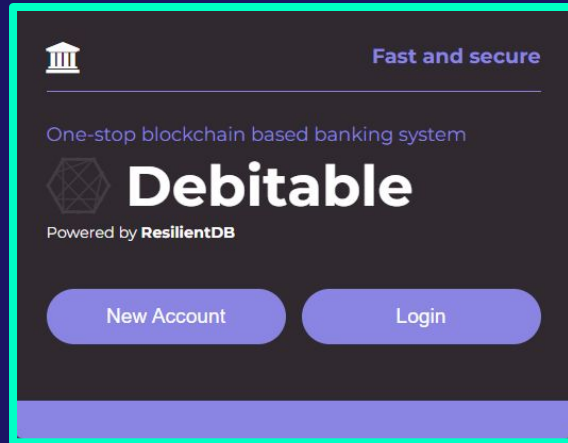
Resilient Applications

Powered by ResVault and GraphQL



What is Debitable?

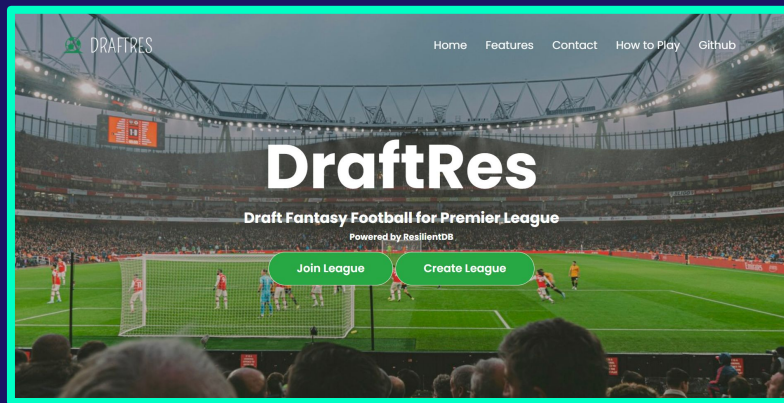
Debitable is a decentralized banking application built on top of ResilientDB. It utilizes ResVault to communicate with the ResilientDB Backend and provides features such as account creation, login and transfer of funds.



Live URL: <https://debitable.resilientdb.com>

What is DraftRes?

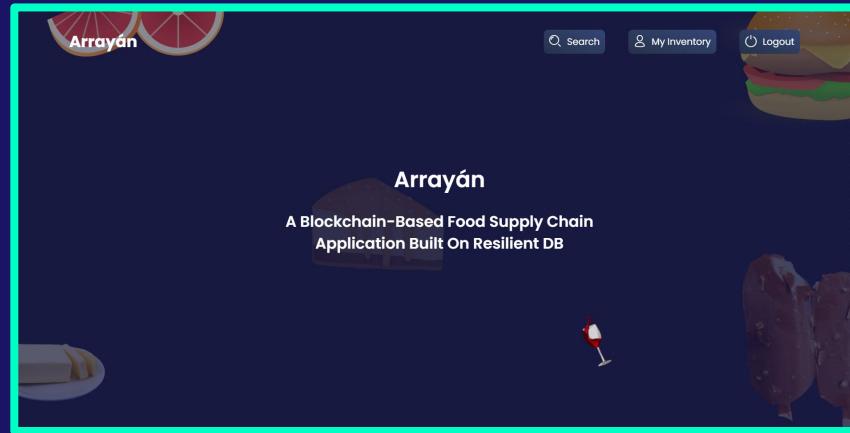
DraftRes is a fantasy football application built on top of ResilientDB. It utilizes ResVault to communicate with ResilientDB Backend and provides features such as team draft, room creation, and room joining to play with other users.



Live URL: <https://draftres.resilientdb.com>

What is Arrayán?

Arrayán is an innovative solution that digitizes the food supply chain through a blockchain app, fostering industrial symbiosis between the processing food industry, green hydrogen producers, and cosmetic companies.

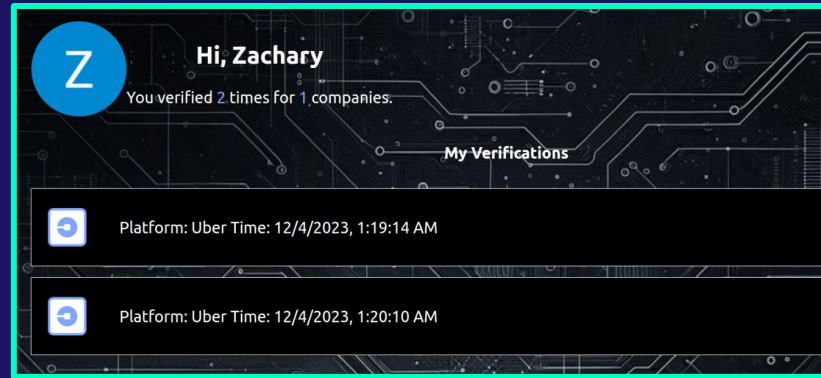


AIFS Winner

Live URL: <https://arrayan.resilientdb.com>

What is Echo?

Echo is a pioneering app that transforms contractor verification by combining advanced facial recognition with blockchain security. It offers an efficient, accurate ecosystem that enhances trust and mobility across service platforms, ensuring effortless and reliable verification.

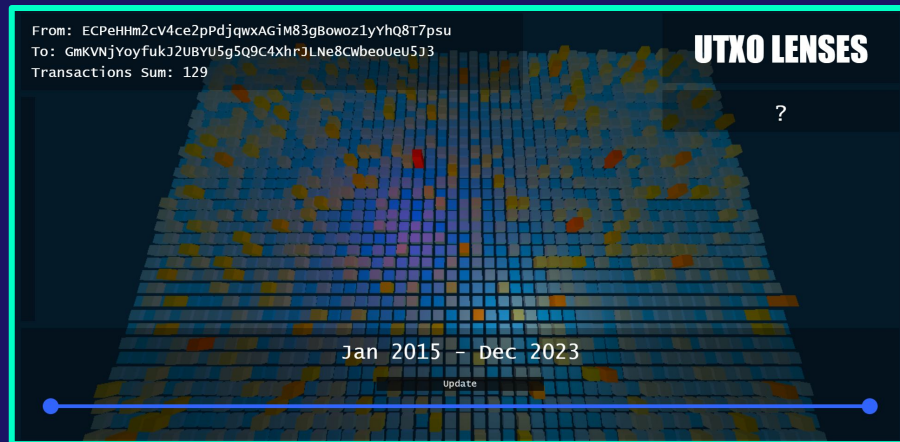


HackMIT Winner

Live URL: <https://echo-app.resilientdb.com>

What is UTXO Lenses?

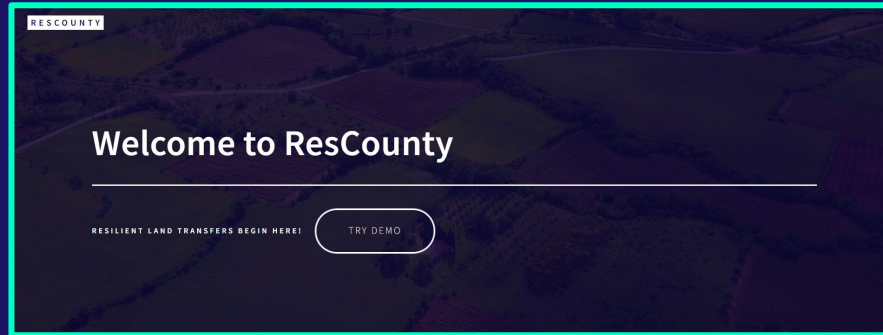
UTXO Lenses enhances ResilientDB's visualization by representing user transactions as a 3D Heatmap. This innovative feature transforms complex transaction data into intuitive, multi-dimensional visual maps, offering clear insights into transaction patterns and user interactions.



Live URL: <https://utxo-lenses.resilientdb.com>

What is ResCounty?

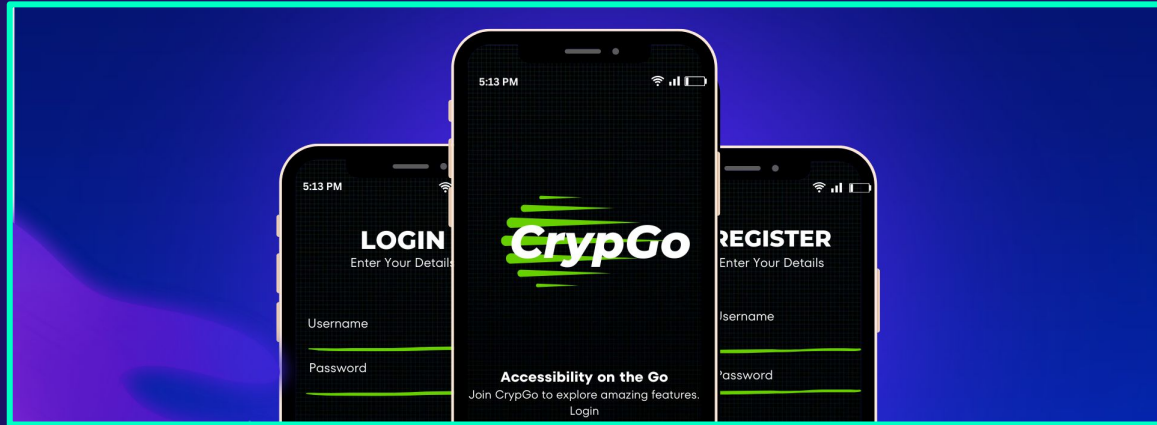
ResCounty is a blockchain-based land registration system that simplifies property ownership. It uses ResVault for communication with ResilientDB and features User Registration, Buyer and Seller Dashboards, and Payments Processing, enhancing transaction transparency and security.



Live URL: <https://rescounty.resilientdb.com>

What is CrypGo?

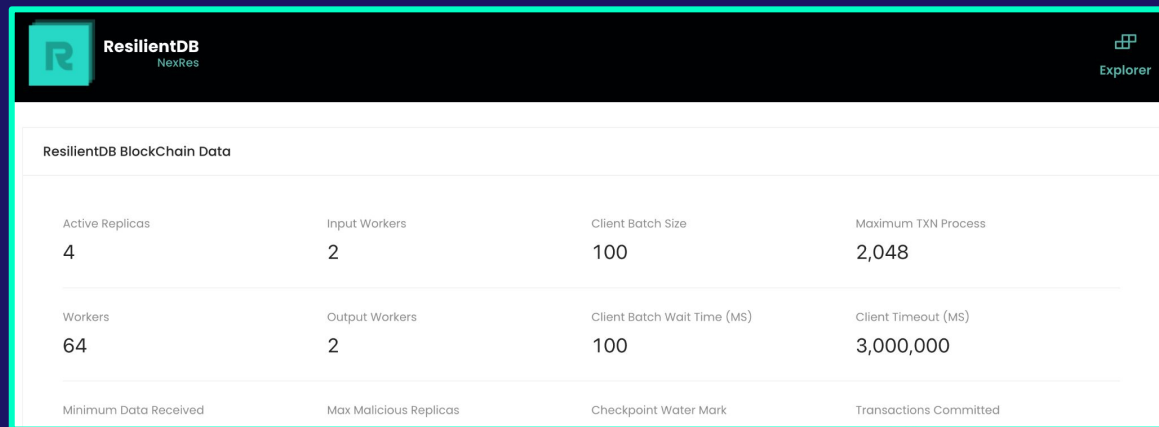
CrypGo is a streamlined mobile wallet app for easy money transactions. It connects with ResilientDB via GraphQL, featuring Send/Receive Transactions, User Registration, and a complete transaction history view



URL: [CrypGo - blog.resilientdb.com](https://blog.resilientdb.com)

What is Explorer?

The Explorer, a tool for ResilientDB blockchain, displays blocks, transaction details, ledger configurations, and a transaction history chart, offering intuitive and informative blockchain visualization.



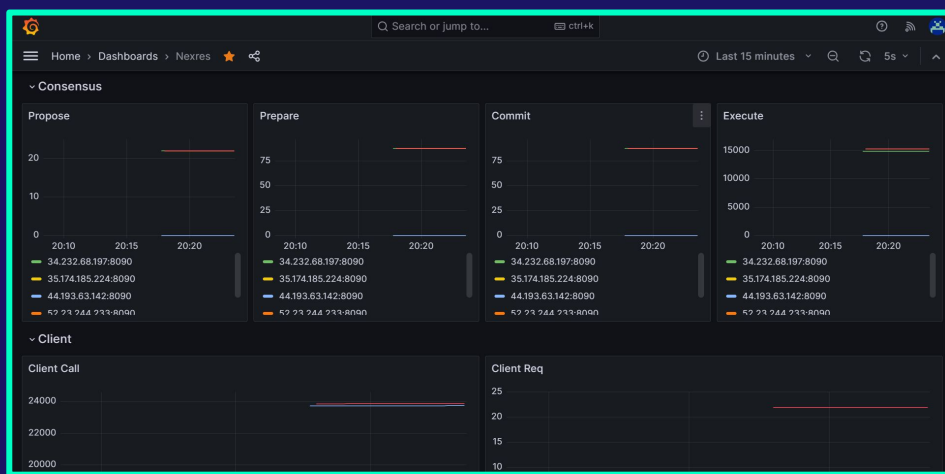
The screenshot shows the ResilientDB Explorer interface. At the top, there is a header with the ResilientDB logo and the text 'ResilientDB NextRes' on the left, and a grid icon with the word 'Explorer' on the right. Below the header, the main content area is titled 'ResilientDB BlockChain Data'. It contains a table with 8 columns and 2 rows of data. The columns are: Active Replicas, Input Workers, Client Batch Size, Maximum TXN Process, Workers, Output Workers, Client Batch Wait Time (MS), and Client Timeout (MS). The values are: 4, 2, 100, 2,048, 64, 2, 100, and 3,000,000. Below the table, there are four more columns: Minimum Data Received, Max Malicious Replicas, Checkpoint Water Mark, and Transactions Committed.

Active Replicas	Input Workers	Client Batch Size	Maximum TXN Process
4	2	100	2,048
Workers	Output Workers	Client Batch Wait Time (MS)	Client Timeout (MS)
64	2	100	3,000,000
Minimum Data Received	Max Malicious Replicas	Checkpoint Water Mark	Transactions Committed

Live URL: <https://explorer.resilientdb.com>

What is Monitoring?

Monitoring for ResilientDB is a concise, real-time Grafana dashboard utilizing Prometheus for system insights, offering efficient and intuitive visualizations for streamlined troubleshooting.



Live URL: <https://monitoring.resilientdb.com>

What is ResilientDB CLI?

ResilientDB CLI enhances user experience with cutting-edge deployment tools, streamlining the ResilientDB journey. It features improved CLI capabilities and introduces new Docker images, simplifying and refining the deployment process.

```
$ ./resdb-cli --help
Usage: resdb-cli [OPTIONS] COMMAND [ARGS]...

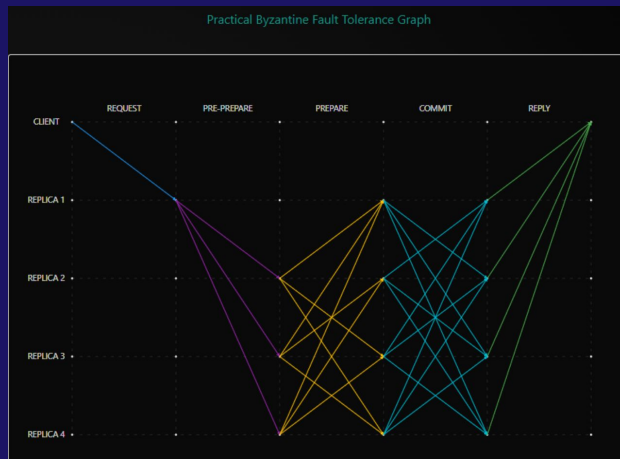
ResDB CLI

Options:
  --help  Show this message and exit.

Commands:
  create-instance  Create a new ResDB or PythonSDK instance
  delete-instance  Delete a running ResDB or PythonSDK instance
  exec-into        Bash into a running ResDB or PythonSDK instance
  login           Login to your account
  logout          Logout from the current account
  view-instances  View details about running instances
  whoami          Display the currently logged-in user
```

What is ResView?

ResView visualizes the PBFT process in Resilient DB, showing transaction stats graphically. It supports local and, with modifications, deployed instances. It's aimed at those learning about PBFT consensus in ResilientDB and developers monitoring system metrics.



URL: [ResView - Blog](#)



More Applications

Check out more Resilient Applications on
<https://github.com/ResilientApp>



Further Goals

- **ResVault User Interface Upgrade:** Combine modal-based interaction, account export and restoration, and support for multiple networks into a single, enhanced feature for a more user-friendly experience.
- **GraphQL Server Enhancement:** Enable real-time tracking of transactions with subscription support in the GraphQL server.
- **Framework Support Expansion:** Introduce ResVault SDK support for key web frameworks: React, Vue, and Angular.



Thank you!

