



ZilStream 2.0

Development Report

"Leveling Up ZilStream in Every Way"

January 2026

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1. Executive Summary

ZilStream launched in March 2021 and quickly became the most visited product in the Zilliqa ecosystem. For the first time, Zilliqa users could easily explore trading activity, track token prices, and monitor their portfolios—all in one place. The platform became essential infrastructure, powering data feeds to major platforms like CoinGecko, CoinMarketCap, and DefiLlama.

ZilStream 2.0 represents a complete rebuild of the platform for Zilliqa 2.0's new EVM-compatible blockchain. This development report documents the successful completion of all four milestones outlined in the \$40,000 grant proposal submitted to the gZIL Collective.

Key Achievements

- **Complete Platform Rebuild:** Modern web application with 72 custom UI components
- **Real-Time Data Engine:** High-performance indexer processing blocks in under 1 second
- **Professional Trading Tools:** TradingView charts with integrated swap functionality
- **NFT Membership System:** Blockchain-verified membership with exclusive features
- **All Four Milestones Completed:** 100% delivery on grant commitments

What Was Built

Component	Description
Web Platform	Next.js 15 application with real-time updates
Blockchain Indexer	Go-based engine processing 1,000+ blocks/second
Smart Contracts	ERC-721 membership NFT on Zilliqa mainnet
API Layer	REST API serving tokens, pairs, and market data

2. The Vision & Original Goals

The Original Proposal

ZilStream 2.0 was proposed to the gZIL Collective with a clear mission: catalyze the next phase of growth and utility within the Zilliqa ecosystem. The proposal outlined a comprehensive upgrade to transform ZilStream from a data dashboard into a fully live, permissionless, and interactive platform.

Core Objectives

The proposal identified four key areas of improvement:

1. **Automated, Live On-Chain Integration** — Pull data directly from the blockchain in real-time, with new tokens and pairs appearing instantly
2. **Dynamic Trading and Interaction** — Professional charts, live trade feeds, and integrated trading
3. **Deep Blockchain Exploration** — Browse and filter tokens, contracts, transactions, and wallets
4. **Enhanced Portfolio Management** — Multi-wallet tracking, P&L updates, alerts, and data exports

The Four Milestones

The grant was structured around four milestones, each representing 20% of the total funding:

Milestone	Description	Budget
1	New UI & Live Token Feed	\$8,000
2	Transactions, Tokens & Wallets	\$8,000
3	Live Charts & Trading	\$8,000
4	Portfolio Upgrade	\$8,000

Alignment with gZIL Collective Mission

ZilStream 2.0 directly supports the Collective's mission of driving on-chain activity and real-world utility by:

- Making blockchain data accessible and understandable
- Providing tools that enable confident on-chain participation
- Connecting projects with users through transparent data
- Supporting the growth of DeFi activity on Zilliqa



Milestone 1 – New UI & Live Token Feed (20%)

ZilStream will roll out a completely refreshed interface, designed to be faster, cleaner, and easier to use. Every new token and pair created on-chain will show up live—no manual work needed.



Milestone 2 – Transactions, Tokens & Wallets (20%)

Deep blockchain browsing comes to ZilStream. Explore individual transactions, token pages, and wallet activity in full detail. Search by transaction ID or wallet address, fast and easily.



Milestone 3 – Live Charts & Trading (20%)

Each trading pair gets its own live, interactive chart powered by TradingView. See trades stream in real-time, and trade directly from the chart—no switching tabs or apps.



Milestone 4 – Portfolio Upgrade (20%)

Account support and a fully revamped portfolio experience. Connect multiple wallets, track real-time PNL, set up alerts, export transaction history, and integrate with crypto tax platforms.

3. What We Built: The Platform

Token & Pair Discovery

One of the core promises of ZilStream 2.0 was automatic, live detection of new tokens and trading pairs. This has been fully delivered.

How It Works

- When a new token is created on the Zilliqa blockchain, it appears on ZilStream within seconds
- New trading pairs are detected the moment they're listed on supported DEXes
- No manual intervention is required—the system is fully automated

Token Pages Include














- Current price in USD and ZIL
- 24-hour and 7-day price changes
- Market capitalization and trading volume
- Total liquidity across all pairs
- All trading pairs containing that token
- Transaction history and recent events

Trading Pair Explorer

- Browse all available trading pairs
- Filter by DEX protocol (PlunderSwap, etc.)
- Sort by volume, liquidity, or age
- View real-time price changes

Tokens

Listing of assets returned by the ZilStream API token endpoint.

Tokens							
Token	Price	Price (ZIL)	24h %	7d %	Market Cap	Volume (24h)	Liquidity
 Wrapped ZIL WZIL	\$0.005352	1.00	-1.88%	+14.74%	\$109,014.65	\$38,706.40	\$334,555.54
 USD Coin USDC	\$1.00	187.29	-0.62%	+0.25%	\$144,879.98	\$22,077.84	\$162,543.73
 Zilliqa-bridged USDT token zUSDT	\$1.00	186.86	-0.18%	+1.00%	\$754,886.71	\$16,406.03	\$128,633.68
 Kalijo USD kUSD	\$1.00	188.49	+1.11%	+7.56%	\$60,338.70	\$3,276.86	\$61,261.26
 Torch Liquid ZIL tZIL	\$0.005522	1.064799	-4.90%	+11.65%	\$1,293,163.22	\$24.28	\$23,616.81
 Kalijo SEED	\$0.049573	11.006	-7.19%	+22.31%	\$495,725.22	\$35.44	\$18,112.64
 PlunderSwap Staked ZIL pZIL	\$0.005441	1.002258	-6.16%	+10.46%	\$1,269,263.99	\$0.00	\$8,627.67
 ZilPepe ZILPEPE	\$0.0,3374	0.0,2625	+283.88%	+348.90%	\$141,941.82	\$0.00	\$5,427.53
 Amazing Pool (Avely) aZIL	\$0.011963	1.00	-	-	\$800,646.56	\$0.00	\$2,174.12
 Governance ZIL gZIL	\$0.9252	170.43	+520.67%	+554.28%	\$518,058.23	\$8.56	\$1,593.78
 Zoge Coin ZOGE	\$0.0,6322	0.0,9015	+26.32%	+47.72%	\$4,362.23	\$0.00	\$422.74
 TacoCat TACO	\$0.0,1034	0.000078	-66.24%	-65.50%	\$434.48	\$0.00	\$391.98
 Stellar Void VOID	-	-	-	-	-	\$0.00	\$232.44

Token listing with real-time prices and market data

Live Trading Experience

ZilStream 2.0 transforms how users interact with market data by providing professional-grade trading tools.

TradingView Charts

Every trading pair now features a full TradingView chart—the same charting technology used by professional traders worldwide. Users can:

- View price history with multiple timeframes
- Use technical analysis tools (trend lines, indicators)
- Watch price movements update in real-time

Real-Time Trade Feed

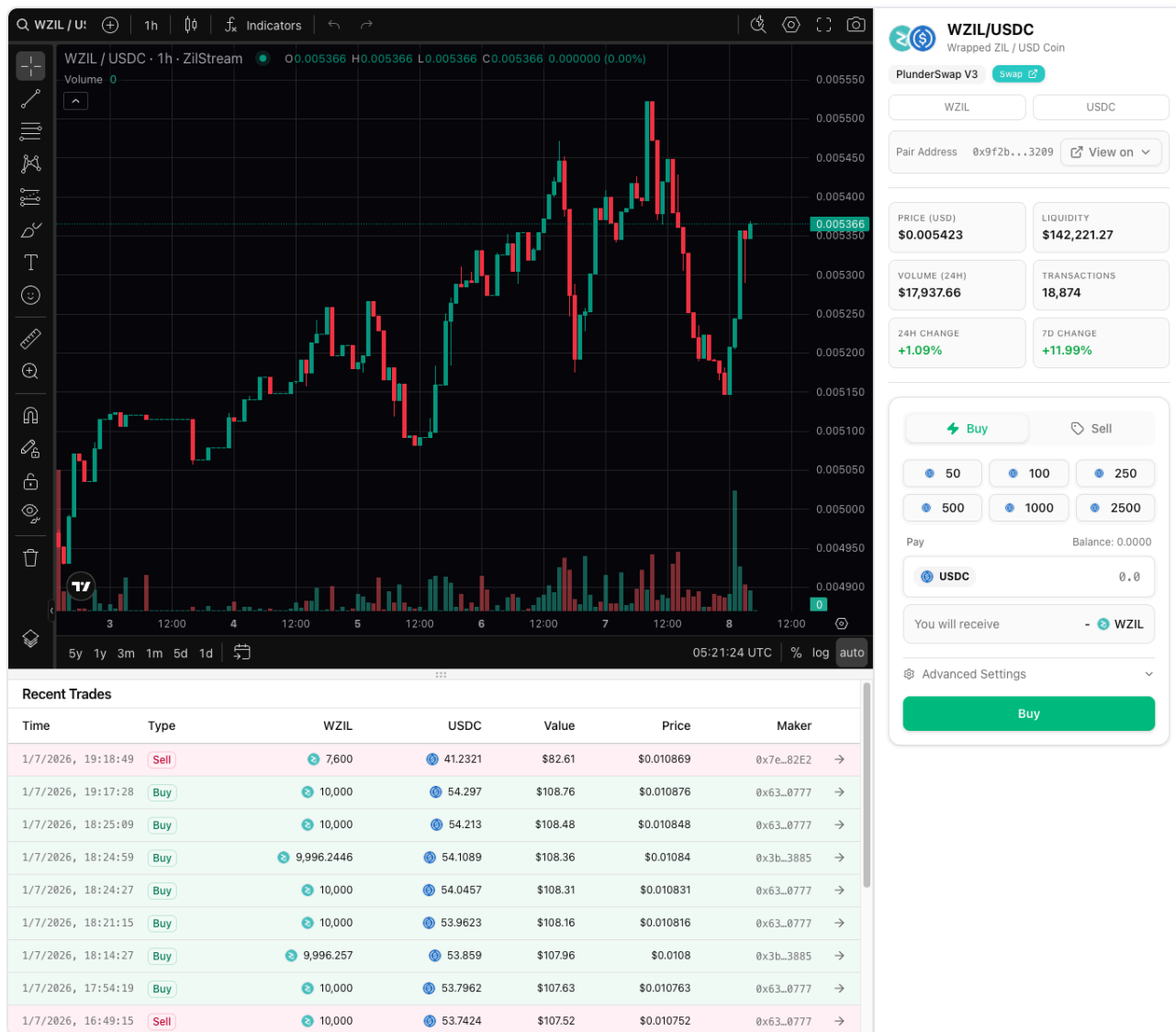
Below each chart, users see individual trades as they happen on the blockchain. Each trade shows:

- The tokens exchanged
- Trade size in USD
- The wallet that made the trade
- Timestamp (updated live)

Integrated Swap

Perhaps the most powerful feature—users can trade directly on ZilStream without leaving the page:

- Select tokens to swap
- See real-time quotes from PlunderSwap
- Customize slippage tolerance
- Execute trades with their connected wallet



TradingView chart with integrated swap functionality

Blockchain Explorer Features

ZilStream 2.0 includes comprehensive blockchain exploration capabilities:

Block Explorer

- View recent blocks as they're produced (every ~1 second)
- See transaction counts and gas usage per block
- Live updates showing new blocks in real-time

Transaction Browser

- Browse all transactions on the network
- Search by transaction hash
- View detailed transaction information (sender, recipient, value, status)

Wallet Activity

- Enter any wallet address to see its complete history
- Filter transactions by type or token
- Track wallet behavior over time

Transactions

Recent transactions on the Zilliqa network.

Transactions						
Transaction Hash	Block	Timestamp	From	To	Value (ZIL)	Gas Used
0x47bc64a4_a5041696	17,534,457	1/8/2026, 12:18:51	0x43e6...8A9D	0x5B2D...cF44	677.5987	0
0xbc572f37_54026989	17,534,094	1/8/2026, 12:12:08	0x49e8...2903	0x4d9b...92Fc	86,340.1959	0
0x69175069_e876603d	17,534,037	1/8/2026, 12:11:04	0x9f04...0896	0xF2fD...5a70	86,340.2959	0
0xfa4db62d_012282ac	17,533,983	1/8/2026, 12:10:04	0x9f04...0896	0x49e8...2903	86,340.2959	0
0x70abdf17_8c95b685	17,533,841	1/8/2026, 12:07:27	0x2970...C35d	0x730f...8C60	860	0
0xd07f9403_a00f60a2	17,533,437	1/8/2026, 12:00:00	0xfAD0...A822	0x43e6...8A9D	1,163.89	0
0xa8935c6e_8bed29b1	17,533,347	1/8/2026, 11:58:21	0x43e6...8A9D	0xeF8C...a421	1,704.06	0
0x5ddf2dac_0de0b14b	17,533,288	1/8/2026, 11:57:15	0x2970...C35d	0x4a99...0018	9.5286	0
0xda0aabfd_bedbcc17	17,533,173	1/8/2026, 11:55:07	0x63Ef...0777	0xe301...2086	0	0
0x6d5b8ba6_7091cabb	17,533,014	1/8/2026, 11:52:10	0x1a9e...F25e	0x62a9...6b93	0	0
0x03b3f4d0_5366c79f	17,532,963	1/8/2026, 11:51:14	0x1a9e...F25e	0x62a9...6b93	0	0
0x80d07082_7f813c5f	17,532,948	1/8/2026, 11:50:57	0x1a9e...F25e	0x62a9...6b93	0	0
0xaf8dabc7_65627183	17,532,790	1/8/2026, 11:48:02	0x4feD...9E94	0xfAD0...A822	868.65	0
0x93ed5b21_d786baae	17,532,757	1/8/2026, 11:47:26	0x11b2...A2E5	0x5500...E0A6	627.8124	0
0x8d7922dd_b689ce10	17,532,660	1/8/2026, 11:45:37	0x7e09...82E2	0xC465...0a18	0	0
0x07547bf5_b006c9a6	17,532,650	1/8/2026, 11:45:26	0x63Ef...0777	0xe301...2086	0	0
0xddce9746_0ca1647b	17,532,638	1/8/2026, 11:45:13	0x63Ef...0777	0xe301...2086	0	0
0x38f9741f_52ffd418	17,532,588	1/8/2026, 11:44:17	0x63Ef...0777	0xe301...2086	0	0
0xb424069b_48cbfd3a	17,532,569	1/8/2026, 11:43:57	0x63Ef...0777	0xe301...2086	0	0
0x7d303cc7_28e040e5	17,532,466	1/8/2026, 11:42:02	0x49e8...2903	0x4d9b...92Fc	74,678.7	0
0xb6871920_3c7f0438	17,532,440	1/8/2026, 11:41:34	0x63Ef...0777	0xe301...2086	0	0
0x2501768d_33df36b7	17,532,428	1/8/2026, 11:41:20	0x63Ef...0777	0xe301...2086	0	0
0xbfe0d371_bd1ebb07	17,532,377	1/8/2026, 11:40:24	0x63Ef...0777	0xe301...2086	0	0
0x412aa94d_7140e894	17,532,365	1/8/2026, 11:40:11	0x63Ef...0777	0xe301...2086	0	0
0x149fc2bd_64b7ec97	17,532,306	1/8/2026, 11:39:06	0xc5a1...B652	0x49e8...2903	74,678.8	0

Transaction browser with detailed activity view

Member-Exclusive Features

ZilStream 2.0 introduces powerful features exclusively available to members.

Personal Dashboard

Members can connect their wallets and access a comprehensive dashboard showing:

- Total portfolio value across all connected wallets
- Real-time profit and loss (P&L) tracking
- Individual token holdings and their current values
- Historical performance visualization

Staking Position Tracking

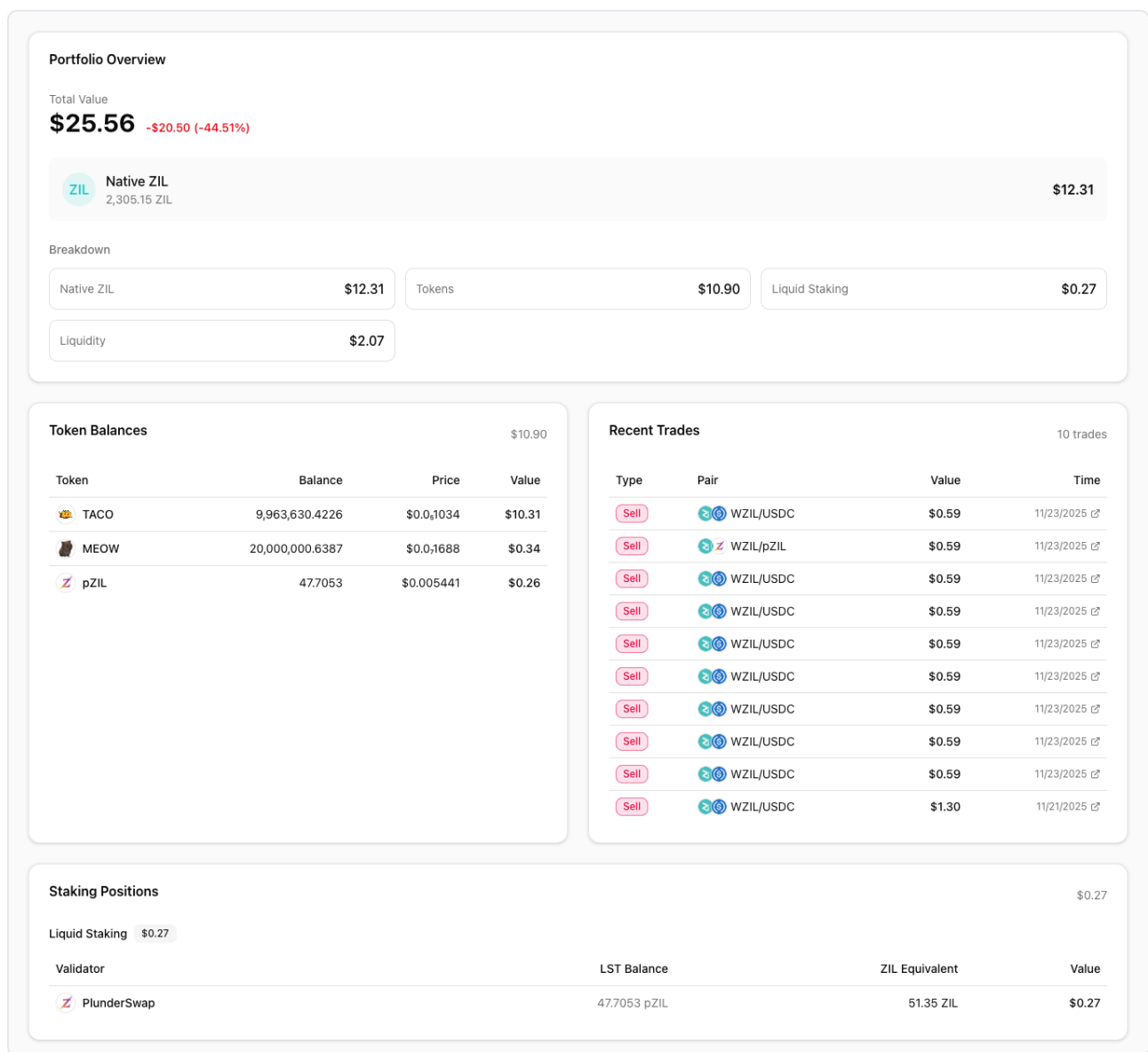
The dashboard automatically detects and displays staking positions across six major liquid staking providers on Zilliqa:

- PlunderSwap (pZIL)
- Encapsulate (encapZIL)
- TorchWallet (tZIL)
- Lithium Digital (litZIL)
- Amazing Pool (aZIL)
- StakeShark (shZIL)

Liquidity Pool Positions

For users providing liquidity on DEXes, the dashboard shows:

- Active LP positions (both V2 and V3 pools)
- Current value of provided liquidity
- Earned fees and rewards




Member dashboard with portfolio overview and staking positions

Price Alerts

Members can set up custom price alerts for any token:

- Configure target prices (above or below current price)
- Set percentage change triggers
- Receive browser notifications when conditions are met
- Track multiple tokens simultaneously
- View history of triggered alerts

 **Create Price Alert**

×

Get notified when gZIL reaches your target price.

Current price: \$0.9252

Alert Type

Price Threshold

Condition

Price goes above

Target Price (USD)

\$ 0.00

Cancel

Create Alert

Price alert configuration interface

Data Exports

For tax reporting and record-keeping, members can export their data:

- Complete transaction history in Excel or CSV format
- Portfolio snapshots with USD values at transaction time
- Compatible with popular crypto tax platforms

Export Data

Export your trading history and portfolio data for tax reporting or personal records.

Date Range

Select the time period for your export

Quick select tax year

2026

2025 ✓

2024

Selected range

📅 Jan 1, 2025

 to

📅 Dec 31, 2025

Export Format

Choose the file format for your export

📄 CSV

Comma-separated values

📄 JSON

Structured data format

📄 Excel

Microsoft Excel spreadsheet

📄 Koinly

Crypto tax software format

Data to Export

Select which data you want to include in the export

- ☒ **Trading Events**
Swaps, liquidity adds/removes
- ☐ **Transactions**
All on-chain transactions
- ☐ **Portfolio Snapshot**
Current token balances

📄 Export Data

Transaction history export with multiple format options

4. What We Built: The Engine

What is a Blockchain Indexer?

Behind ZilStream's real-time interface is a sophisticated system called an "indexer." Think of it as a powerful telescope constantly watching the Zilliqa blockchain.

The Challenge

Blockchains store data in a format optimized for security and verification, not for quick lookups. Asking the blockchain "What was the price of Token X yesterday?" would require scanning through millions of transactions—far too slow for a responsive website.

The Solution

The ZilStream Indexer continuously reads the blockchain, extracts relevant information, and organizes it in a way that makes lookups instant. When you load a token page on ZilStream, the data appears immediately because it's already been processed and organized.

What It Captures

- Every block produced on the network
- Every transaction that occurs
- Every DEX trade, liquidity addition, and token transfer
- Every new token creation and pair listing

Technical Achievements

The ZilStream Indexer was built to handle Zilliqa 2.0's unique characteristics, including its extremely fast block times of approximately one second.

Performance Metrics

Metric	Achievement
Real-time sync	Processes new blocks within 1 second of production
Historical sync	Can process 1,000+ blocks per second when catching up
Bulk operations	Achieves 20,000+ blocks per second for initial data loading

Multi-Protocol Support

The indexer uses a modular architecture that can support multiple DEX protocols:

- PlunderSwap (Uniswap V2 compatible)
- V3 pools with concentrated liquidity
- Easily extensible to new protocols

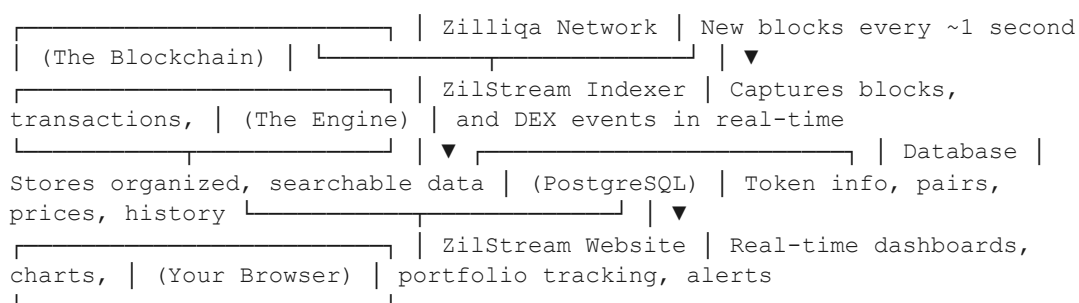
Automatic USD Pricing

Every transaction is automatically valued in USD at the time it occurred:

- Maintains historical ZIL/USD exchange rates
- Calculates accurate values for all tokens
- Enables portfolio P&L tracking

How Data Flows

The following diagram illustrates how blockchain data travels from the Zilliqa network to your screen:



Real-Time Updates

When a trade happens on the blockchain, the update reaches your browser in under one second:

1. The indexer detects the new block
2. Processes and extracts the trade data
3. Broadcasts the update via WebSocket
4. Your browser receives and displays it

This real-time capability means ZilStream users see market activity as it happens—crucial for traders making time-sensitive decisions.

5. The Membership System

NFT-Based Membership

ZilStream 2.0 introduces a completely redesigned membership system using NFT (Non-Fungible Token) technology. This represents a significant upgrade from the previous approach.

Previous System

- Required holding STREAM tokens as a percentage of wallet balance
- Membership status was unclear and constantly changing
- Difficult to understand and verify

New System

- Membership is represented by an NFT you own
- Clear expiration date (like a domain name subscription)
- Fully transferable—can be gifted to others
- Verifiable on the blockchain

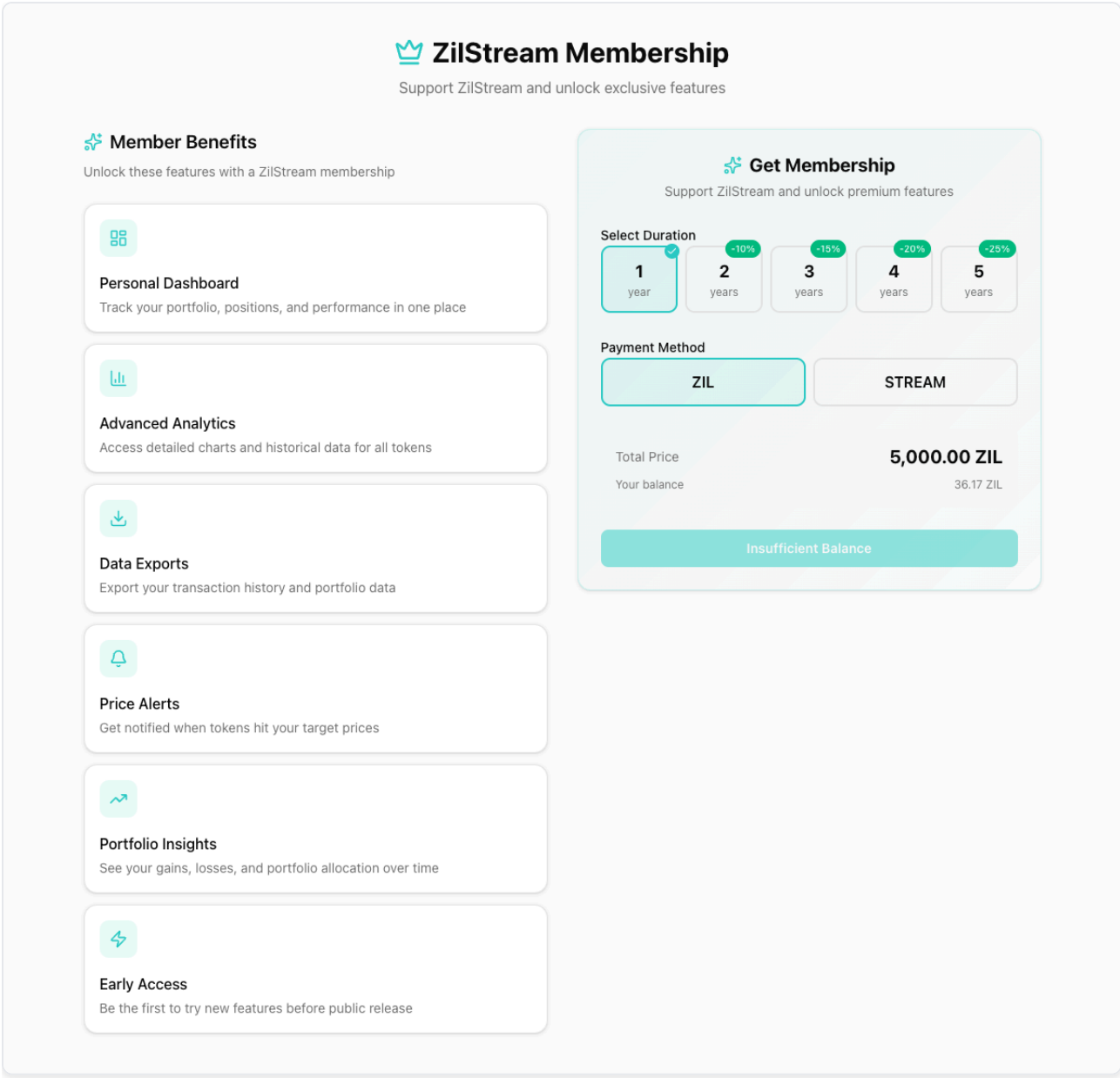
How It Works

1. Visit ZilStream and connect your wallet
2. Choose a membership duration (1 to 5 years)
3. Pay with ZIL or STREAM tokens
4. Receive your membership NFT
5. Access exclusive features immediately

Pricing Structure

Longer commitments receive progressive discounts:

Duration	Discount
1 year	0%
2 years	10%
3 years	15%
4 years	20%
5 years	25%



NFT membership purchase interface with duration options

Smart Contract Security

The membership NFT is powered by a smart contract deployed on the Zilliqa mainnet.

Contract Details

Property	Value
Address	0xC5041416D2F4d8c5e874DCFB08322991FA4ACDa9
Standard	ERC-721 (industry standard for NFTs)
Network	Zilliqa Mainnet

Security Features

Feature	Purpose
Reentrancy Protection	Prevents exploitation during transactions
Front-running Protection	Price slippage limits protect buyers
Two-Step Ownership	Prevents accidental transfers
No Fund Custody	Payments go directly to treasury

Membership Benefits

Feature	Free Users	Members
Token & pair browsing	✓	✓
Live trading charts	✓	✓
Basic market data	✓	✓
Personal dashboard	×	✓
Portfolio tracking	×	✓
Staking position view	×	✓
LP position tracking	×	✓
Price alerts	×	✓
Data exports	×	✓
Early feature access	×	✓

STREAM Token Utility

The STREAM token continues to play an important role in ZilStream 2.0:

- **Discounted Memberships:** Pay with STREAM for better rates than ZIL
- **Fee Reduction:** Reduced fees on platform interactions
- **Governance:** Future voting on platform development
- **Community Alignment:** Connects members to ZilStream's success

6. Milestone Completion Review

All four milestones outlined in the original grant proposal have been successfully completed.

Milestone 1: New UI & Live Token Feed ✓ COMPLETE

Proposal Commitment:

"ZilStream will roll out a completely refreshed interface... every new token and pair created on-chain will show up live on the site—no manual work needed."

Delivered:

- Complete UI overhaul with modern, responsive design
- 72 custom UI components built from scratch
- Automatic token detection when created on-chain
- Live pricing and market data
- Mobile-responsive design works on all devices

Milestone 2: Transactions, Tokens & Wallets ✓ COMPLETE

Proposal Commitment:

"This update brings deep blockchain browsing to ZilStream. You'll be able to explore individual transactions, token pages, and wallet activity in full detail."

Delivered:

- Full blockchain explorer functionality
- Comprehensive token pages with all metrics
- Wallet activity browsing for any address
- Search by transaction hash or wallet address
- Transaction history with human-readable details

Milestone 3: Live Charts & Trading ✓ COMPLETE

Proposal Commitment:

"Each trading pair will get its own live, interactive chart powered by TradingView. You'll see trades stream in real-time, and even be able to trade directly from the chart."

Delivered:

- TradingView professional charts for all pairs
- Real-time trade streaming below charts
- Integrated swap functionality on ZilStream
- Multi-protocol routing (V2 and V3)
- Slippage protection and deadline settings

Milestone 4: Portfolio Upgrade ✓ COMPLETE

Proposal Commitment:

"This milestone brings account support and a fully revamped portfolio experience. You'll be able to connect multiple wallets, track real-time PNL, set up alerts, and export your transaction history."

Delivered:

- Account system with wallet connections
- Real-time P&L tracking
- Staking position monitoring
- Liquidity pool position tracking
- Price alerts with browser notifications
- Data export functionality (Excel, CSV, Koinly)

7. Technology Summary

The Platform (Web Application)

ZilStream 2.0's web interface was built using modern, industry-standard technologies chosen for performance, reliability, and developer experience.

Technology	Purpose
Next.js 15	React framework for fast, SEO-friendly pages
React 19	User interface components
TypeScript	Type-safe code for fewer bugs
Tailwind CSS v4	Consistent, responsive styling
ShadCN UI	Professional component library
wagmi + viem	Blockchain wallet integration
RainbowKit	Multi-wallet support (MetaMask, etc.)
TradingView	Professional trading charts
React Query	Efficient data fetching and caching

Hosting: Deployed on Cloudflare's global CDN for fast loading worldwide.

The Engine (Indexer)

The backend indexer was built for maximum performance and reliability.

Technology	Purpose
Go 1.25	High-performance compiled language
PostgreSQL 15	Robust, scalable database
Centrifugo	Real-time WebSocket updates
Zilliqa RPC	Direct blockchain communication

Key Optimizations

- Adaptive batch processing for different network conditions
- PostgreSQL COPY for bulk data operations
- Connection pooling for database efficiency
- Rate limiting to prevent RPC overload

Open Source Commitment

In keeping with ZilStream's founding principles, all code remains publicly available:

- **Frontend:** github.com/ZilStream/v2
- **Indexer:** github.com/ZilStream/indexer

This transparency allows the community to verify how data is processed, contribute improvements, fork and build upon the work, and track development progress in real-time.

8. Looking Forward

Sustainability

ZilStream 2.0 was designed with long-term sustainability in mind:

Revenue Model

- NFT membership provides predictable, recurring revenue
- STREAM token utility creates ecosystem value
- Premium features justify membership investment

Lean Operations

- Solo developer with 15+ years of experience
- Efficient infrastructure minimizes hosting costs
- Open-source model reduces development burden

Proven Track Record

ZilStream has operated continuously since March 2021, demonstrating its ability to maintain and improve the platform over time with limited resources.

Future Innovations

The original proposal mentioned several future enhancements that remain on the roadmap:

- **AI-Powered Insights:** Machine learning to identify trends, unusual activity, and trading opportunities
- **Enhanced Block Explorer:** Deeper contract analysis, verified source code display, and developer tools
- **Additional Protocol Support:** Integration with new DeFi protocols as they launch on Zilliqa

Community First

ZilStream was built by a community member, for the community. This philosophy continues:

- All development remains open-source
- Community feedback shapes priorities
- Transparent progress tracking on GitHub
- Regular updates and communication

Acknowledgments

Thank you to the gZIL Collective for supporting this development. Your investment has enabled ZilStream to evolve into a comprehensive platform that serves the Zilliqa ecosystem's needs.

Thank you also to the Zilliqa community—the users, traders, builders, and enthusiasts who have made ZilStream the most visited product in the ecosystem since 2021. Your continued support and feedback drive the platform's development.

ZilStream 2.0 represents a significant leap forward for Zilliqa ecosystem infrastructure, providing the tools and insights the community needs to participate confidently in on-chain activity.

For questions or feedback, contact:

- **Website:** <https://zilstream.com>
- **Twitter/X:** <https://x.com/zilstream>
- **Telegram:** <https://t.me/zilstream>
- **GitHub:** <https://github.com/ZilStream>