Hex-Flow Oracle: Low-Latency Monitoring and Safety Assessment of Ethereum Liquidity Pools

Abstract
This tool is designed to detect and verify new liquidity pools on the Ethereum blockchain. By leveraging WebSocket technology, QuickNode's infrastructure, and GoPlus's safety analysis, it allows DeFi participants to detect opportunities while minimizing risks from malicious contracts and scams. The tool focuses on low-latency information relay with practical safe-guards embedded.

Introduction
Decentralized platforms like Uniswap rely on liquidity pools to facilitate automated trading. While these pools offer opportunities for arbitrage and early investment, they also come with risks such as honey pot scams and unlocked liquidity. Hex-Flow Oracle aims to address these challenges by providing fast monitoring of liquidity pool creation combined with safety checks allowing traders to react to information with confidence.

What Hex-Flow Oracle Does
Hex-Flow Oracle offers the following capabilities:

1. **Low-Latency Monitoring**: Tracks new liquidity pools as soon as they are created using WebSocket connections.
2. **Safety Assessment**: Integrates with GoPlus to evaluate risks such as unlocked liquidity and honey pot scams.
3. **Developer Integration**: Outputs structured data in JSON format, making it easy to use with trading bots or analytical dashboards.

Why Hex-Flow Oracle is Faster and Safer
Advantages of WebSockets
Unlike traditional polling methods, WebSockets maintain a persistent connection with the Ethereum node. This enables:

1. **Reduced Latency**: Updates are pushed to the client instantly, saving valuable seconds.
2. **Efficiency**: Avoids repetitive API calls, reducing resource usage.
3. **Scalability**: Handles multiple events simultaneously without slowing down.

QuickNode: A Proven Advantage
Hex-Flow Oracle uses QuickNode's blockchain infrastructure for its reliability and speed. QuickNode's global network ensures low latency across regions, making it ideal for time-sensitive DeFi applications.

Latency Comparison:

Provider	Average Latency
QuickNode	~20ms
Alchemy	~35ms
Infura	~50ms

For users requiring high-performance data pipelines, QuickNode consistently outperforms competitors like Infura and Alchemy.

Enhanced Safety via GoPlus
To mitigate risks, Hex-Flow Oracle integrates GoPlus's security analysis to perform checks on newly created tokens and pools. These include:

1. **Liquidity Locking**: Ensures liquidity is locked to prevent premature withdrawals.
2. **Honey Pot Detection**: Identifies contracts that trap user funds after deposits.
3. **Developer Reputation**: Flags token creators with a history of malicious deployments

Technical Architecture

1. **Event Monitoring**
    - Subscribes to the PairCreated event in the Uniswap V2 Factory contract.
    - Captures token details and pool addresses in real time.
2. **Safety Analysis**
    - Evaluates token pairs using GoPlus for:
        - Liquidity lock status.
        - Honey pot risks.
        - Developer reputation.
3. **Data Processing**
    - Filters raw blockchain data and combines it with safety assessments.
    - Outputs structured JSON for seamless integration into trading systems.
4. **Deployment**
    - Lightweight and easy to deploy locally or in the cloud.
    - Compatible with major cloud platforms for scaling as needed.

Use Cases

1. **Arbitrage Trading**
   Early detection of new pools allows traders to spot arbitrage opportunities quickly, ensuring maximum profitability.
2. **DeFi Portfolio Management**
   Investors can monitor and evaluate token pairs entering the market, adjusting portfolios based on safety insights.
3. **Security Auditing**
   Developers and analysts can assess the security of new pools, identifying potential risks before interacting with them.