Solana Watchtower: Business & Project Overview

Overview

Solana Watchtower is an open-source monitoring and alerting solution for programs deployed on the Solana blockchain. It provides real-time WebSocket monitoring, custom security rules, performance metrics, and notifications over email or chat services.

Key Features

Real-time Monitoring using WebSocket and Geyser plugin integration

Custom Rule Engine with built-in security rules and support for custom rules

Multi-channel Alerts via Email (SMTP), Telegram, Slack, and Discord

Performance Metrics with Prometheus integration

Intelligent Rate Limiting and alert batching

Web Dashboard for real-time monitoring and alert management

Modular architecture with extensible crates

Production-ready error handling and configuration validation

Quick Start

Clone the repository and build:

bash

git clone https://github.com/hasip-timurtas/solana-watchtower.git

cd solana-watchtower

cargo build --release

Copy and edit configuration:

bash

cp configs/watchtower.toml ./my-watchtower.toml

nano my-watchtower.toml

Start monitoring:

bash

```
watchtower start --config ./my-watchtower.toml
```

Command Line Highlights

watchtower start: run monitoring with optional dashboard and metrics ports

watchtower test-notifications: verify email and chat integrations

watchtower validate-config: check configuration syntax

watchtower rules: list, inspect, or test built-in rules

Docker Deployment

The docker/ folder provides a compose setup for production deployment.

Steps include copying docker/env.example to .env, configuring RPC URLs and notification credentials, then running docker-compose -f docker/docker-compose.yml up -d.

Architecture

Watchtower consists of several Rust crates:

- **subscriber**: receives events from Solana WebSockets

- **engine**: evaluates events against rule sets

- **notifier**: sends alerts to configured channels

- **dashboard**: serves a web interface and exposes Prometheus metrics

- **cli**: command-line entry point for starting and managing the system

Business Perspective

Solana Watchtower helps teams operating on Solana maintain visibility and react quickly to potential issues such as security threats, large transactions, or liquidity events. By integrating with common notification channels and providing a user-friendly dashboard, it aims to reduce operational risk and downtime. The tool is released under the MIT license, encouraging community contributions and integration into broader security strategies.