OpenZeppelin

Automating Smart Contract Workflows

using OpenZeppelin Defender

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OpenZeppelin

Our mission is to protect the open economy

OpenZeppelin is a software company that provides **security audits** and **products** for decentralized systems.

Projects from any size -from new startups to established organizations- trust OpenZeppelin to build, inspect and connect to the open economy.

Security, Reliability and Risk Management

OpenZeppelin provides a complete suite of **security and reliability products** to build, manage, and inspect all aspects of software development and operations for Ethereum projects.
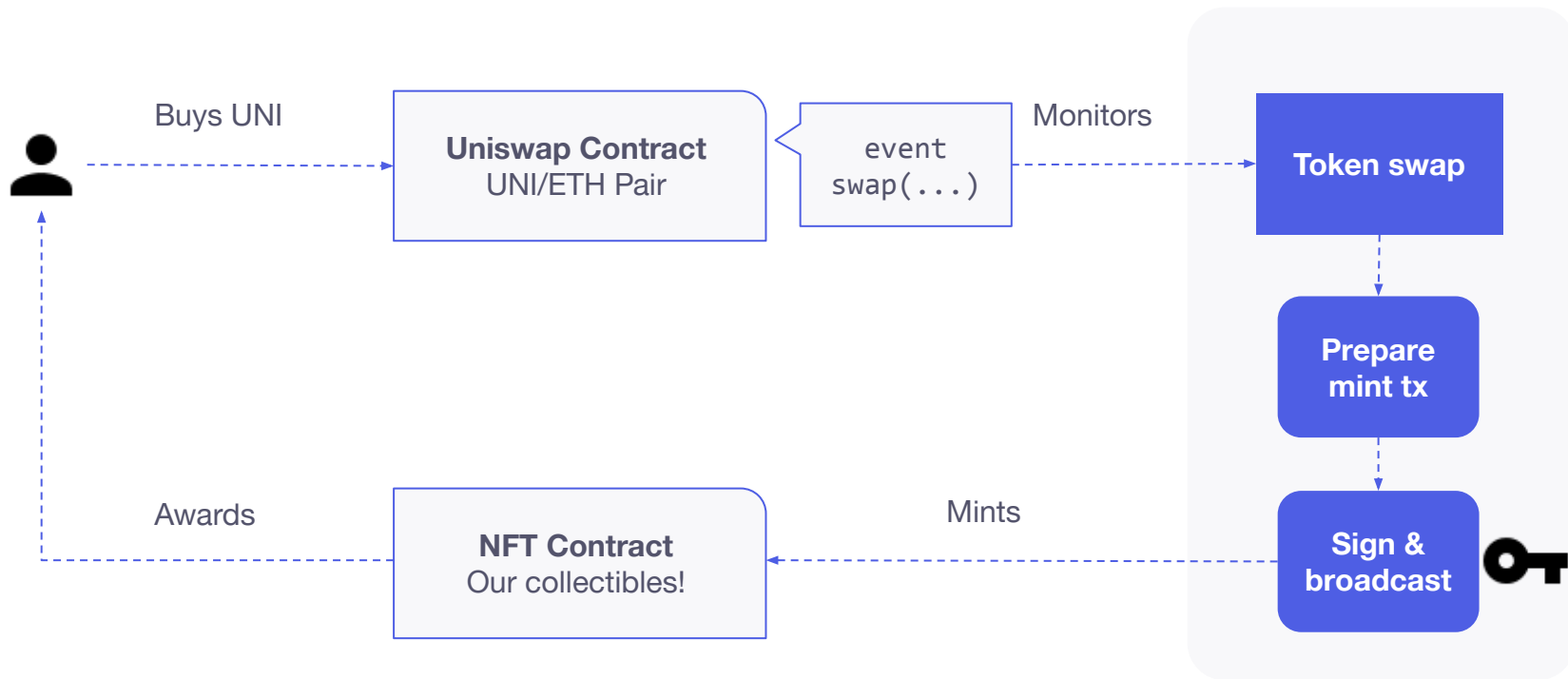
Contracts

2+ million downloads

Build

Security and Reliability

Inspect

Manage

Audits

150+ audits

Defender

Smart Contract operations are hard to get right

Monitoring, sending txs, automation, administration, etc

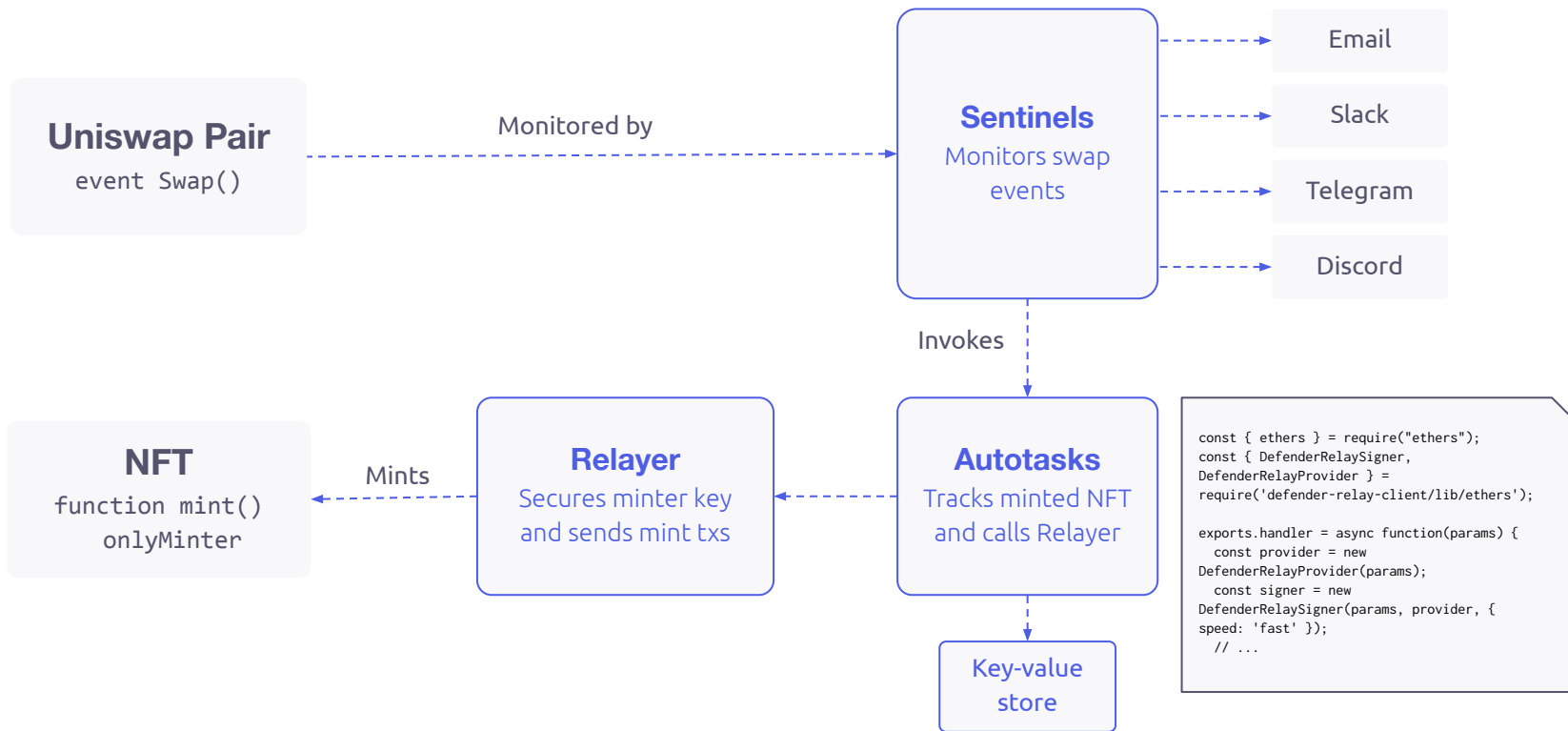**Mint** a collectible whenever a user purchases a token in a decentralized exchange

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Case Study

Buys UNI

Uniswap Contract
UNI/ETH Pair

```
event
swap(...)
```

Monitors

Token swap

Prepare mint tx

Sign & broadcast

Mints

Awards

NFT Contract
Our collectibles!

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Agenda

- **Monitor** the Uniswap UNI/ETH pair for swaps

- **Create** and deploy an ERC721 contract

- **Set up** and secure a minter hot wallet

- **Automate** the minting of NFTs

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Recap

Uniswap Pair
event Swap()

Monitored by →

Sentinels
Monitors swap events

→ Email

→ Slack

→ Telegram

→ Discord

Invokes

NFT
function mint()
onlyMinter

← Mints

Relayer
Secures minter key and sends mint txs

←

Autotasks
Tracks minted NFT and calls Relayer

Key-value store

```
const { ethers } = require("ethers");
const { DefenderRelaySigner,
DefenderRelayProvider } =
require('defender-relay-client/lib/ethers');

exports.handler = async function(params) {
  const provider = new
DefenderRelayProvider(params);
  const signer = new
DefenderRelaySigner(params, provider, {
speed: 'fast' });
  // ...
```

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Thank you!

Learn more

openzeppelin.com/**defender**
forum.openzeppelin.com
docs.openzeppelin.com

Contact

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