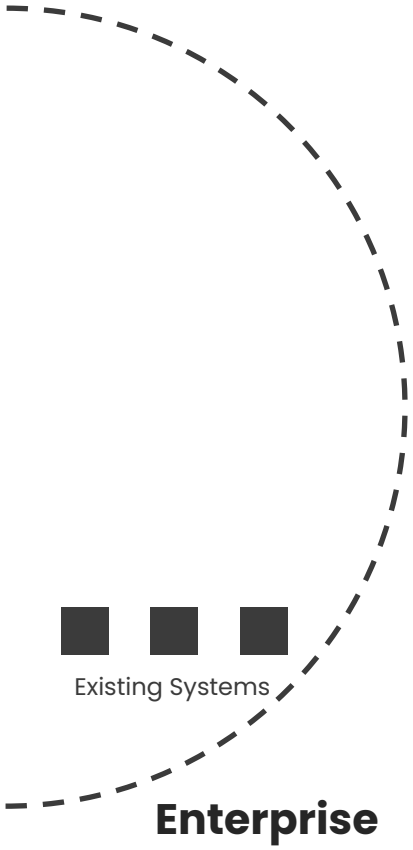
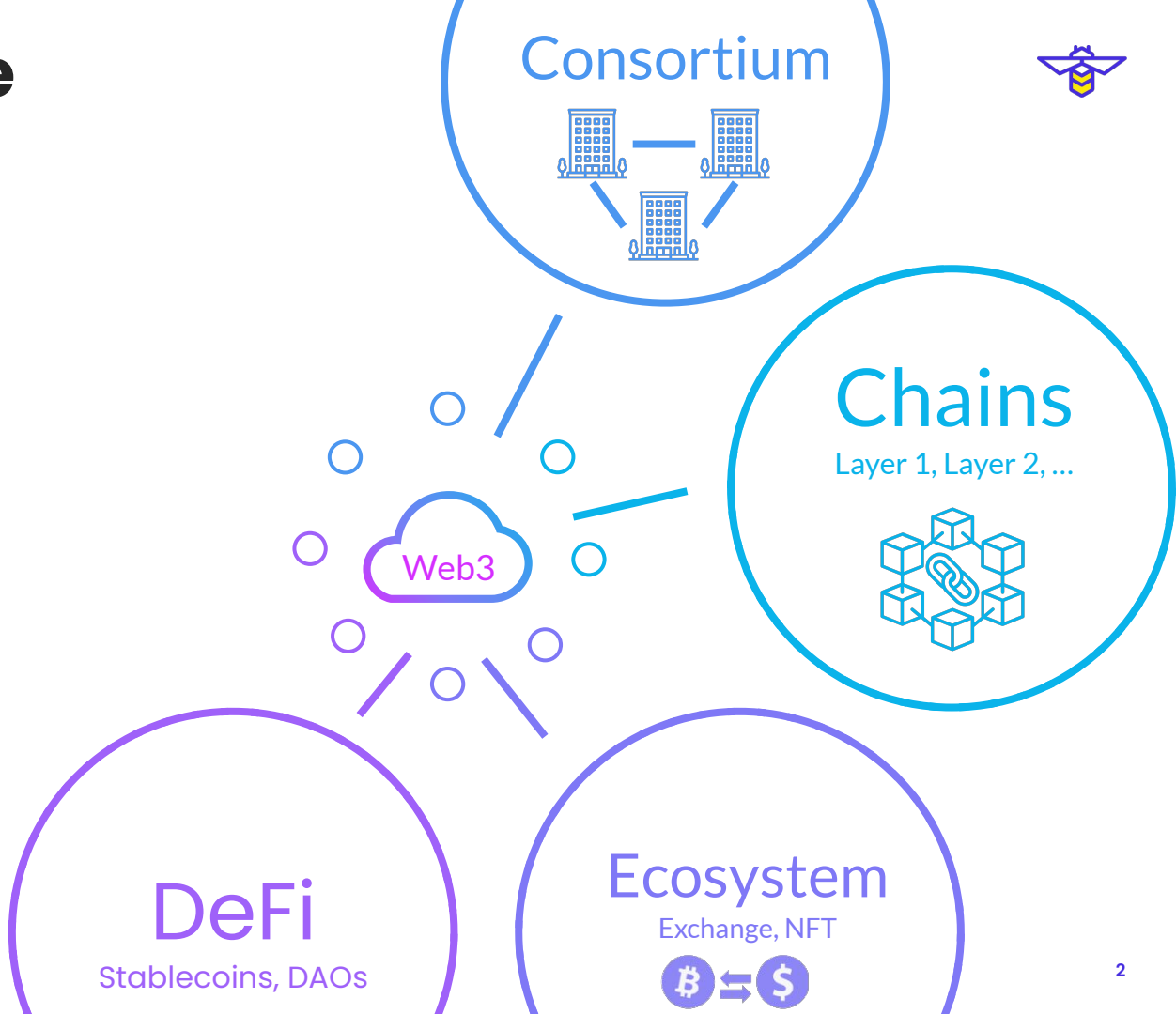
Hyperledger FireFly v1.1

Public Sector SIG Presentation

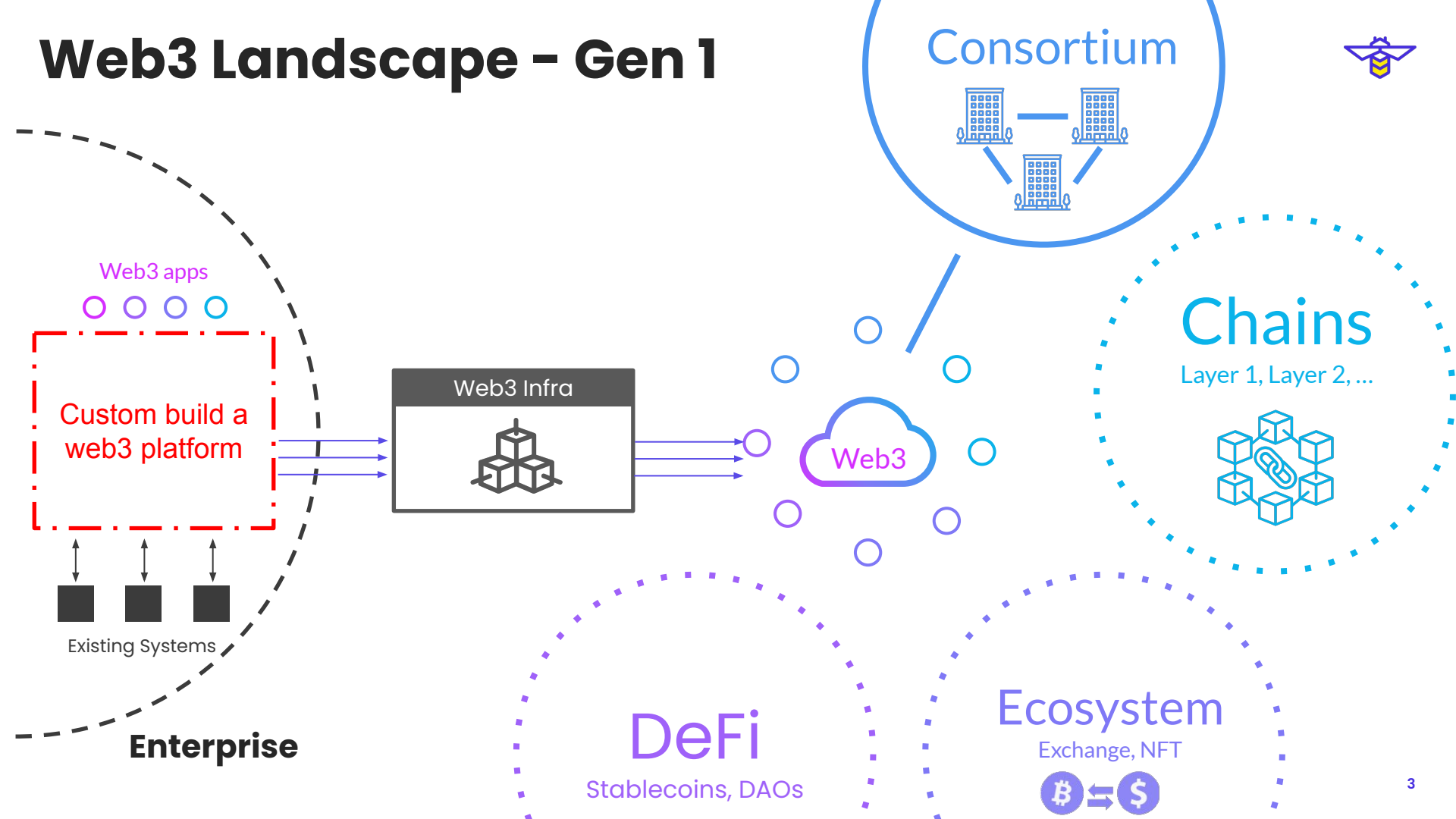
September 2022

Web3 Landscape

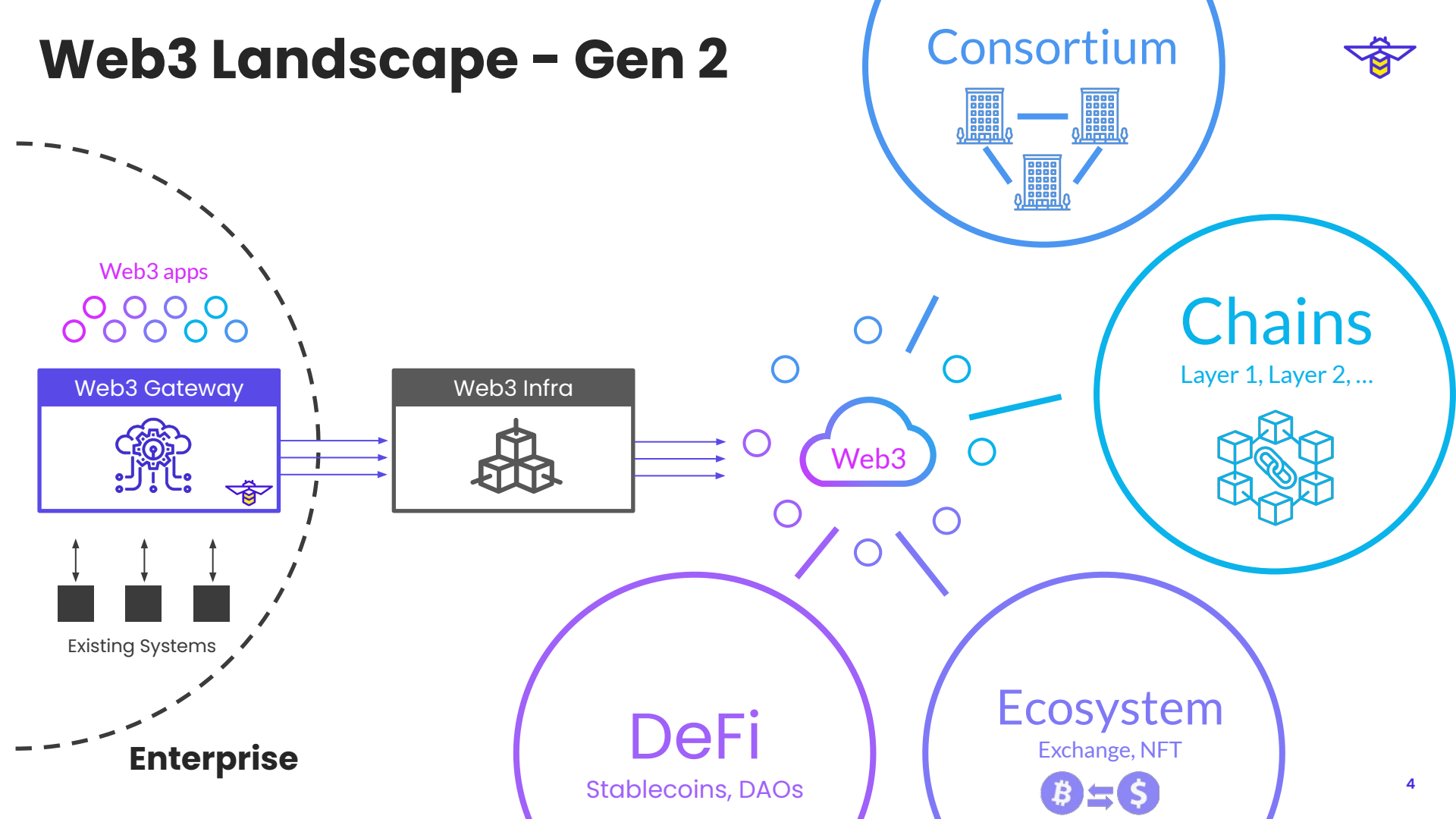




Web3 Landscape - Gen 1

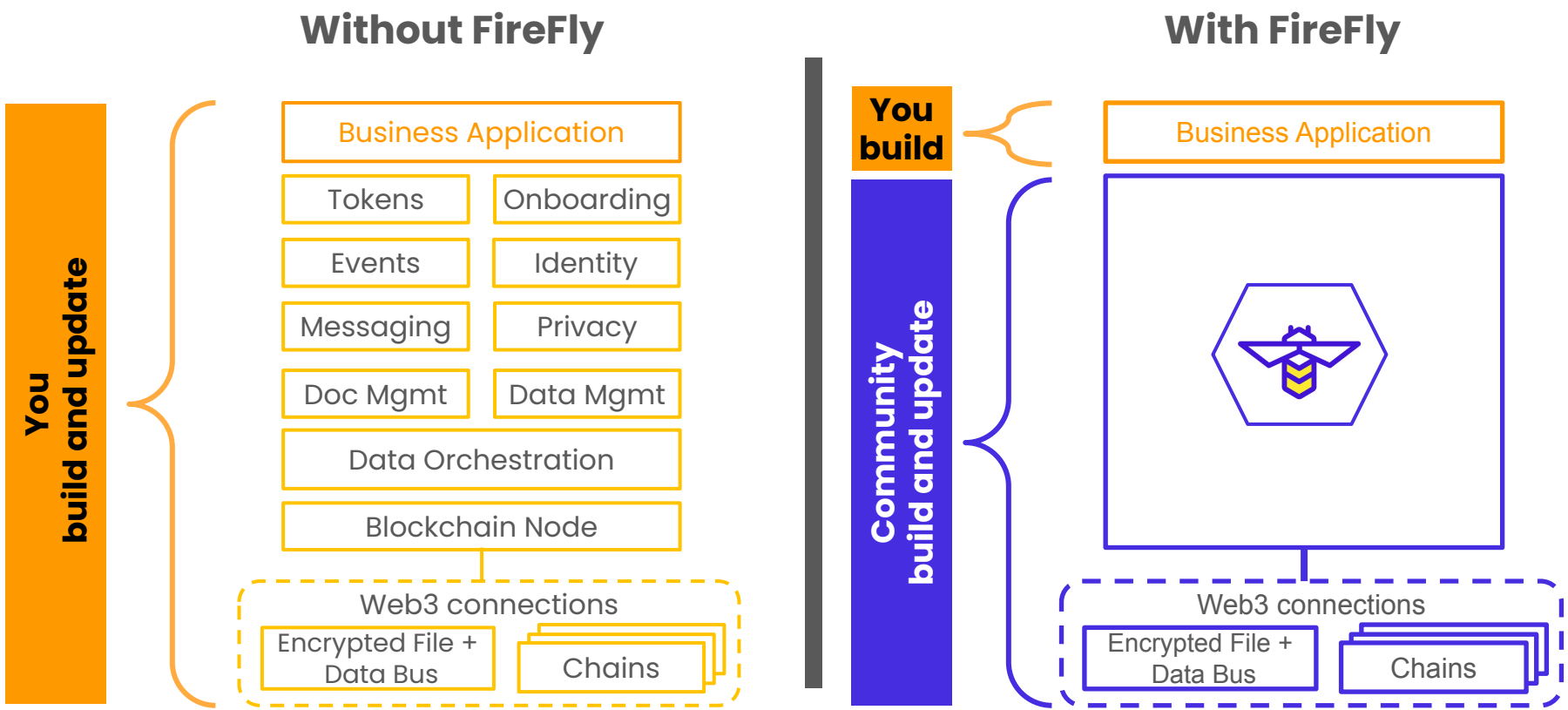


Web3 Landscape - Gen 2

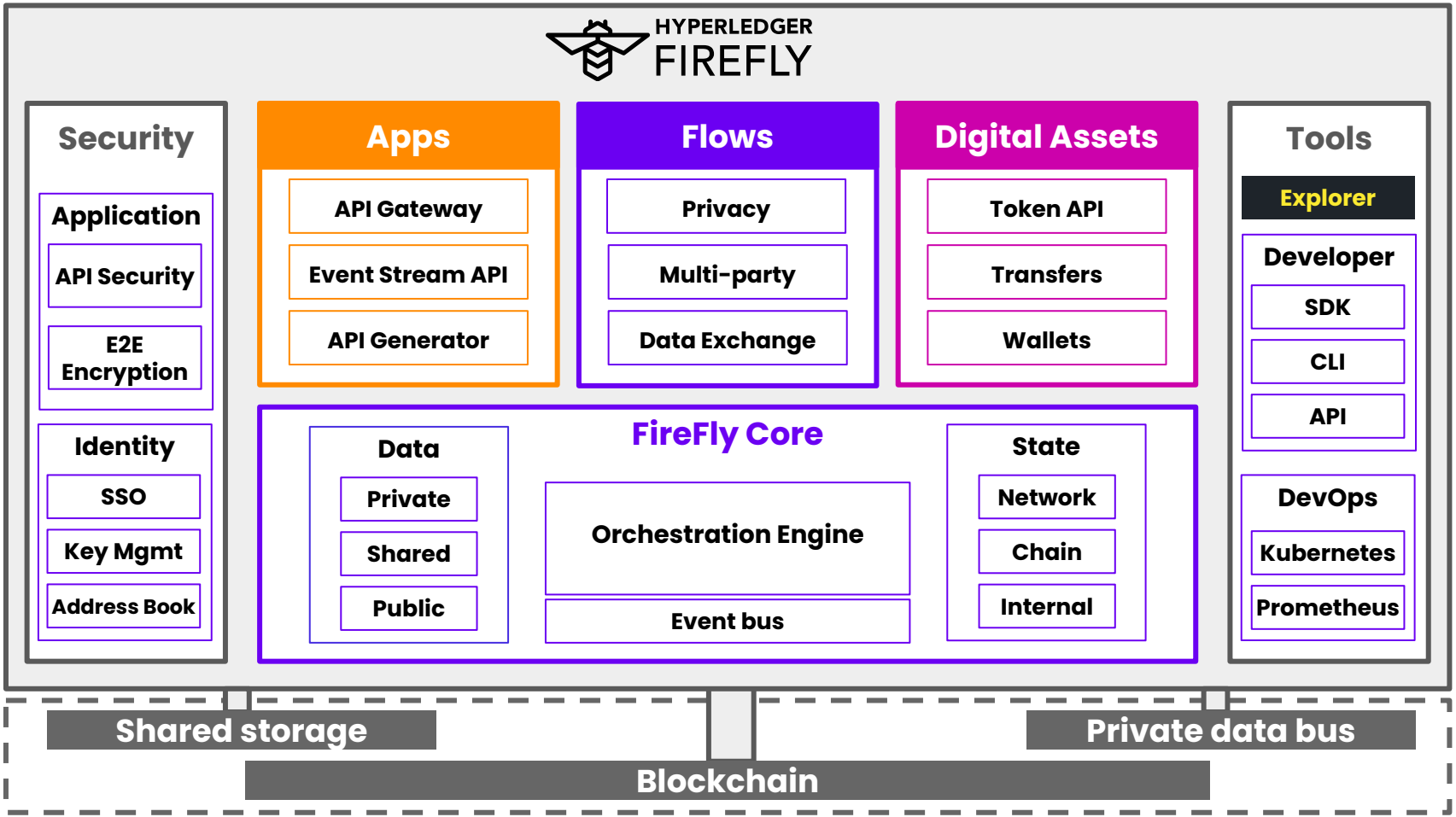


Build Web3 apps without reinventing the wheel

FireFly's gen2 approach eliminates custom code and plumbing



Hyperledger FireFly

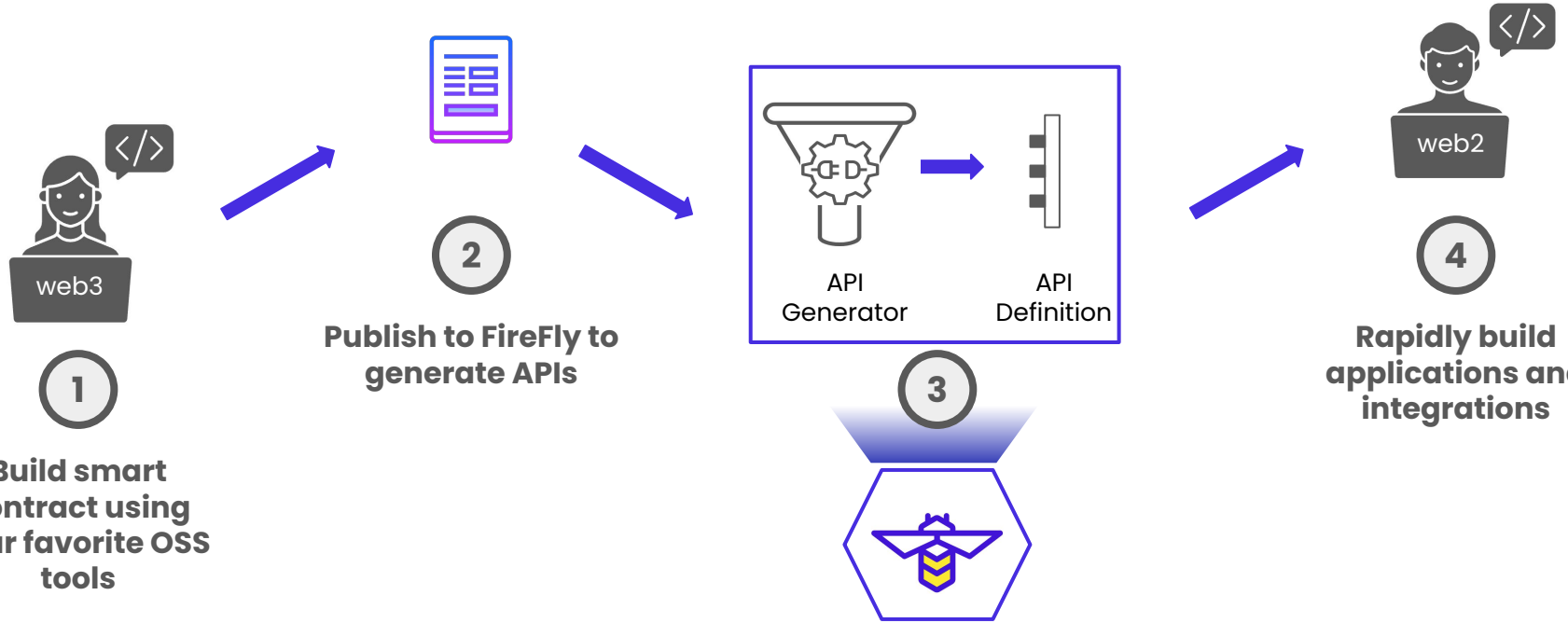


Build Web3 apps quickly

Supernode

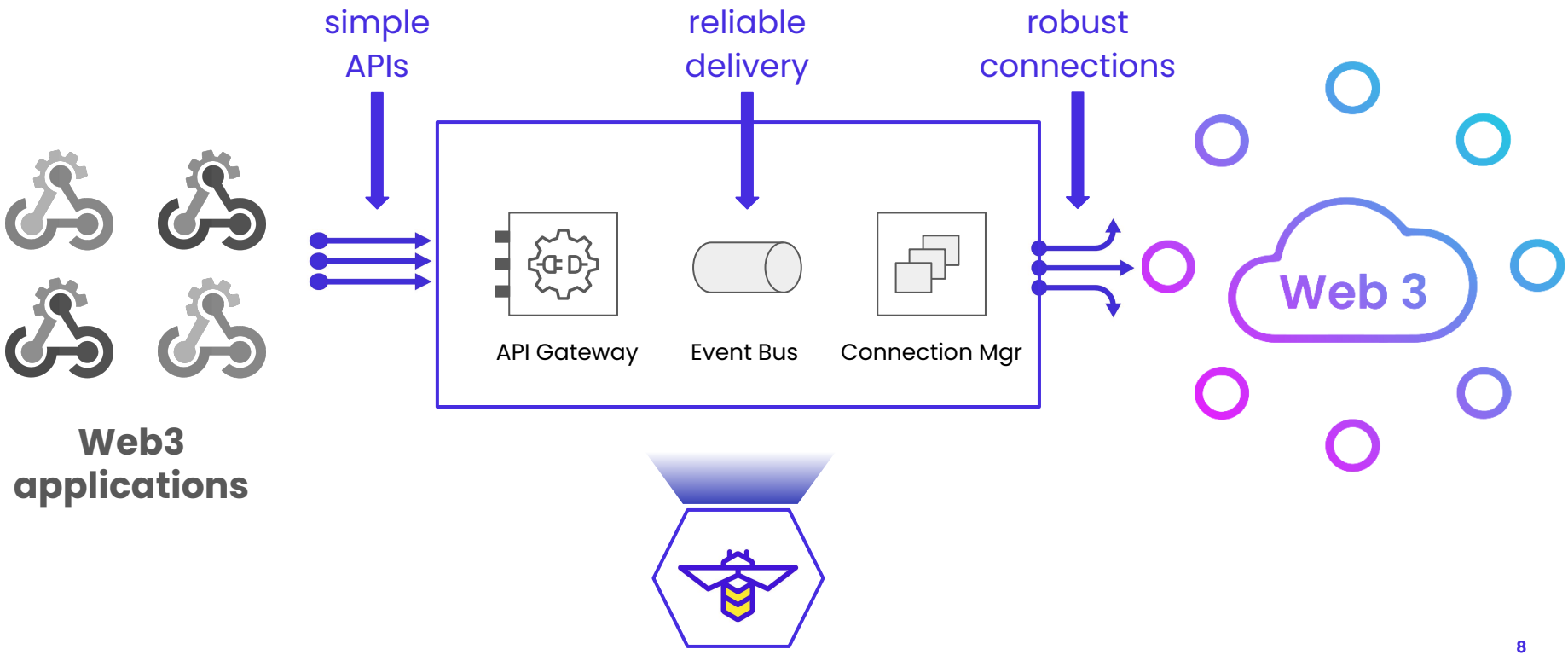
Apps

FireFly turns smart contracts into APIs



Deploy Web3 apps to production

FireFly is your gateway to Web3



Data Flows - on and off chain

FireFly has a complete stack for consortium B2B networks

Document Transfer

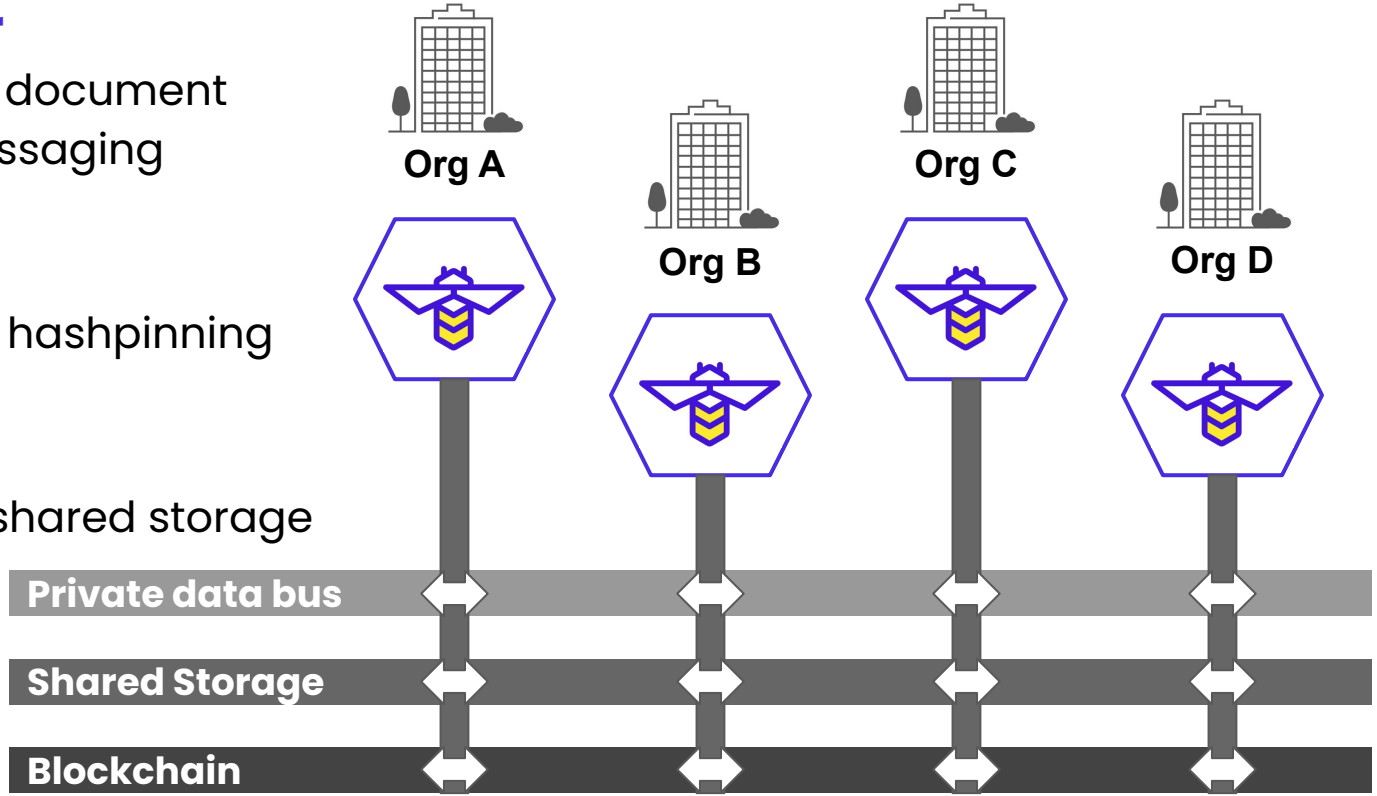
Native off-chain P2P document transfer and B2B messaging

On Chain Proofs

Automatic on-chain hashpinning

Shared storage

Native IPFS-backed shared storage



Manage digital assets at scale

Supernode

Digital Assets

FireFly can manage tokens at institutional scale

Token API

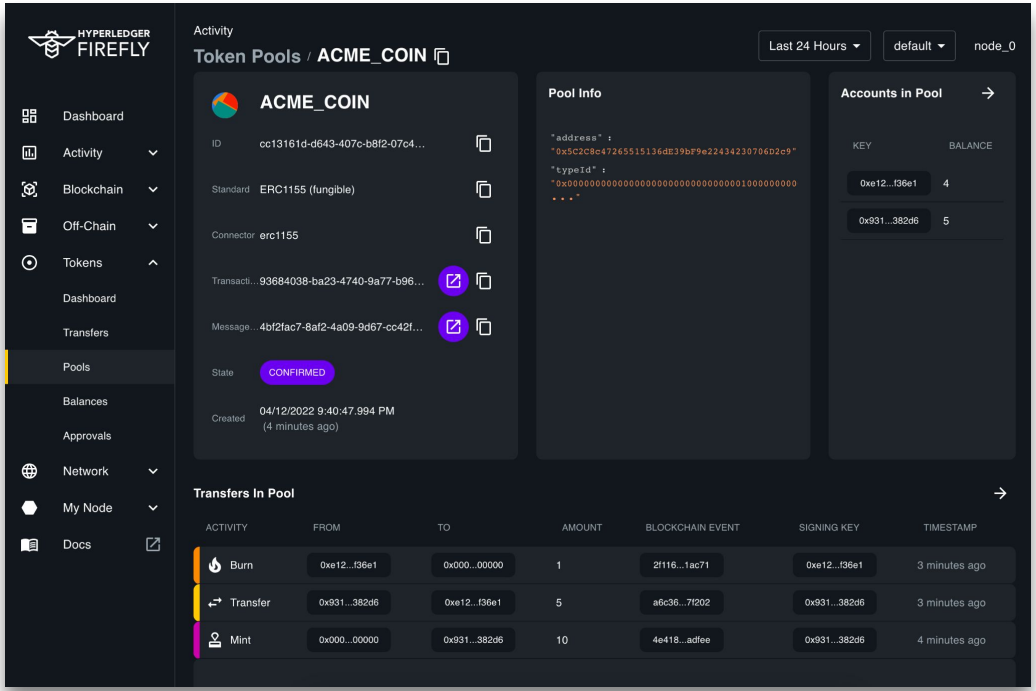
Native support for coins and NFTs
Mint, burn, transfer, check balance

Token history & audit trail

Tracks token history and lineage in a fast-query database

Simple wallet integration

Easily integrate enterprise wallets for institutional custody



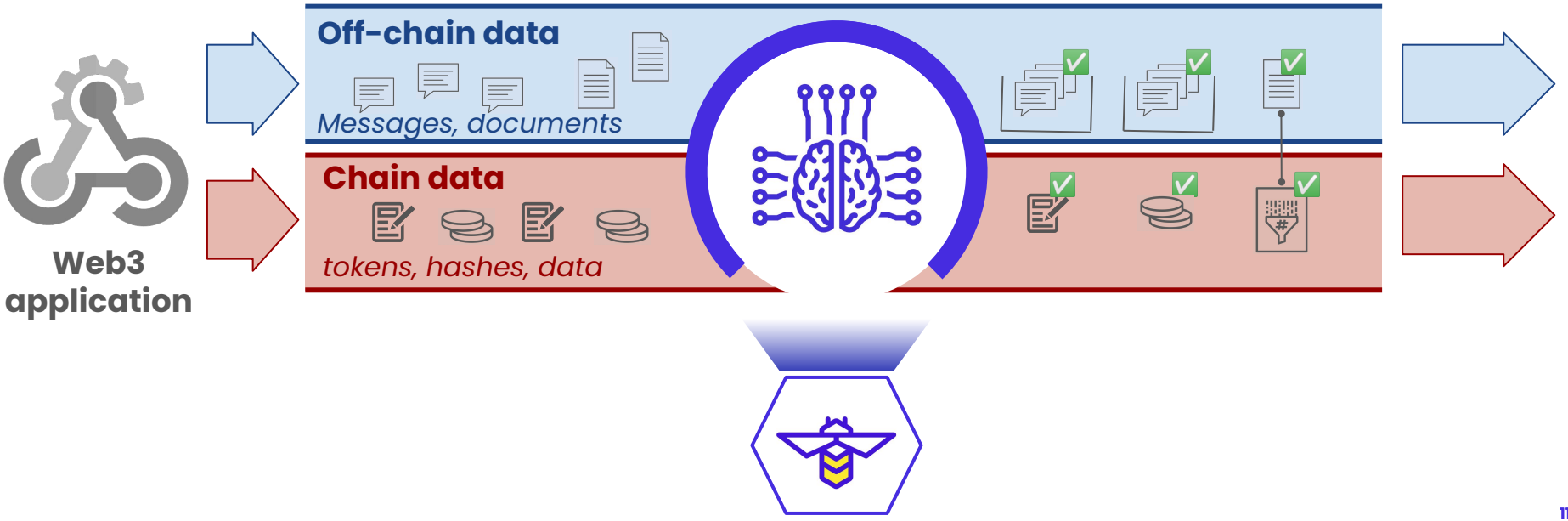
Orchestrate event-driven flows

Supernode

Core

Orchestration Engine

- ✓ Reliable delivery
- ✓ Batching
- ✓ Sequencing
- ✓ Routing
- ✓ State management
- ✓ Event correlation
- ✓ Retry
- ✓ Error Handling



Data Management on FireFly

Supernode

Core

Chain state

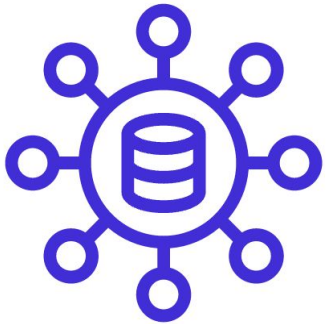
Block event index
Transaction index

Core Data Store

Structured data
Unstructured data
Data validation
Origin audit trail

Network State

Network map
Org Address Book
Chain Connection Mgmt



Digital Asset Manager

Token API
History and Audit Trail
Coin balance

Network Data

B2B data store
Shared storage
Common data formats

FireFly has a complete set of tools

Explorer

Developer

CLI

API

GET
POST
DELETE

SDK

SDK

DevOps

Logs + Metrics

Prometheus

kubernetes

kubernetes

HELM

Cloud ready + Modern Software

Runs on Kubernetes

- ✓ Use your favorite DevOps tools
- ✓ Easy for developers
- ✓ Faster to production

Cloud Ready

- ✓ Ready for public
- ✓ Roll out in your private cloud
- ✓ Hosting options available through HL vendors

Designed to scale

- ✓ microservice architecture
- ✓ Stateless design
- ✓ Achieve HA and scalability

FireFly project at a glance

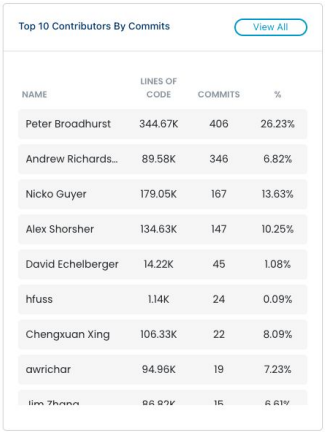
FireFly High Level Timeline

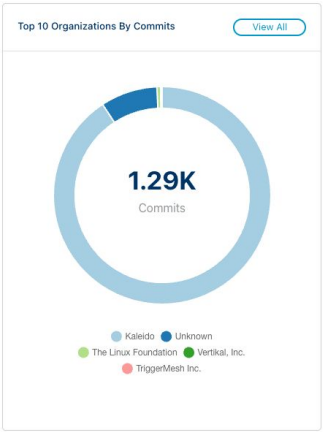
- **2015-2021**
  - Gen 1, pre-FireFly costly enterprise projects “reinventing the wheel” over and over again
- **June ‘21 - FireFly Lab launched**
  - New Hyperledger Lab
  - Initial contribution of 75k lines of code from Kaleido
- **September ‘21 - Incubation Status**
  - Moved to incubation status
- **April ‘22 - FireFly 1.0**
  - v1.0 launch - ready for production
  - Over 200k lines of code across 12 repos
- **September ‘22 - FireFly 1.1**
  - Public chain support
  - Over 1000 new commits since 1.0

v1.1 by the numbers

586k
Lines of code

19
Repos





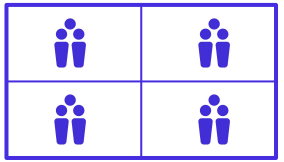
FireFly - What's New in v1.1

Gateway Mode

Connect to many chains with auto-indexing of activities

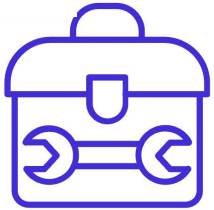
Public EVM Chain Support

EVMConnect manages complex public chain connections



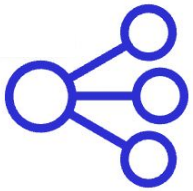
Namespaces

Multi-tenant FireFly nodes support isolated use cases



Connector Toolkit

Quickly build custom connectors



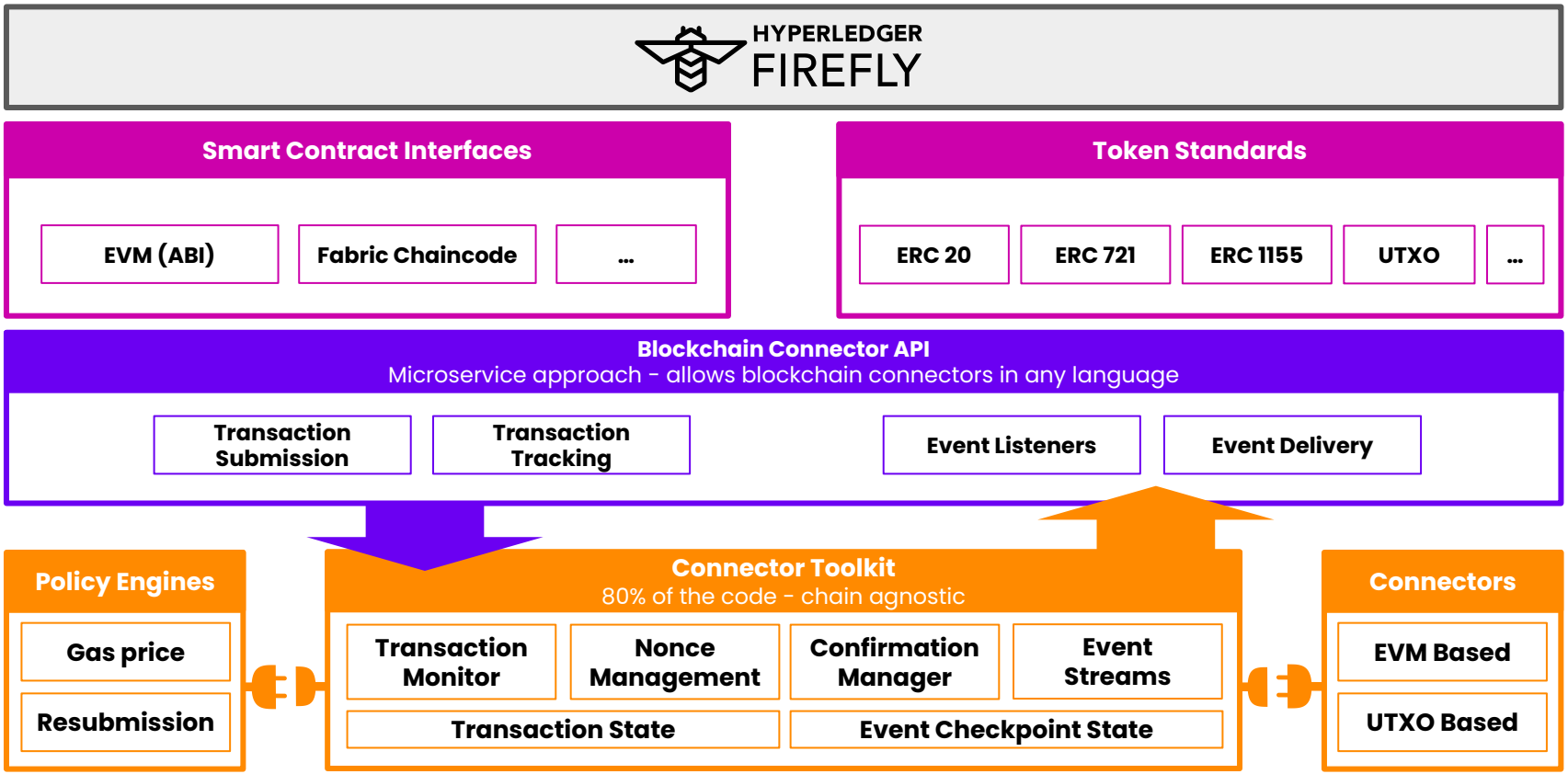
Pluggable API Security

Plug in your own API security

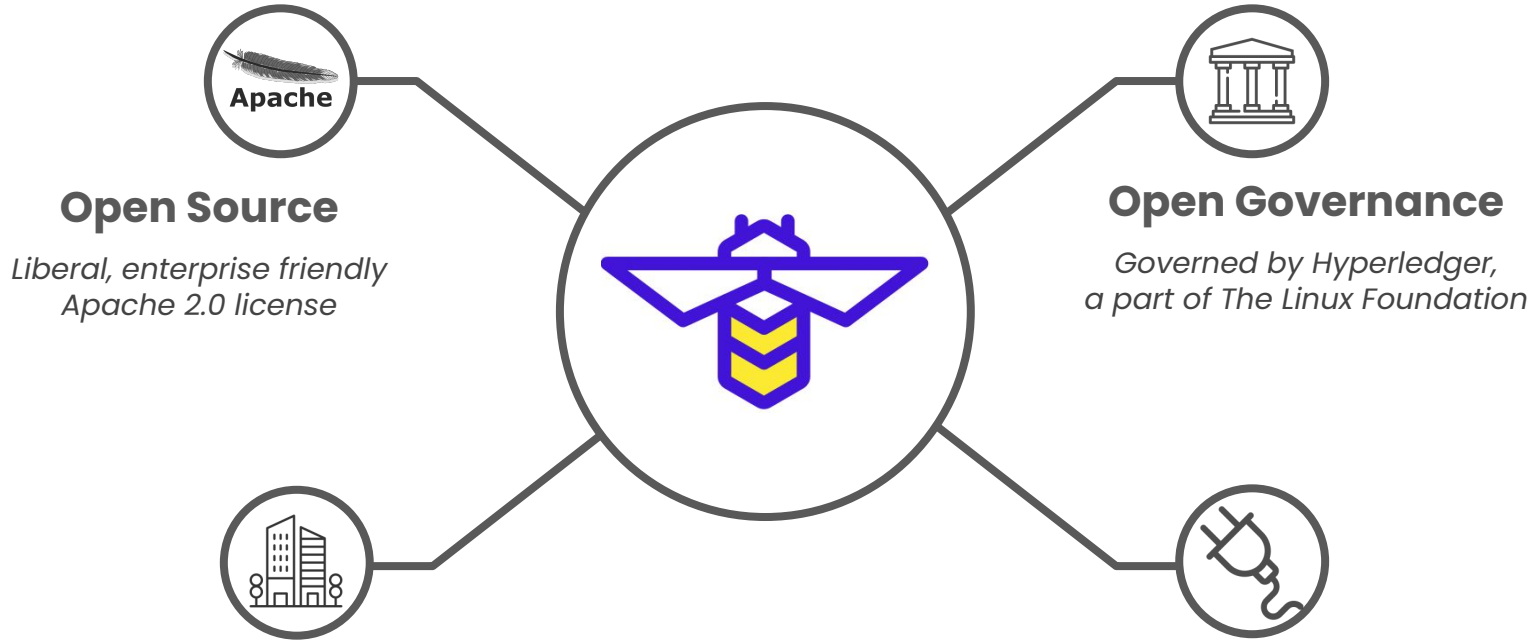
Mass Scale Tokens

Support many parallel copies of token plugins for mass scale

FireFly Blockchain Connector Framework



Enterprise Ready Open Source



Open Source

Liberal, enterprise friendly Apache 2.0 license

Open Governance

Governed by Hyperledger, a part of The Linux Foundation

Enterprise Grade

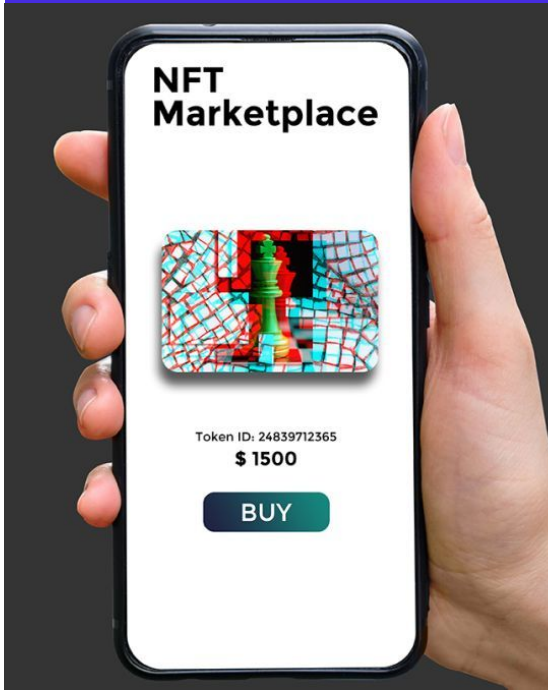
Modern, cloud ready software, scalable, resilient

Highly Extensible

Highly pluggable framework future-proofs the engine and enables rapid technology evolution (zkp, blockchain, TEEs, etc.)

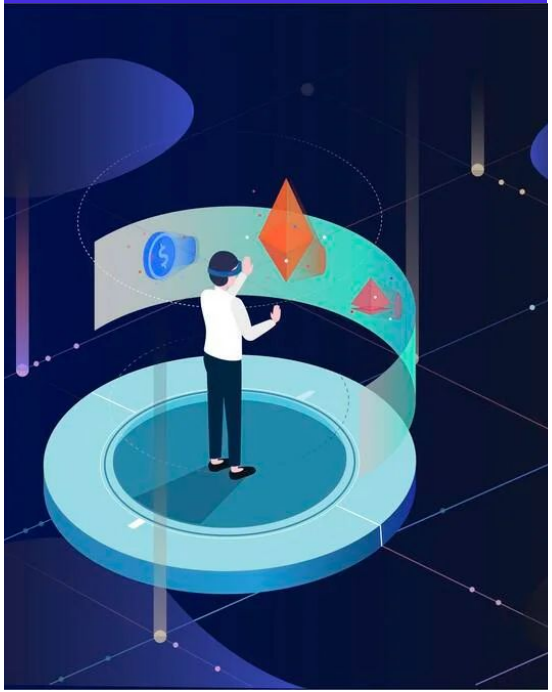
What will you do with FireFly?

Offer new Digital Experiences

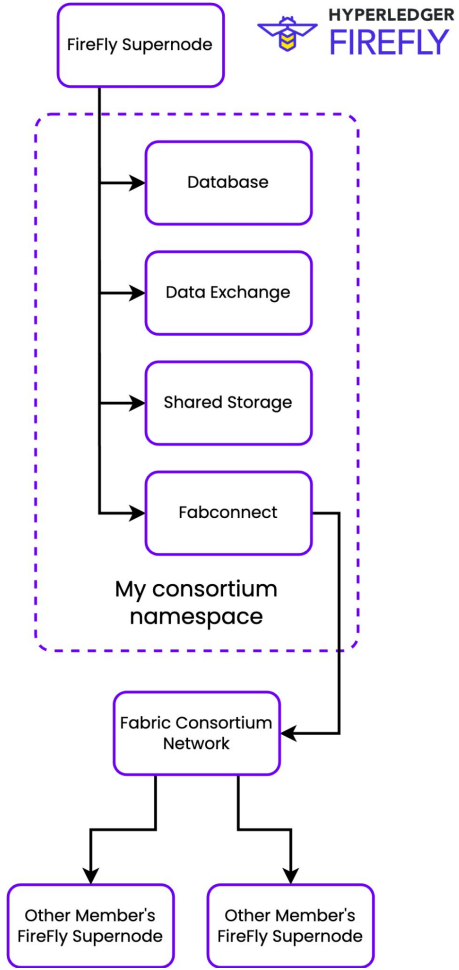


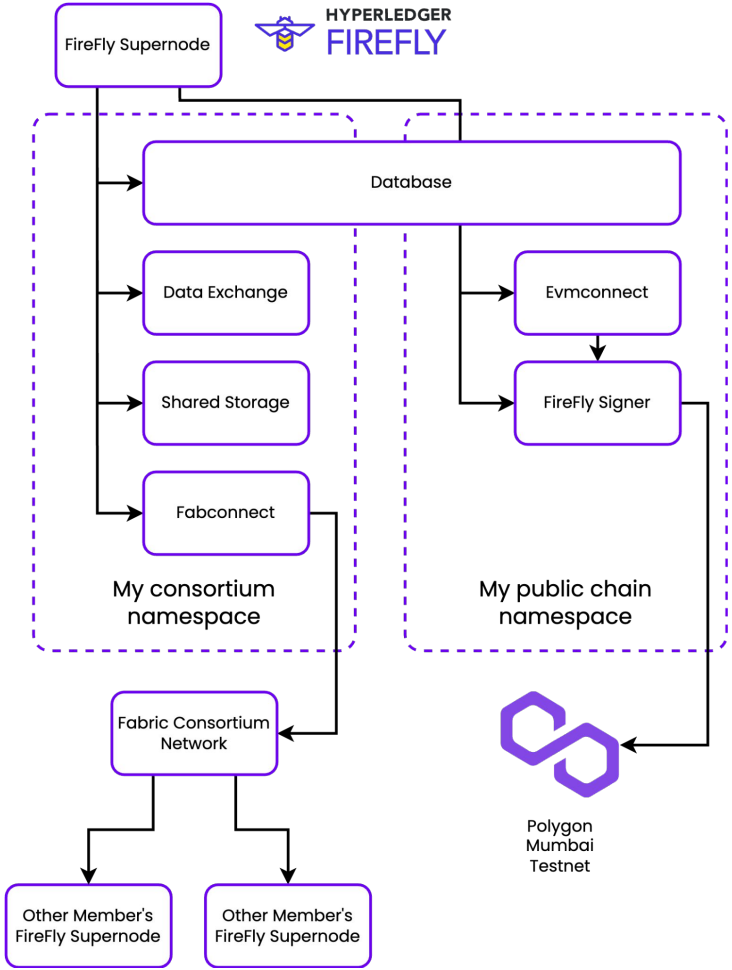
Modernize legacy B2B data flows

Find new business opportunities



Developer Experience
+
Live Demo


FireFly Supernode
HYPERLEDGER
FIREFLY
Database
Data Exchange
Shared Storage
Fabconnect
My consortium
namespace
Fabric Consortium
Network
Other Member's
FireFly Supernode
Other Member's
FireFly Supernode

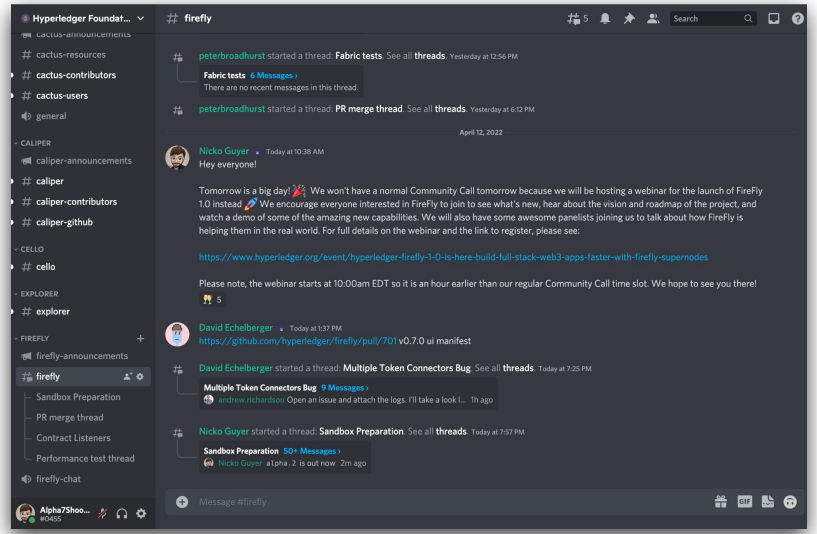

FireFly Supernode
HYPERLEDGER
FIREFLY
Database
Data Exchange
Shared Storage
Fabconnect
Evmconnect
FireFly Signer
My consortium namespace
My public chain namespace
Fabric Consortium Network
Polygon Mumbai Testnet
Other Member's FireFly Supernode
Other Member's FireFly Supernode

Join the FireFly Community

All are welcome!

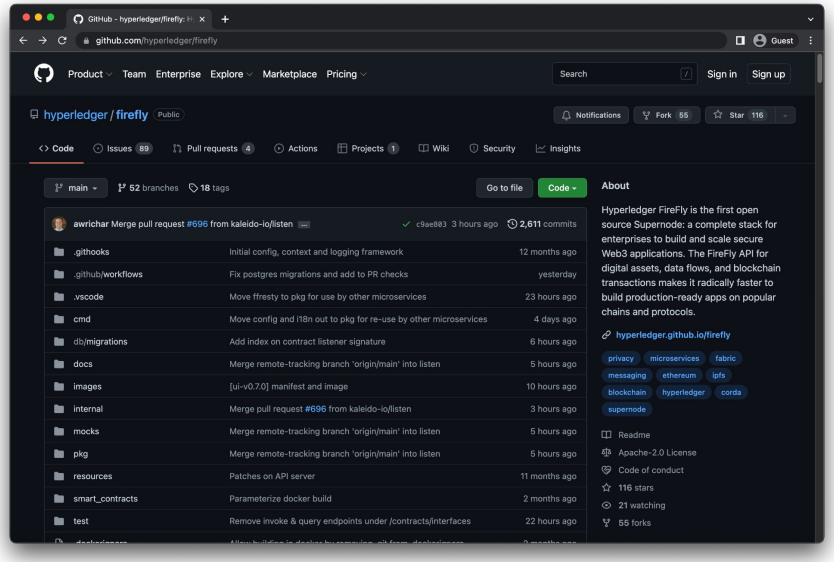
Join the conversation on Discord

https://discord.gg/Fy7MJuqw86



Join the activity on GitHub

https://github.com/hyperledger/firefly



THANK YOU