



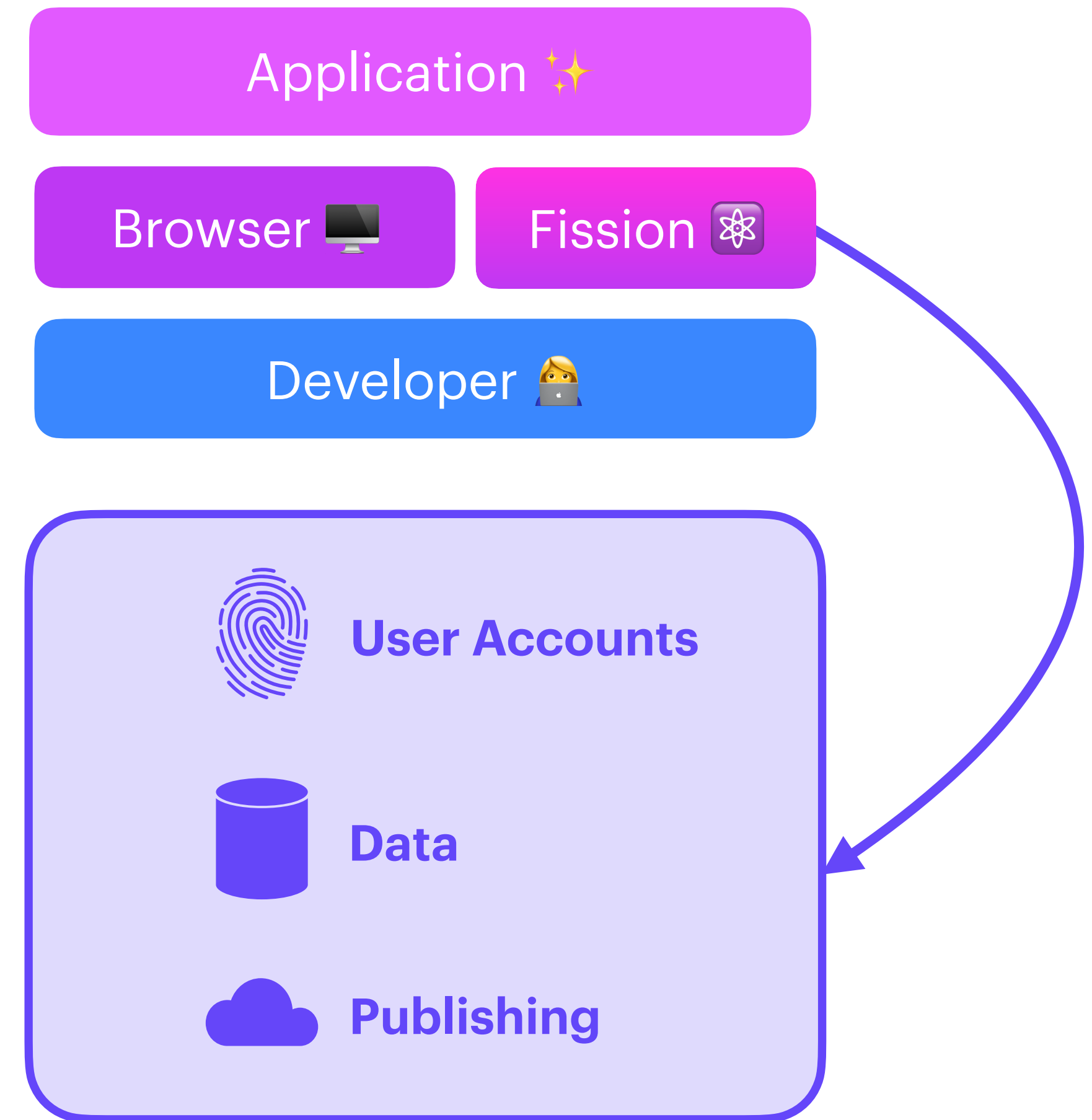
**FISSION EDGE IDENTITY & DATA
OVERVIEW FOR WEB3 PROJECTS**

April 2021



WHAT IS FISSION?

- Fission is building a client side edge stack with identity & auth, user owned data, and a distributed file system on top of IPFS
- Standardize and integrate "hard" things like privacy, security, sync & more
- Individuals and teams can focus on full featured apps that act like desktop or mobile, including offline





APP PUBLISHING PLATFORM

- We've built our App Publishing Platform to showcase how things can be built in an integrated way
 - Sign up on the web, publish directly
 - Use the CLI, build locally, or Github Action to Publish
 - Subdomain, SSL, custom domains
 - Every account has their own personal domain links, eg. <https://boris20210213.files.fission.name/p>



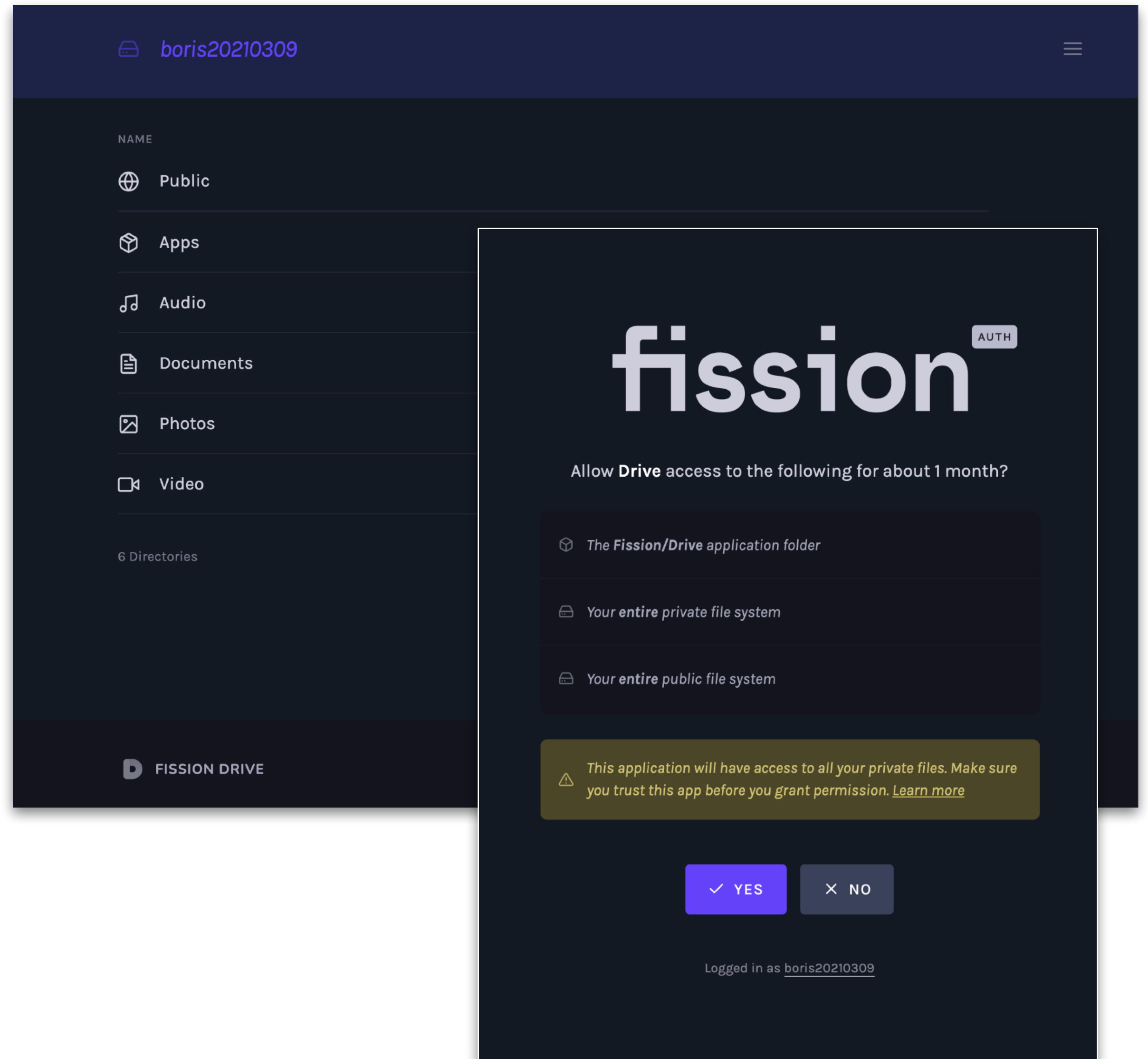
FISSION: EDGE IDENTITY & DATA

- Some of the features included in the Webnative SDK:
 - Accounts: linked to browsers and desktops, based on a private key DID
 - Password-less Login: in any browser, including mobile. Securely link devices.
 - End-to-end Encryption: WNFS is encrypted & obscures file metadata
 - Versioning: WNFS has automatic versioning built in
 - Public file sharing: share links to IPFS CIDs, or use personal domain links
- All this on top of read/write to IPFS natively in the browser



FISSION DRIVE

- Default WNFS file browser
- Users can view App Data
- Encrypted by default, public folder is available unencrypted with direct IPFS links
- Works offline
- <https://drive.fission.codes>

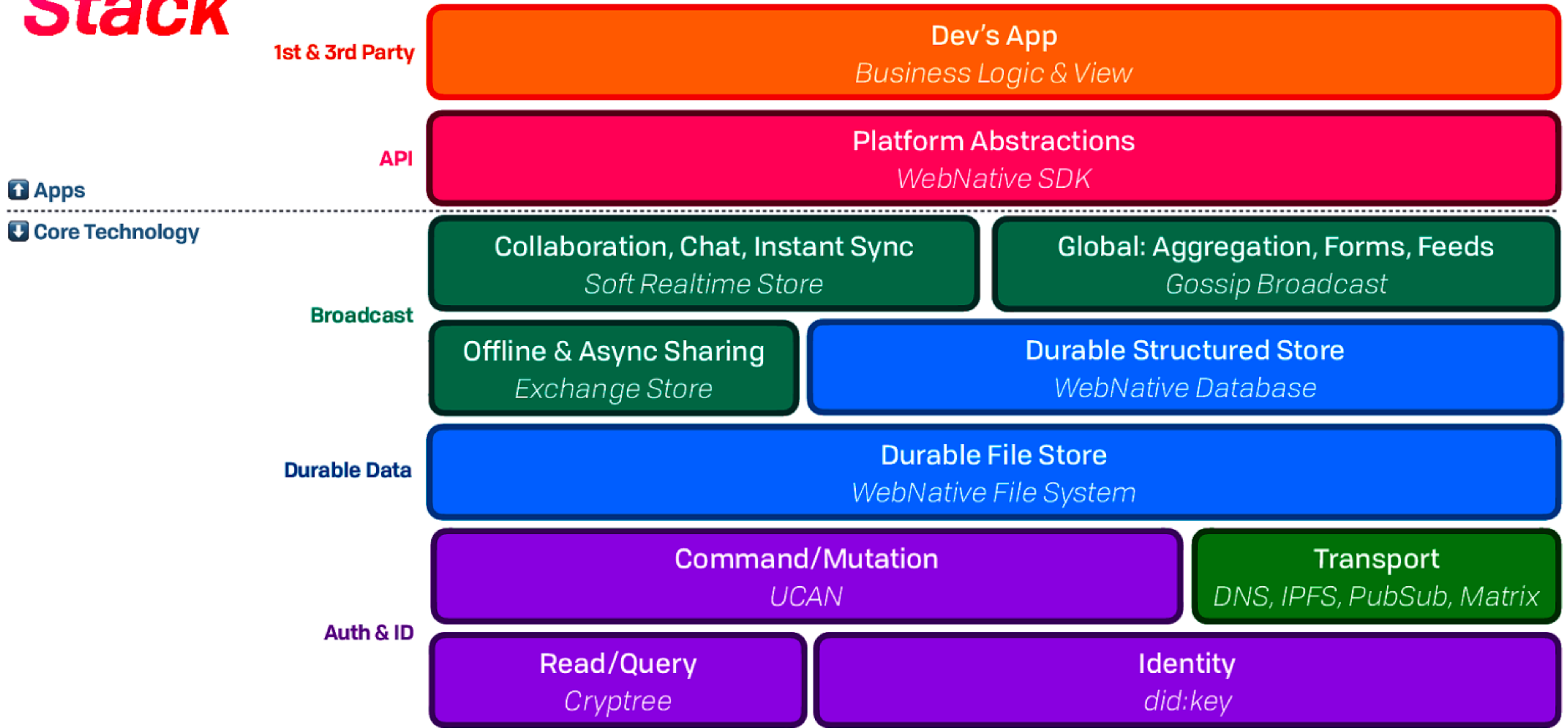




FISSION CLI FOR LOCAL DEV

- `fission setup` — CLI downloads and installs IPFS, registers a user account with private keys
- `fission app register` — create a new app with subdomain
- `fission app publish` — publish the app natively, over IPFS
 - Add to IPFS locally, then contact fission server to register new hash, update DNSLink
 - Fission server fetches from local node

WebNative 
Stack



TECH BUILDING BLOCKS

- **IPFS:** a global “commons network” that anyone can participate in to share data and apps. Content addressing is awesome!
- **Browser APIs:** WebCrypto, PWAs and other browser features integrated in our SDKs so they are easy for developers to use and integrate into their apps
- **Decentralized Identifiers (DIDs):** portable accounts that can be user owned, plus Verifiable Credentials for data linked to accounts

WEBNATIVE STANDARDS

- As well as adopting open standards, we are pioneering three specs of our own:
 - **UCAN:** a decentralized authentication specification built on top of DIDs; edge-first auth, works offline, can be delegated using OCAP
 - **WNFS:** our Web Native File System, public + private/encrypted, built on top of IPFS
 - **WNDB:** adding full database capabilities to WNFS; the most important data at scale lives in databases



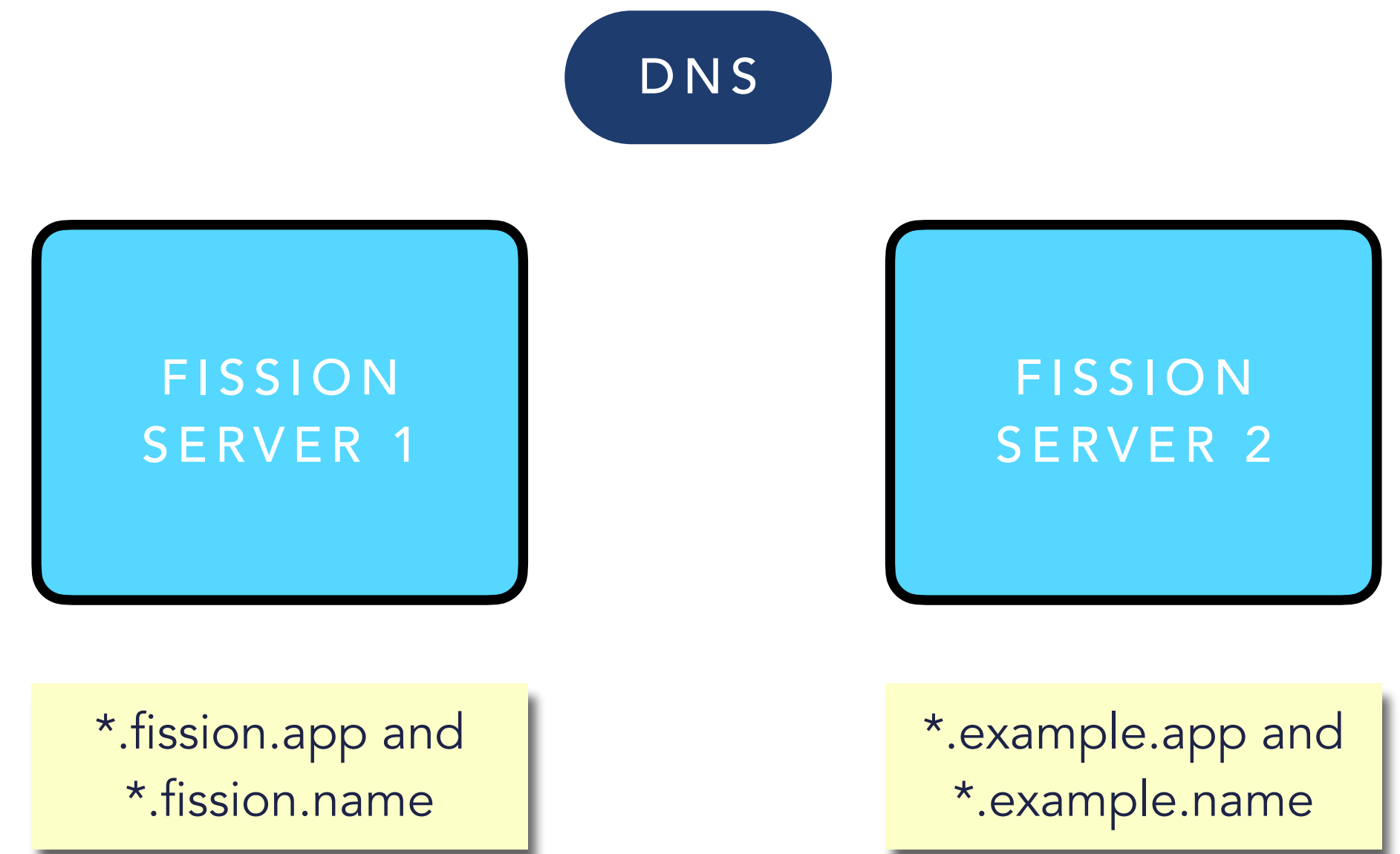
PRIVATE KEYS IN THE BROWSER

- As part of an initial grant from Protocol Labs and Filecoin, we have developed an extension to webnative that allows for secure, non-custodial storage of private keys in browser, without plugins, including on mobile
- It uses BLS for signature aggregation and a co-signer model
- Keys can be generated on the fly in browser for new users, with instant onboarding
- Available now for Filecoin keys, Ethereum keys are next on the roadmap



CONSTELLATION: DEV STACK IN A BOX

- Constellation Provider not a Cloud Provider
- We run a Fission instance with *.fission.app and *.fission.name and integrate everything for many smaller developers; focused on mass market front end developers
- Communities or Organizations can run their own Fission Constellation, choose and customize their own domain names and features
- Federate between them — Webfinger
- Fission hosts / white labels, as well as collaborates with larger peers on improving the open source stack





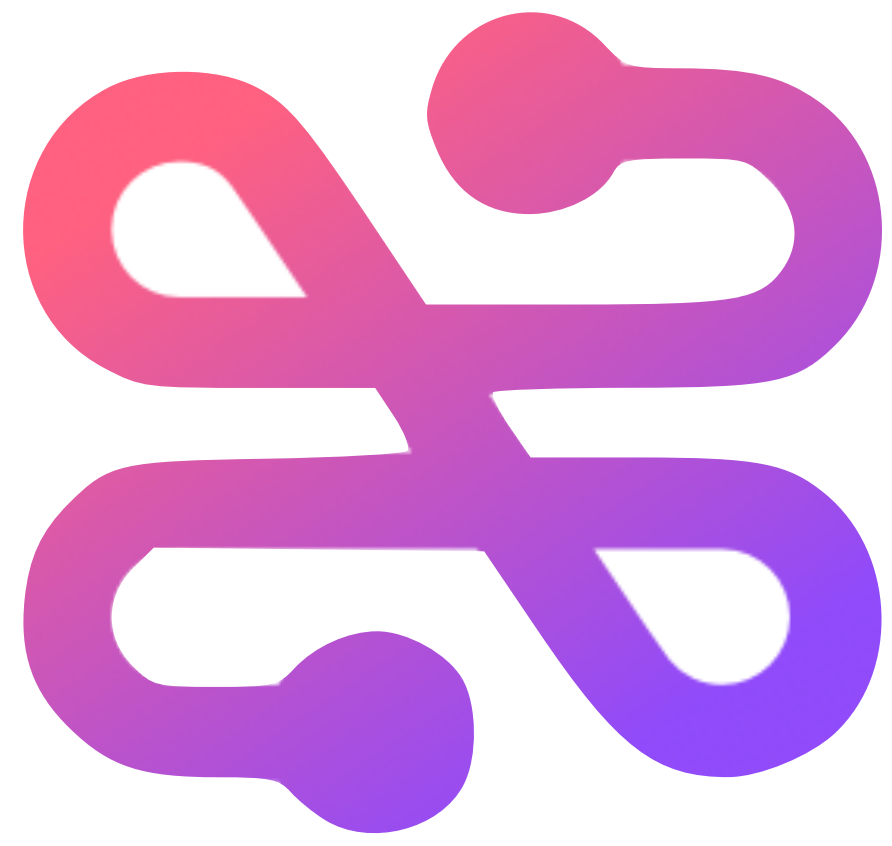
BLOCKCHAIN USE CASES

- Instant onboarding with private keys in the browser
- Improve user experience with encrypted storage and accounts, without running centralized servers
- Run multiple dapps that all work together



HOW TO WORK WITH FISSION

- **Live today!** Go to <https://guide.fission.codes>, install the CLI and start building an app, or visit <https://drive.fission.codes> to create a Fission account and try out Fission Drive
- **Book an engineering briefing for your team:** we want you to succeed building with Fission, our Developer Success team is here to support you in shipping apps
- **Feature acceleration:** see a feature on the roadmap you'd like to have access to sooner? Have a particular integration in mind? Get in touch about scoping a project.
- **Run a Fission Constellation:** talk to us about running our app publishing platform as a turn key developer experience for your protocol or community



fission

THANK YOU!

Github: [fission-suite](https://github.com/fission-suite)

Developer Guide & Docs:
guide.fission.codes

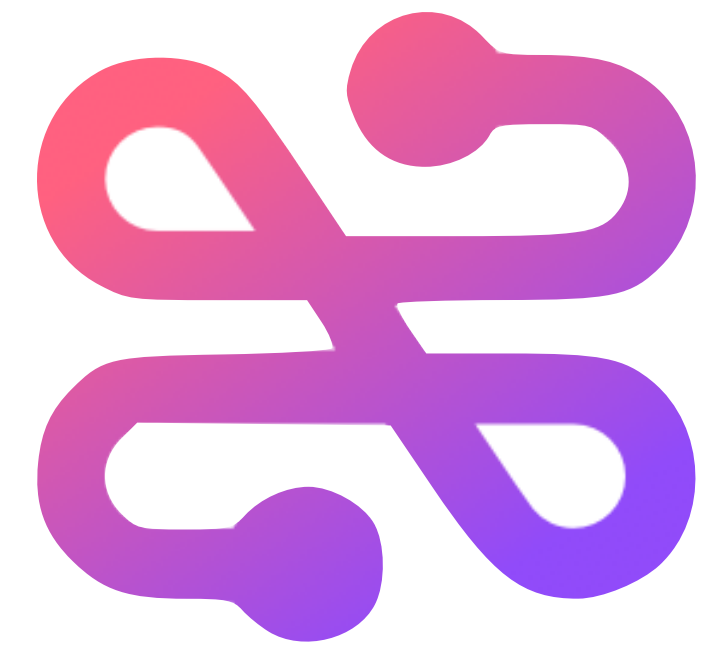
Technical Whitepaper:
whitepaper.fission.codes 🚧 🧑‍🔧 ✍️

Home page: fission.codes

Discourse forum: talk.fission.codes

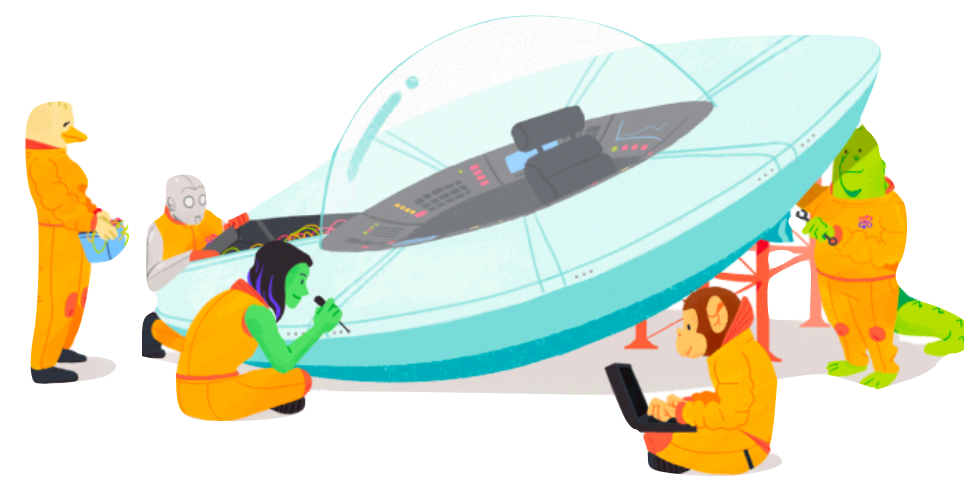
Discord chat: fission.codes/discord

Twitter: [@fissioncodes](https://twitter.com/fissioncodes)



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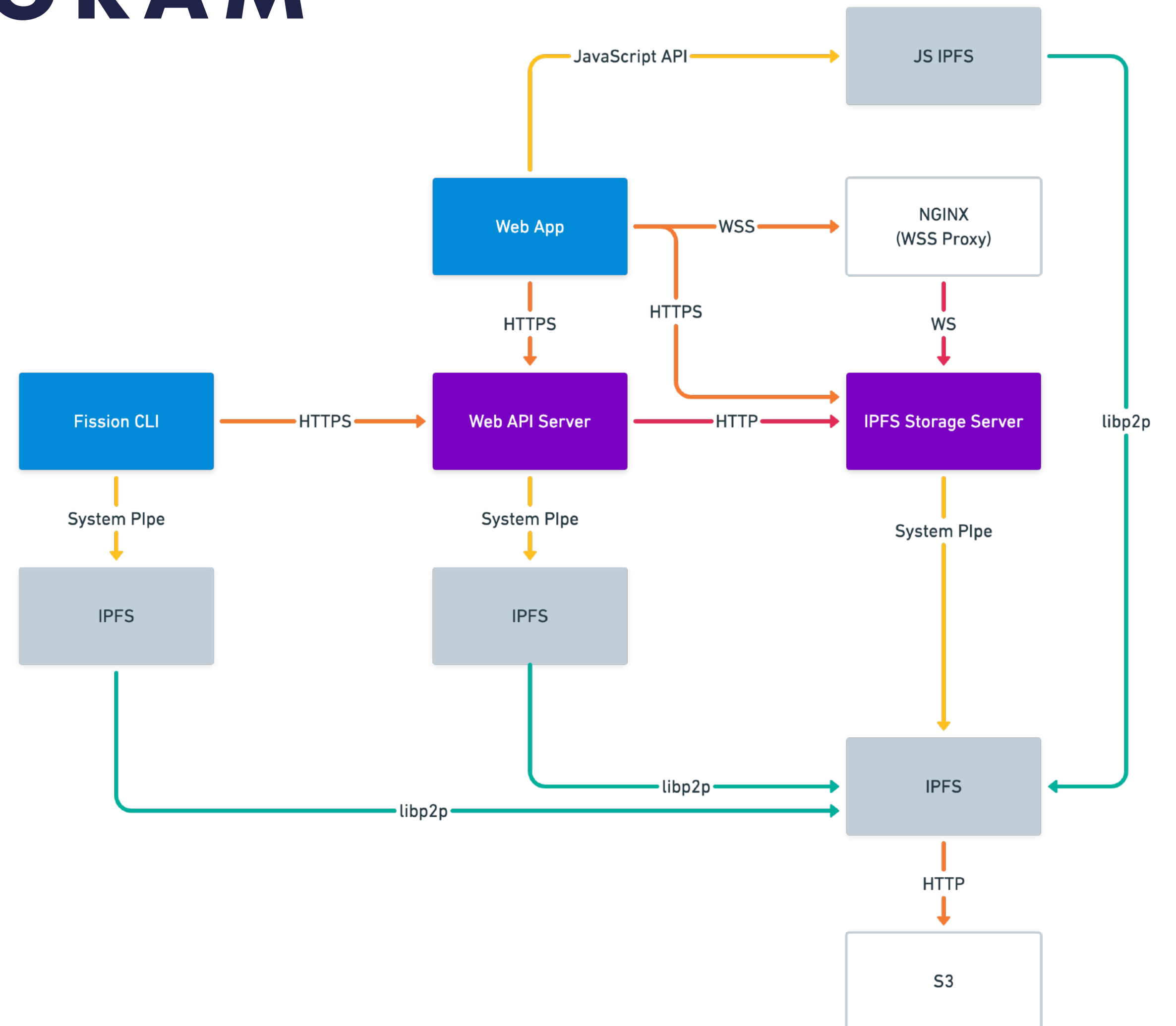
APPENDIX



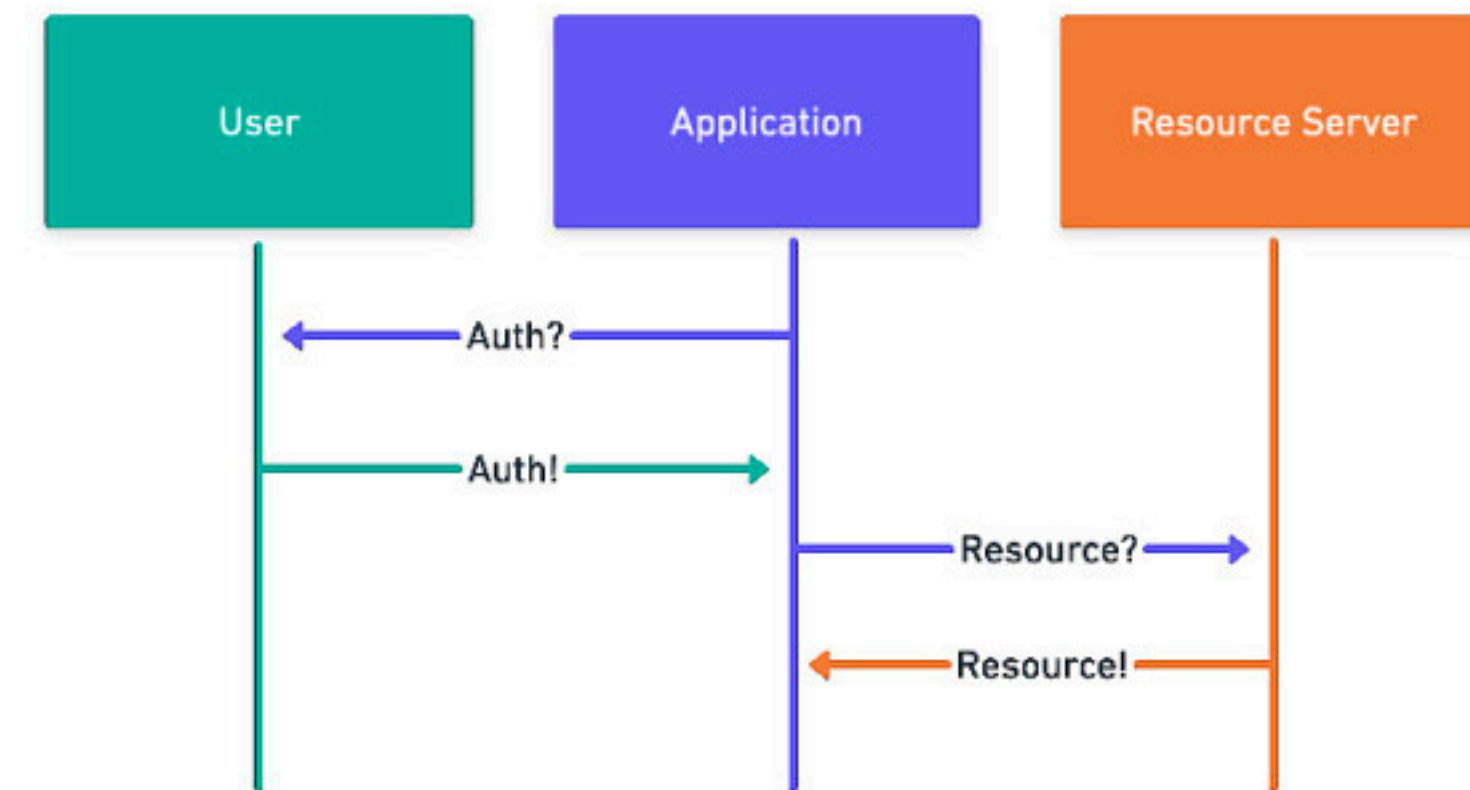
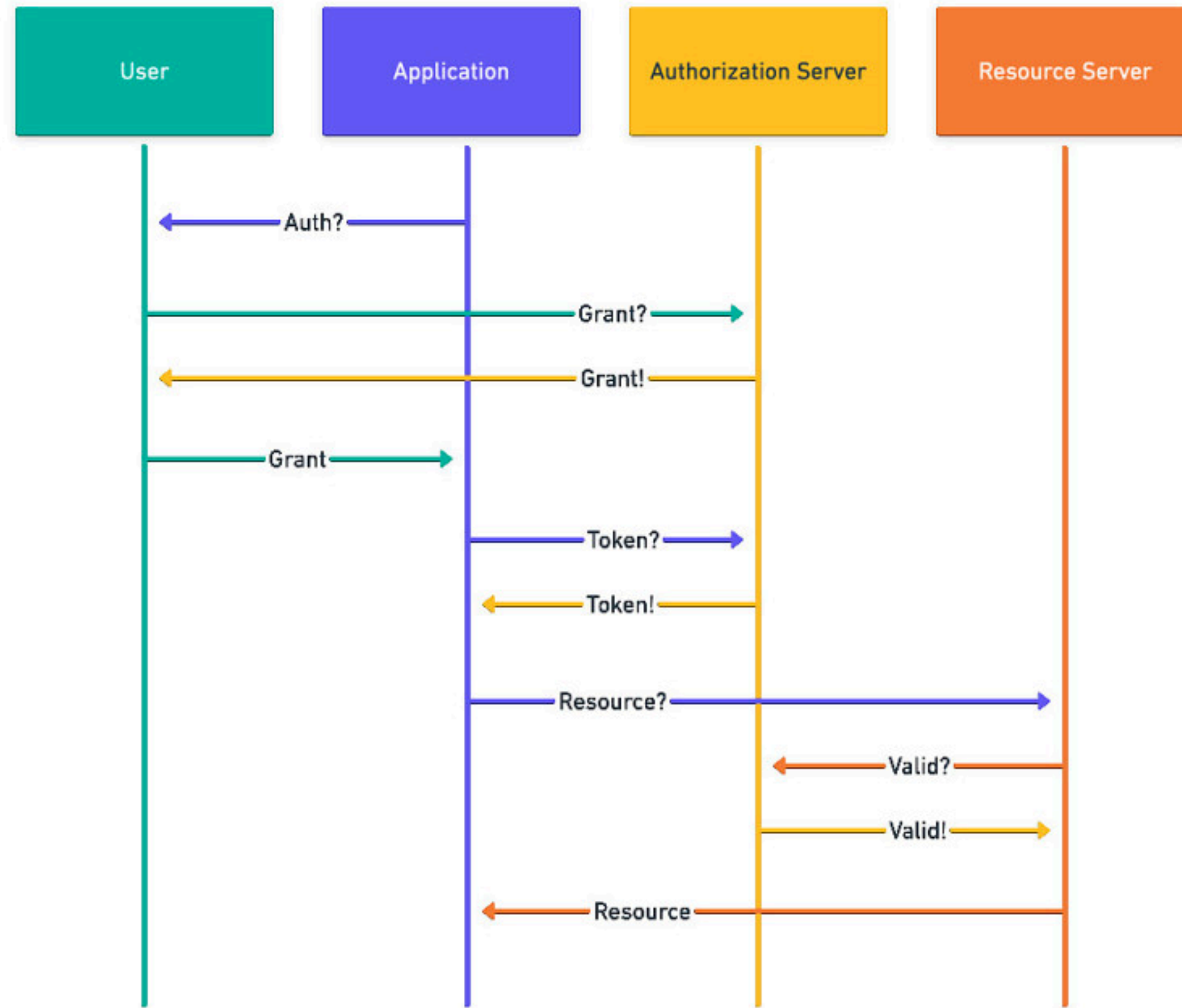


FISSION SYSTEM DIAGRAM

- Fission Web API (Haskell)
- Auth Lobby Web App (Elm)
- Fission CLI (Haskell)
- Drive Web App (Elm)
- Integrations, eg. Publish action on Github, Heroku Add-On, etc.



OAUTH VS UCAN SEQUENCE



(Verifiable & user originated)

