IPFS 101

& A BIT OF FISSION

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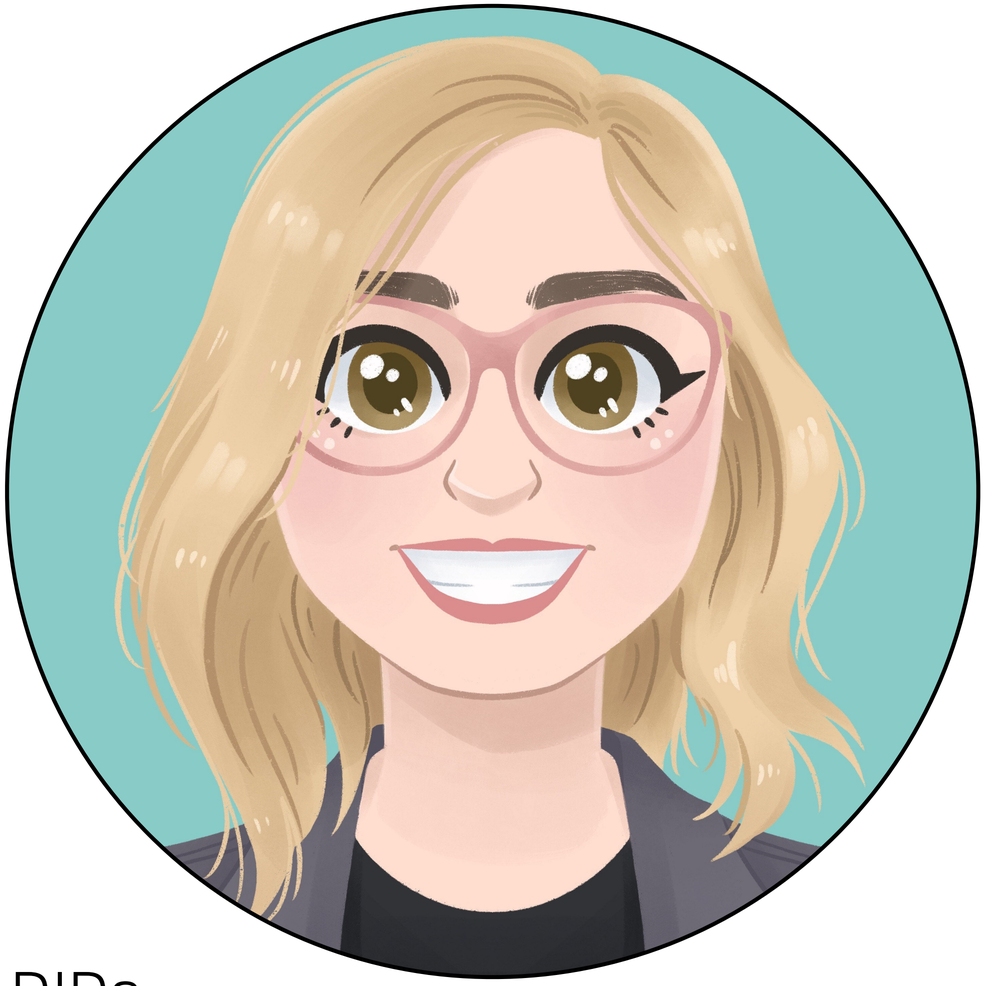
BROOKLYN ZELENKA, @expede

fission

IPFS 101 & A BIT OF FISSION

BROOKLYN ZELENKA, @expede

- Cofounder/CTO at Fission
  - `https://fission.codes`
- PLT & VMs
- Previously focused on Ethereum
  - EIPs 615, 902, 1066, 1444
  - ECIP 1050
- Currently spending a *lot* of time with IPFS & DIDs



fission

COMMONS INFRASTRUCTURE

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🤝 A SUBSTRATE FOR EVERYONE 🌍

COMMONS INFRASTRUCTURE

OPEN SOURCE

Lots of people work on it, everybody benefits from it, and then people can build upon it (even in a revenue generating fashion)

TED LEUNG (2005)

COMMONS INFRASTRUCTURE

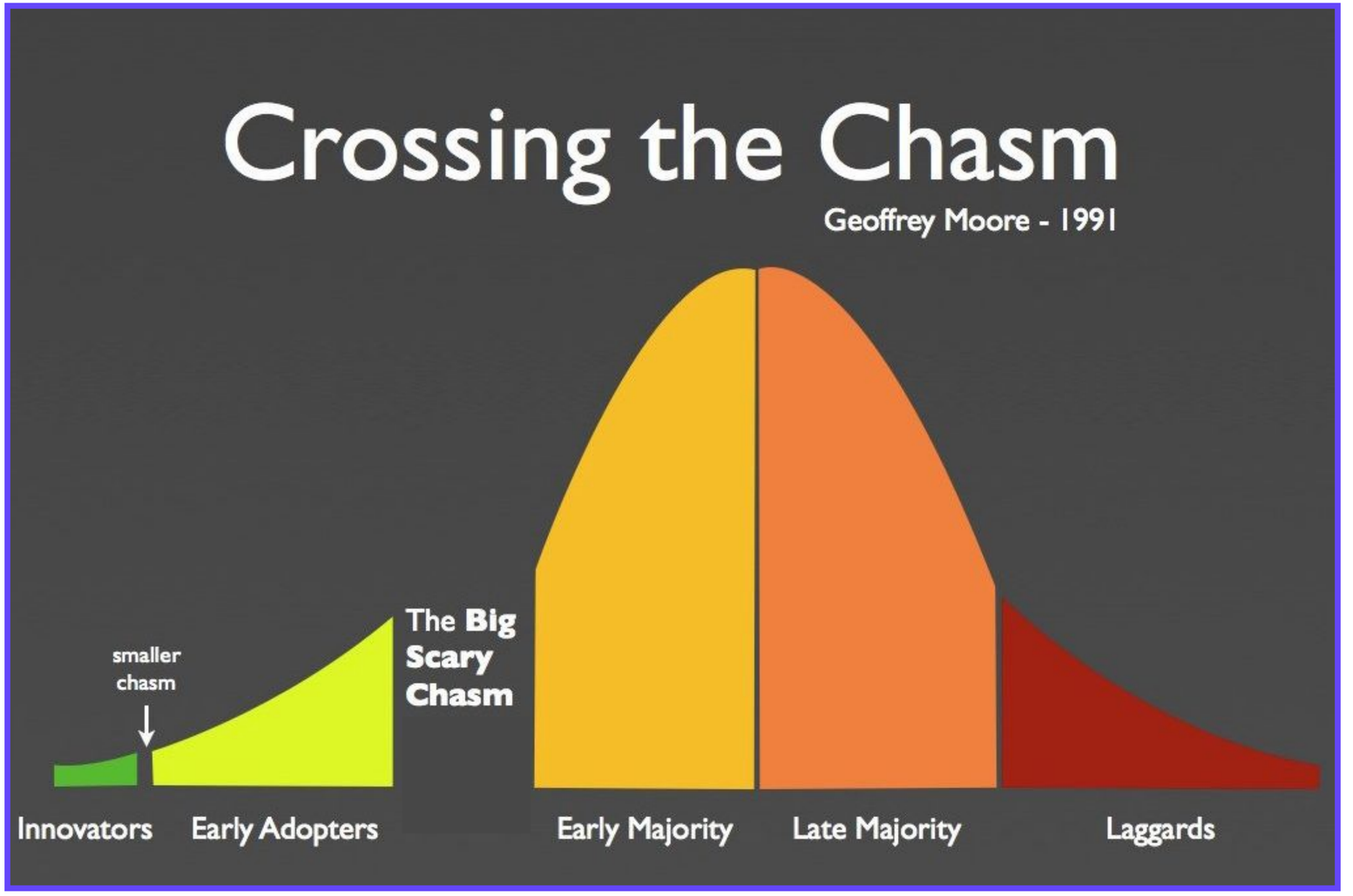
OPEN NETWORKS

Lots of people work on it, everybody benefits from it, people can build upon it (even in a revenue generating fashion), and it's "owned" by everyone.

By participating — even with competitive goals — you are cooperating by serving the content and running compute of others.

COMMONS INFRASTRUCTURE

WHY NOT MORE WIDESPREAD?



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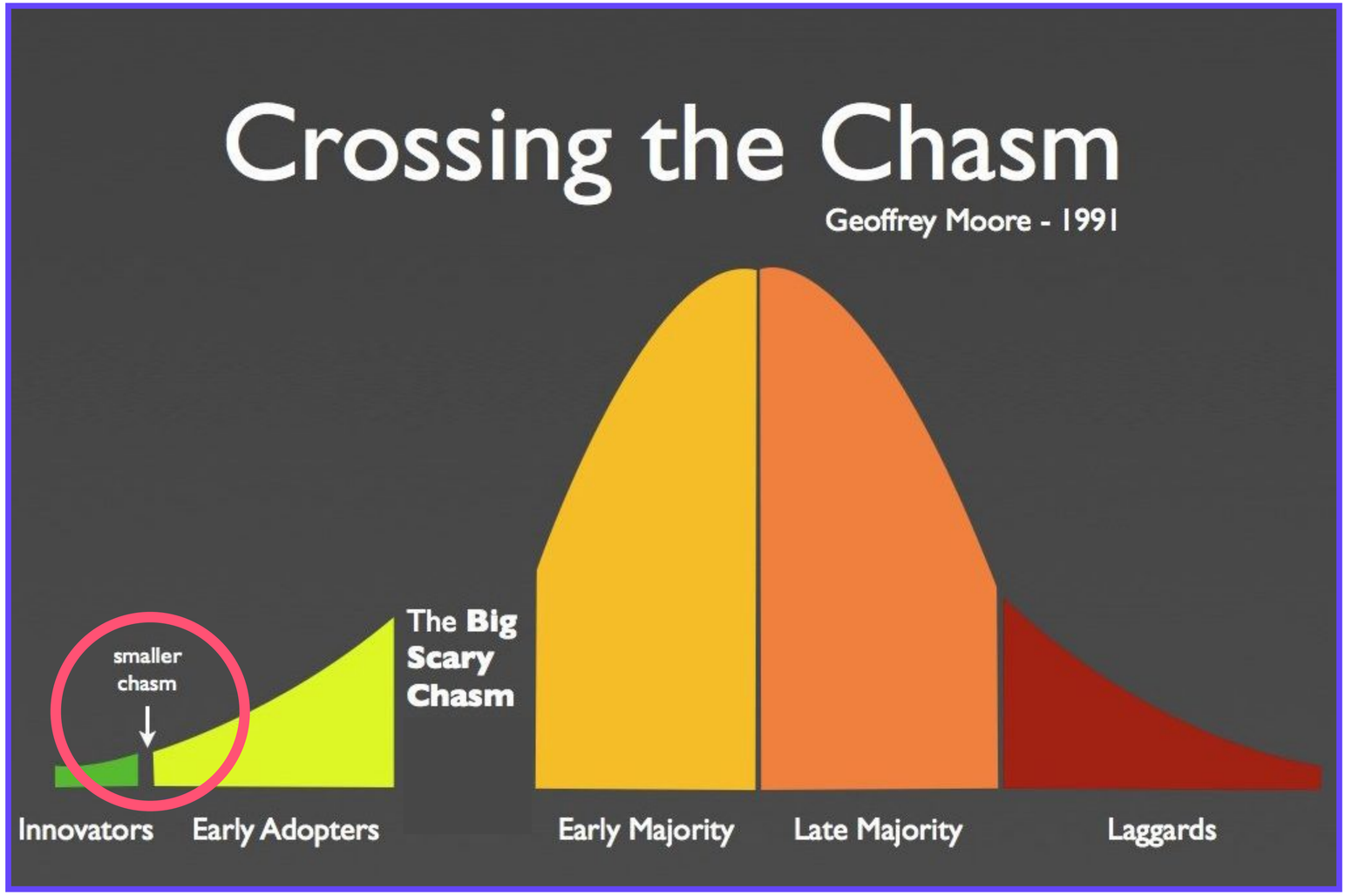

IPFS 101

IPFS 101

MEET THE CONTENT-ADDRESSABLE WEB 👋

IPFS PRIMER

INTERPLANETARY FILE SYSTEM

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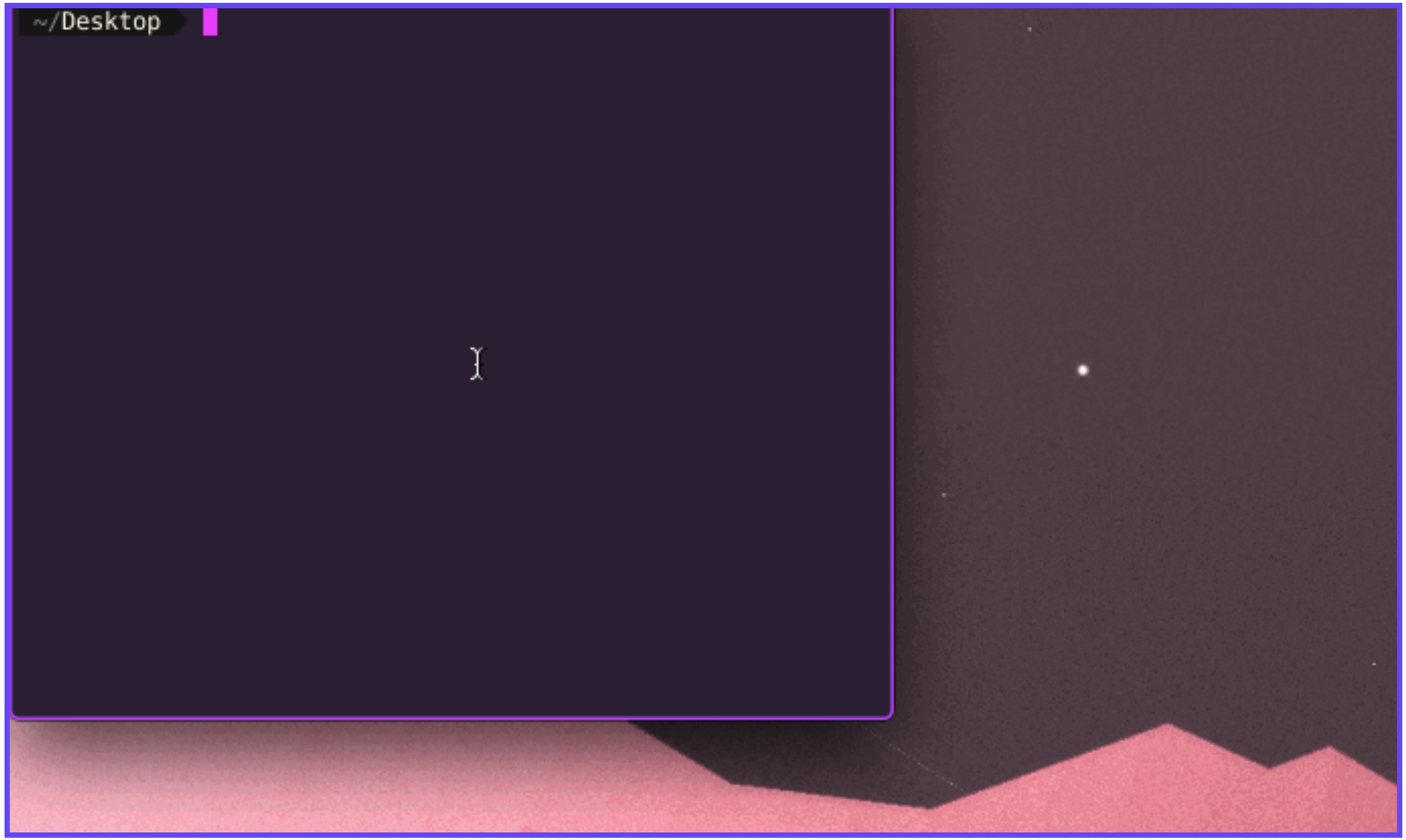

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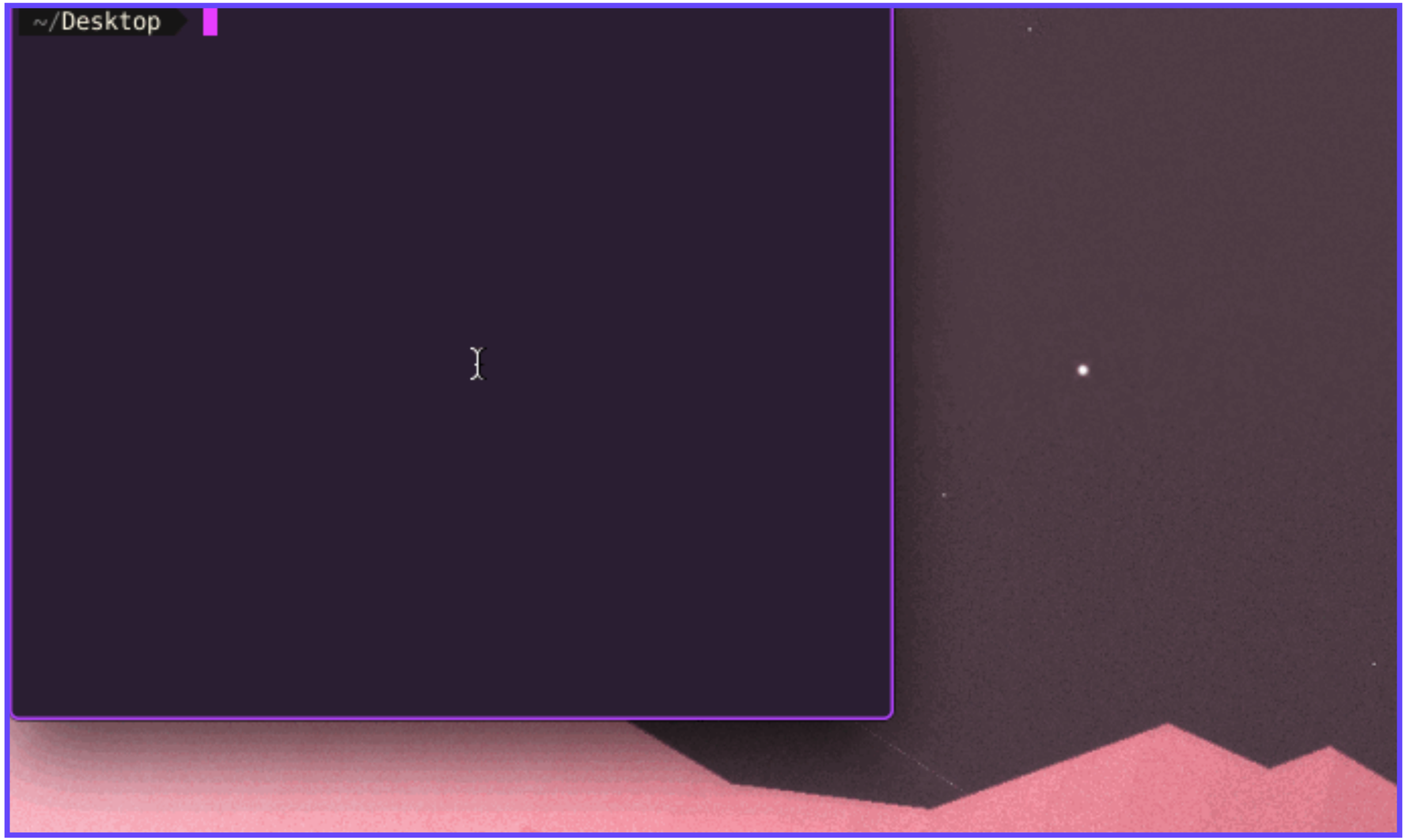
INTERPLANETARY FILE SYSTEM



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  - Focused on the physical network

VIRTUAL ADDRESS

PHYSICAL LOCATION

IPFS PRIMER

THE WEB TODAY

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- Like a key/value store **`{ip => {path => content}}`**
- “Location addressing”
  - DNS maps names to IP addresses
  - Focused on the physical network
- Mutable addressing
  - `www.foo.com/baz` may be JSON today, but a video tomorrow
  - …or altered content

VIRTUAL ADDRESS

PHYSICAL LOCATION

IPFS PRIMER

CONTENT ADDRESSING

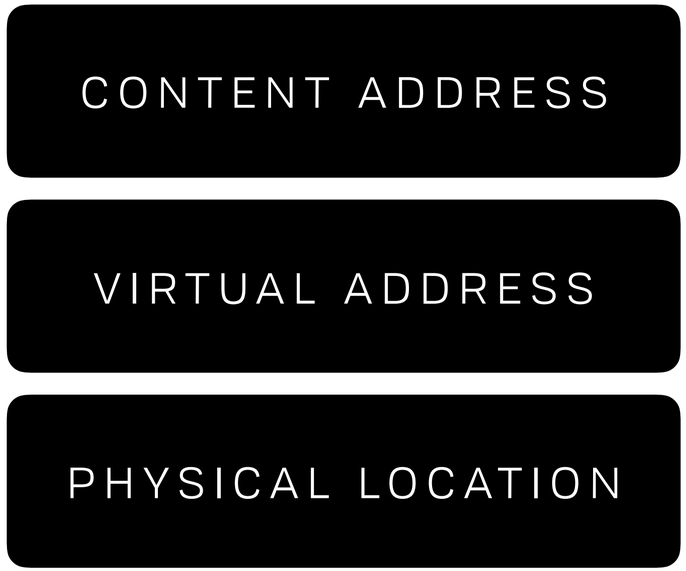
VIRTUAL ADDRESS

PHYSICAL LOCATION

IPFS PRIMER

CONTENT ADDRESSING

- A layer of abstraction above location



IPFS PRIMER

CONTENT ADDRESSING

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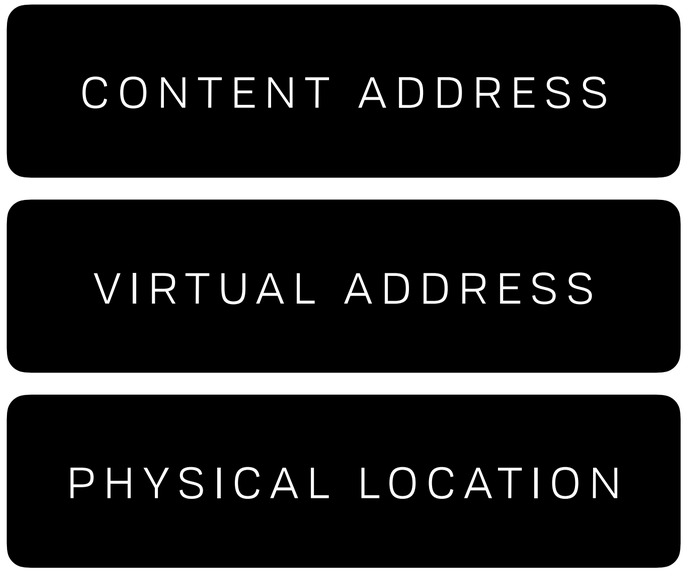
- Like a key/value store **`{hash(content) => content}`**
  - Content hash AKA “content identifier” or CID
  - Special “universal” relationship to content



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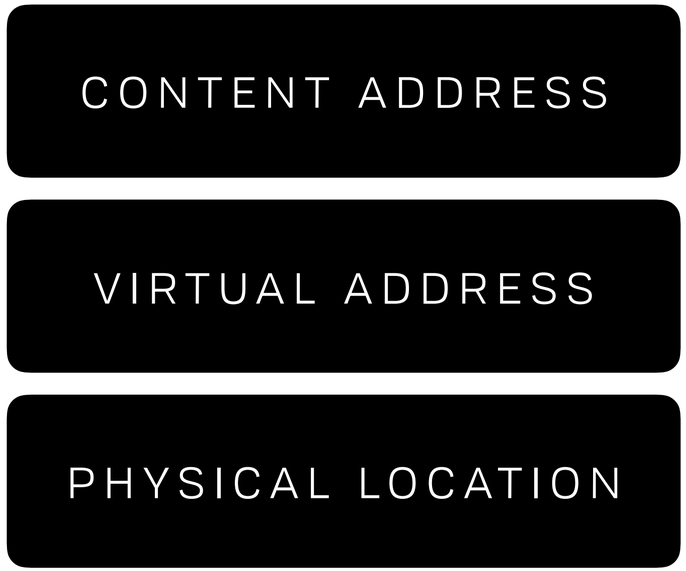

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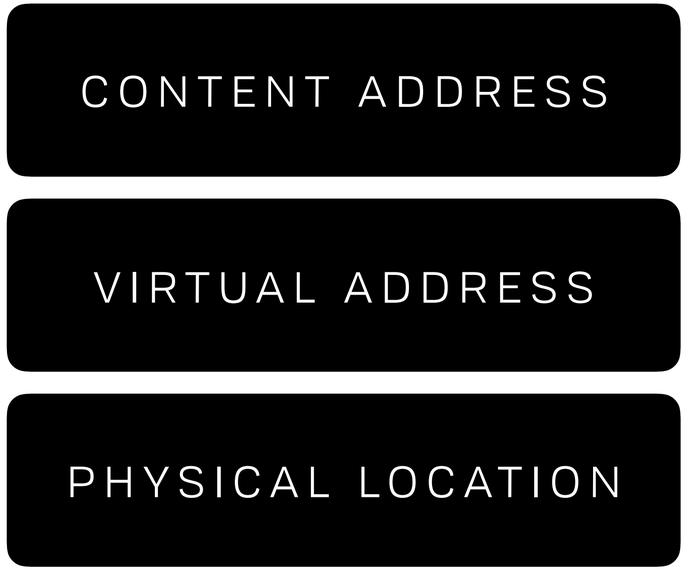
- Does not care where it lives



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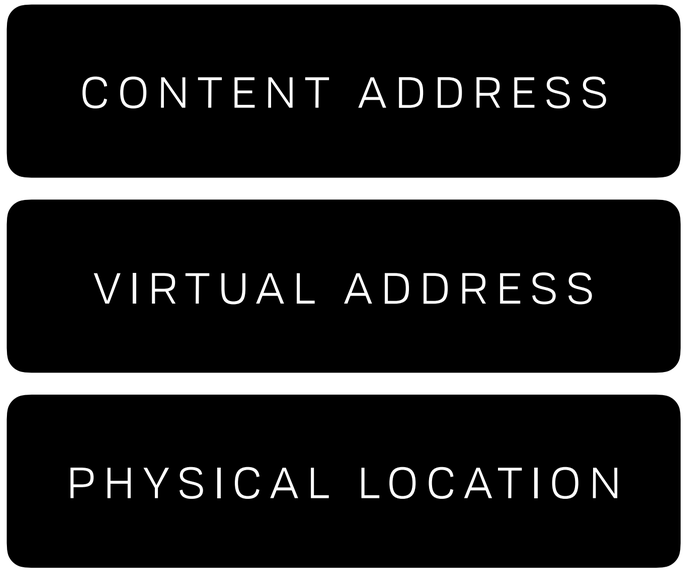
- Like a key/value store **`{hash(content) => content}`**
  - Content hash AKA “content identifier” or CID
  - Special “universal” relationship to content
- Focused on *the data*
- Does not care where it lives
- Still have paths
  - Immutable DAG
  - Why no loops?



IPFS PRIMER

LINKED DATA

IPFS PRIMER
LINKED DATA

```
{
  Qm123456…: {
    data: “Hello world”,
    links: [
      {name: “company”, hash: Qmabcdef…}
      {name: “license”, hash: Qmzyxwvu…}
    ]
  }
}
```

IPFS PRIMER

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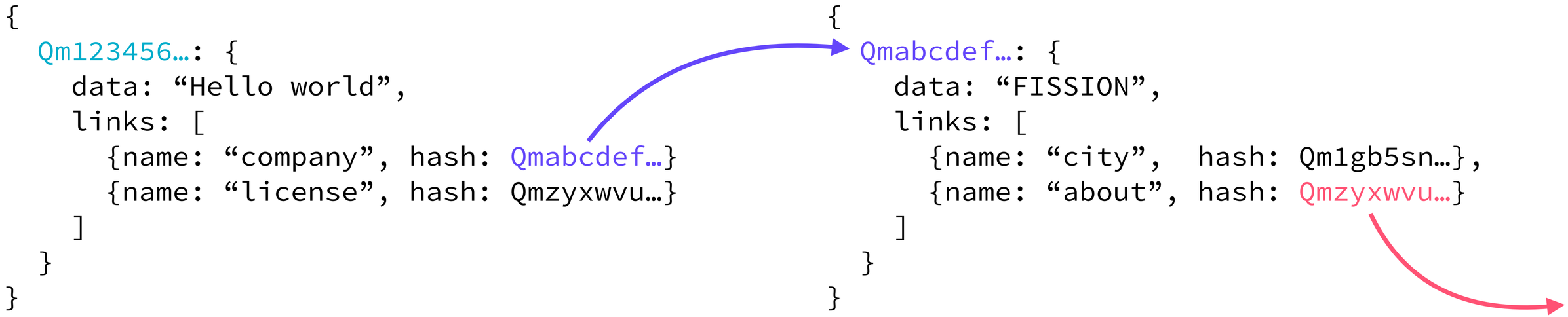

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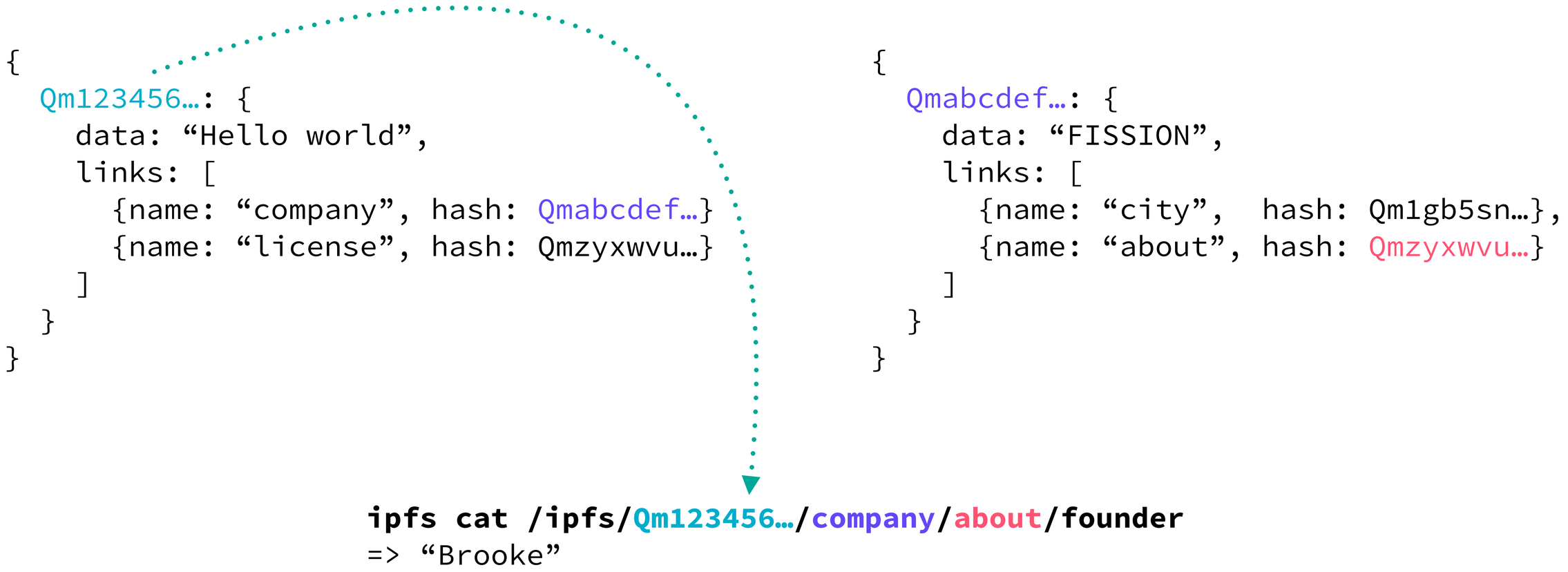

IPFS PRIMER

ROUTING & LOOKUP 🔍🌊

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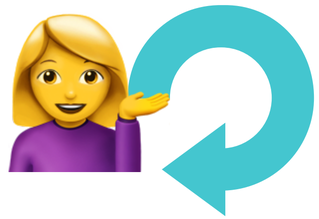

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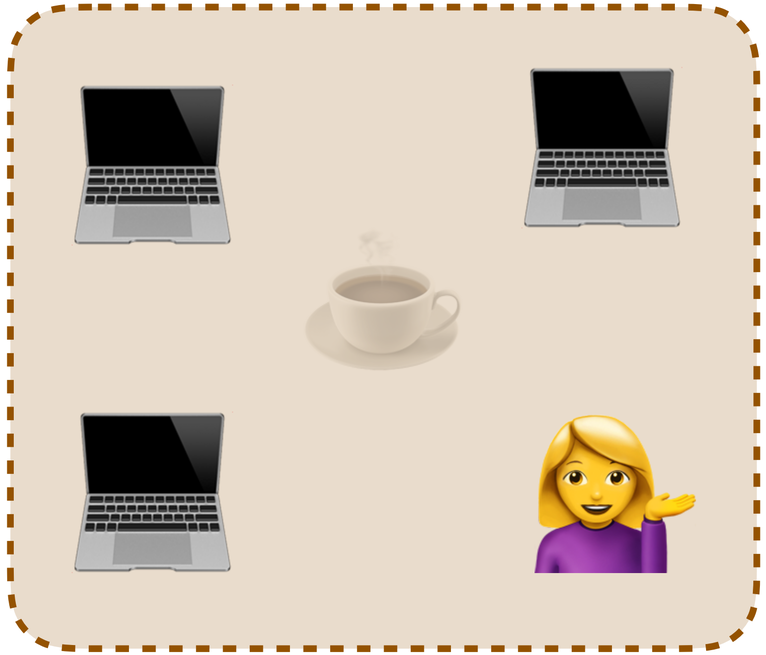

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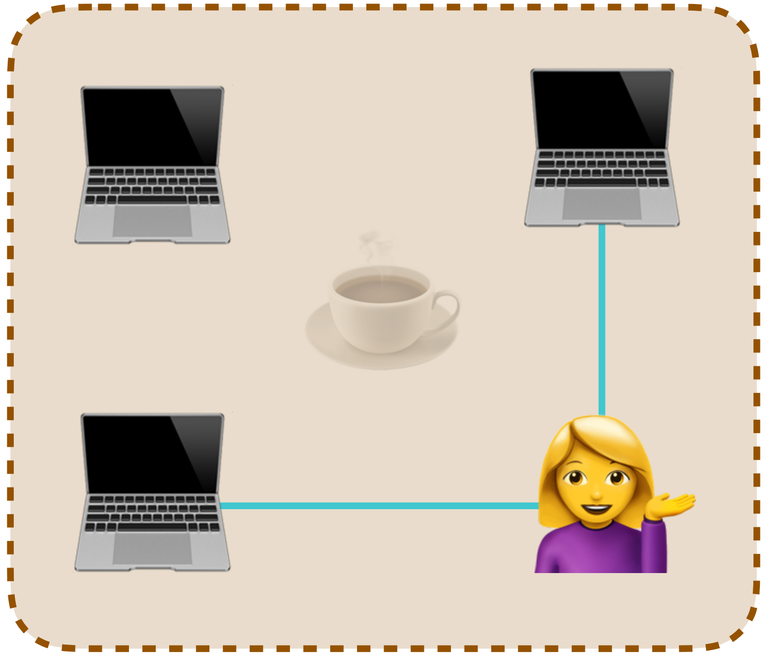

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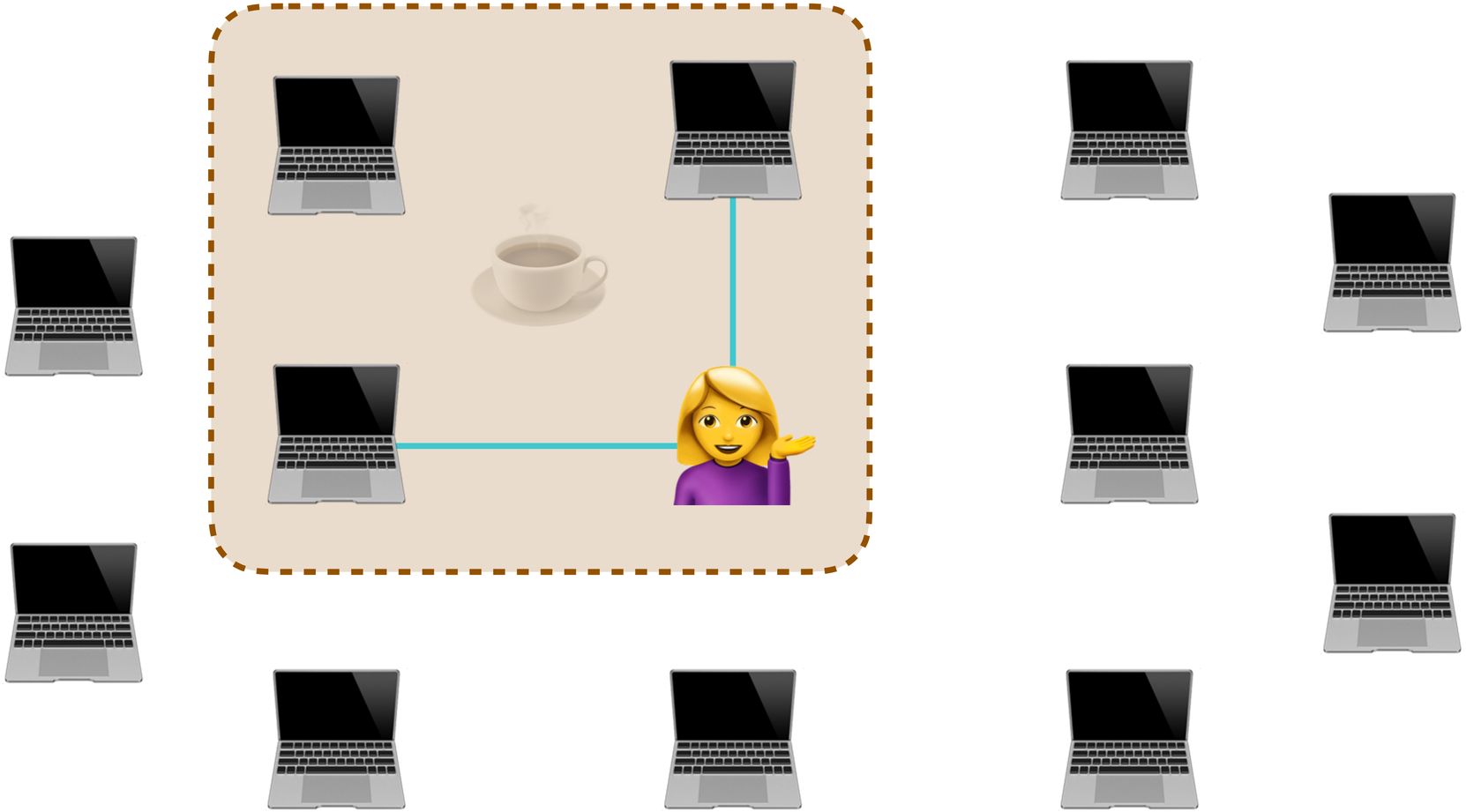

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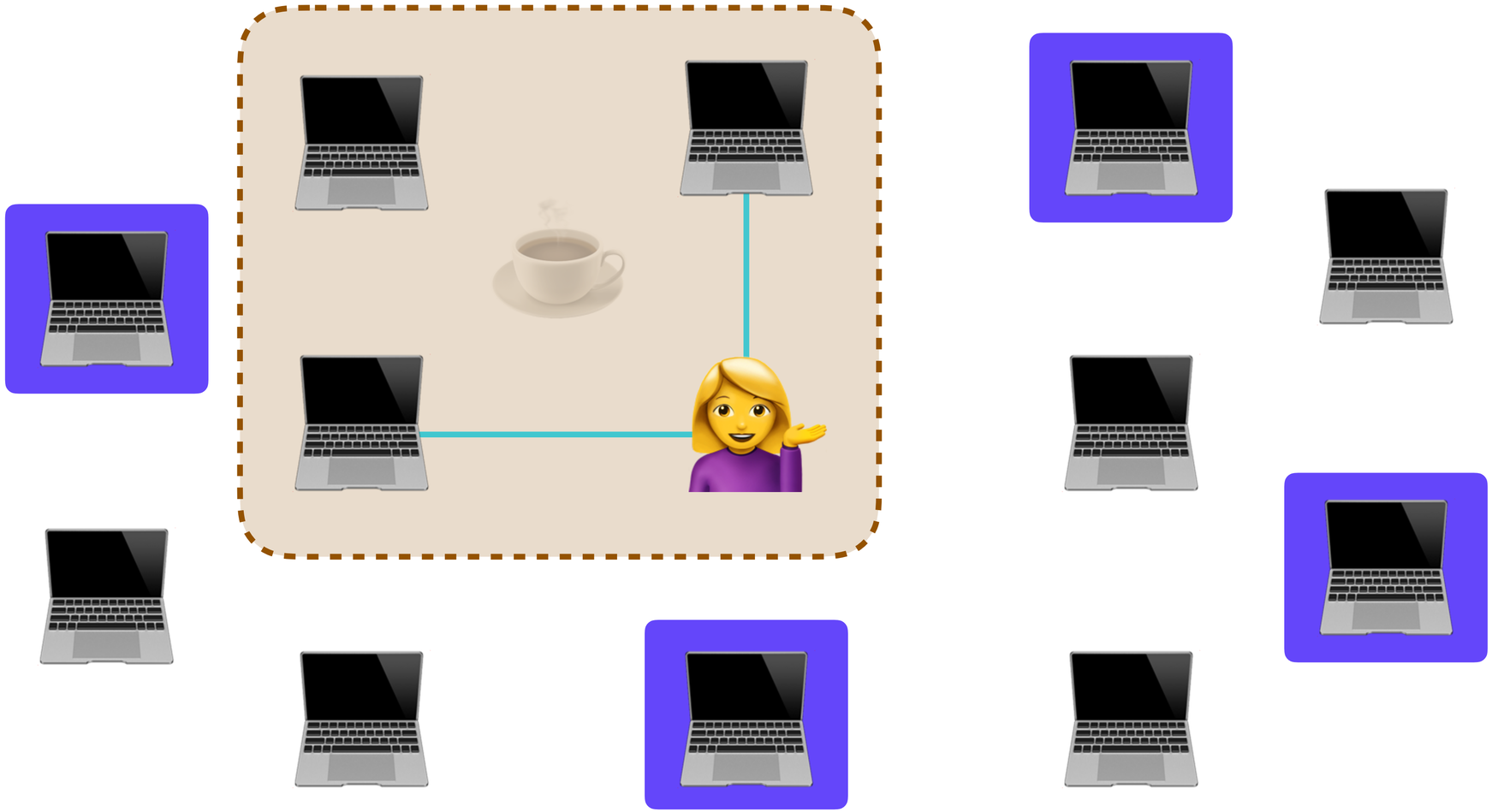

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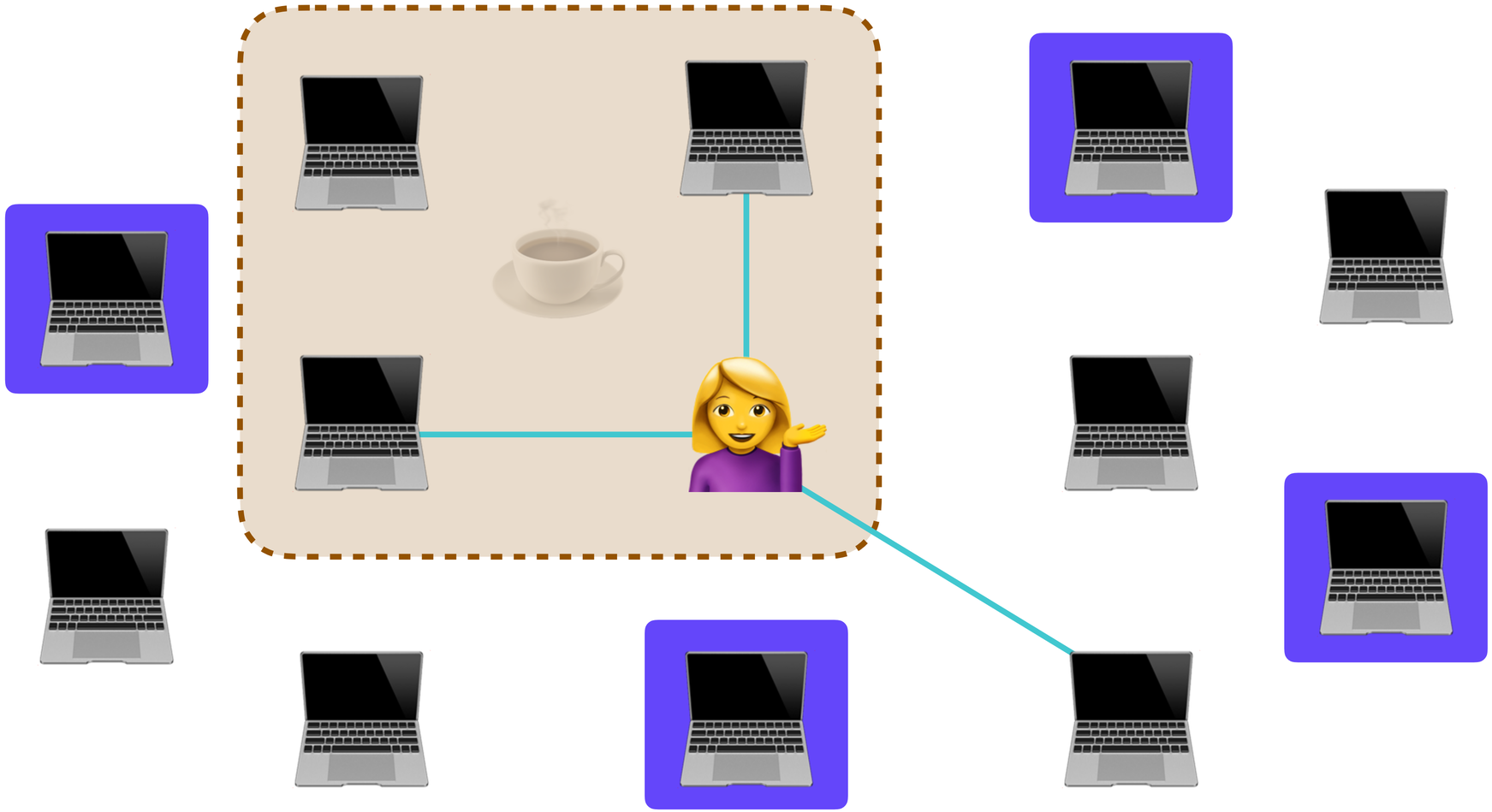

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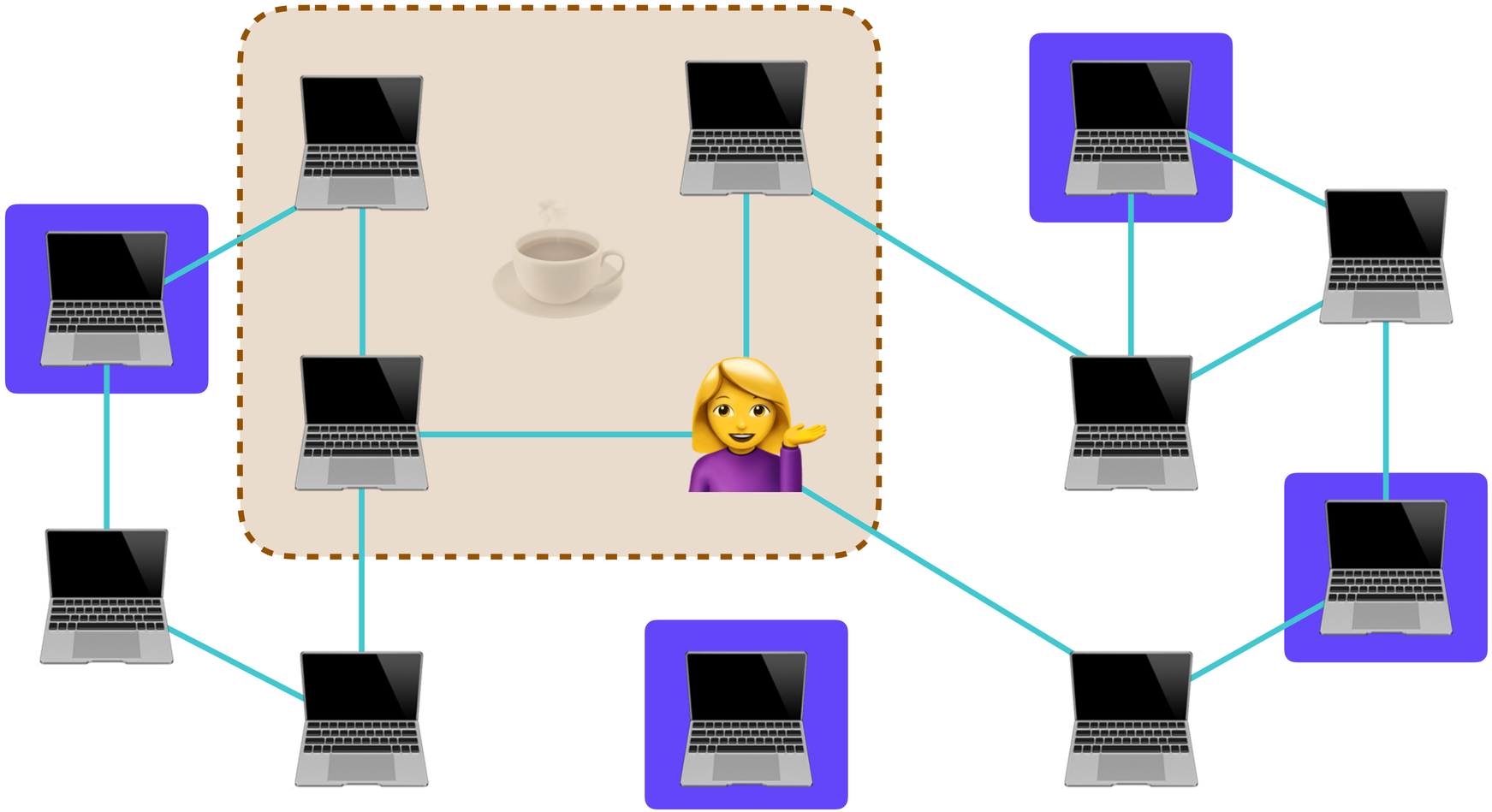

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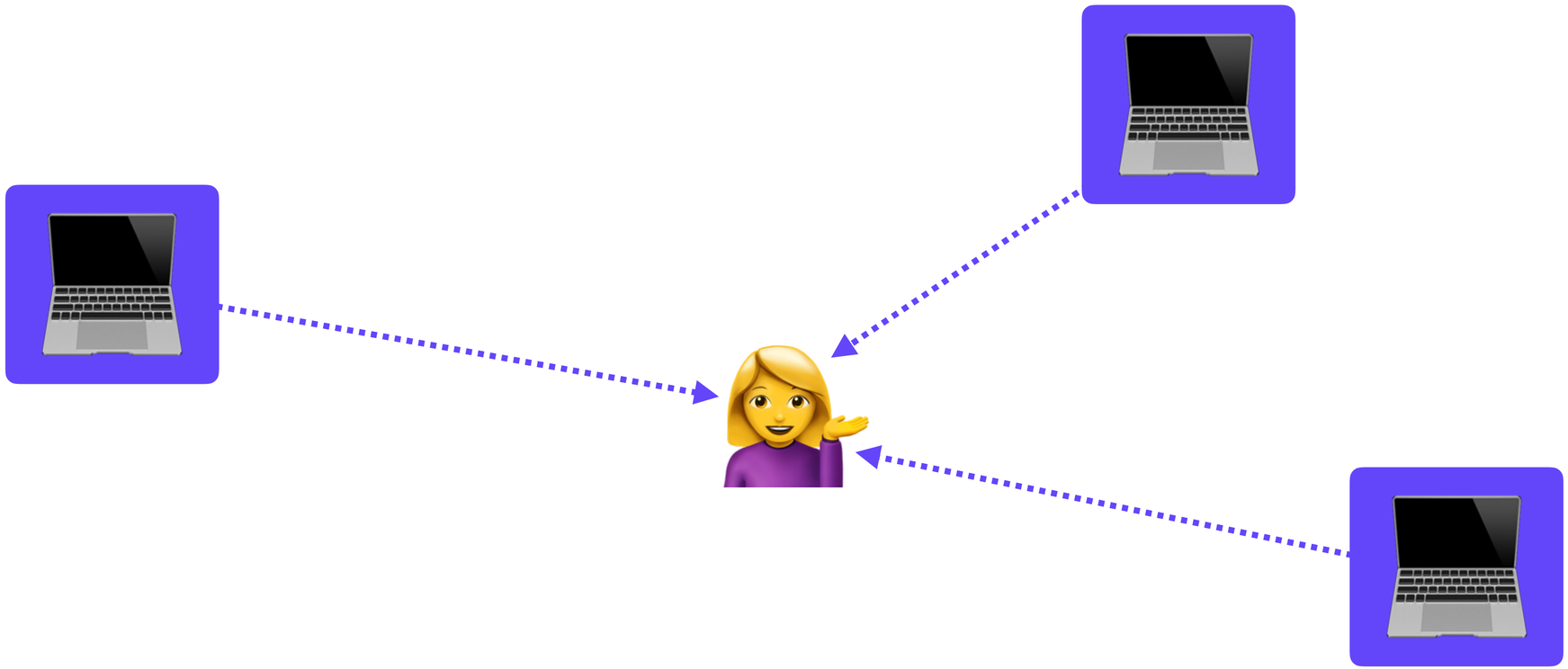


A QUICK DEMO

A QUICK DEMO

DECENTRALIZED WEB IN 30 SECONDS OR LESS — NO STEP 2 🚀

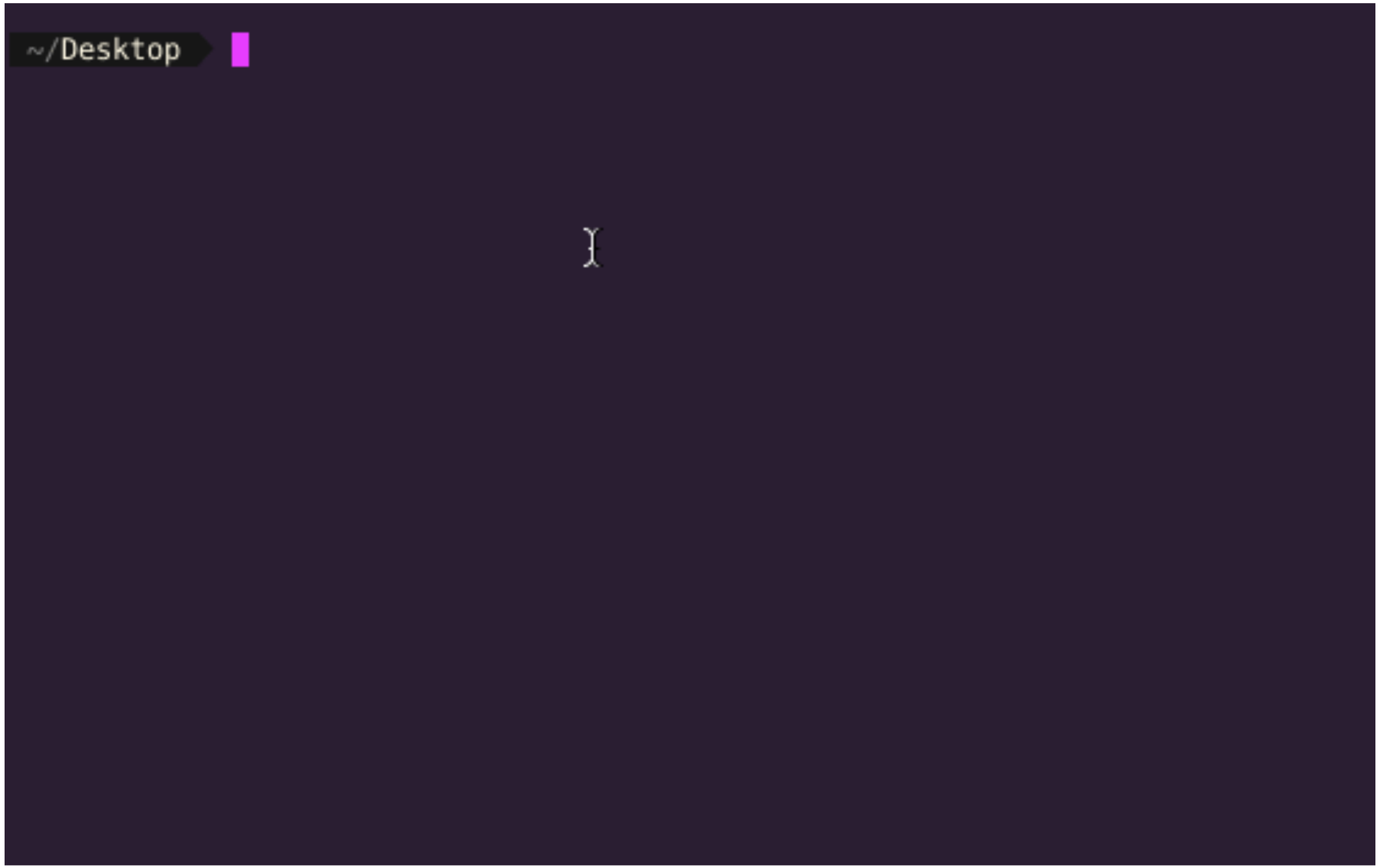
QUICK DEMO

MACOS INSTALL

```
brew tap fission-suite/fission
brew install fission-cli
```

QUICK DEMO

HOW TO USE



QUICK DEMO

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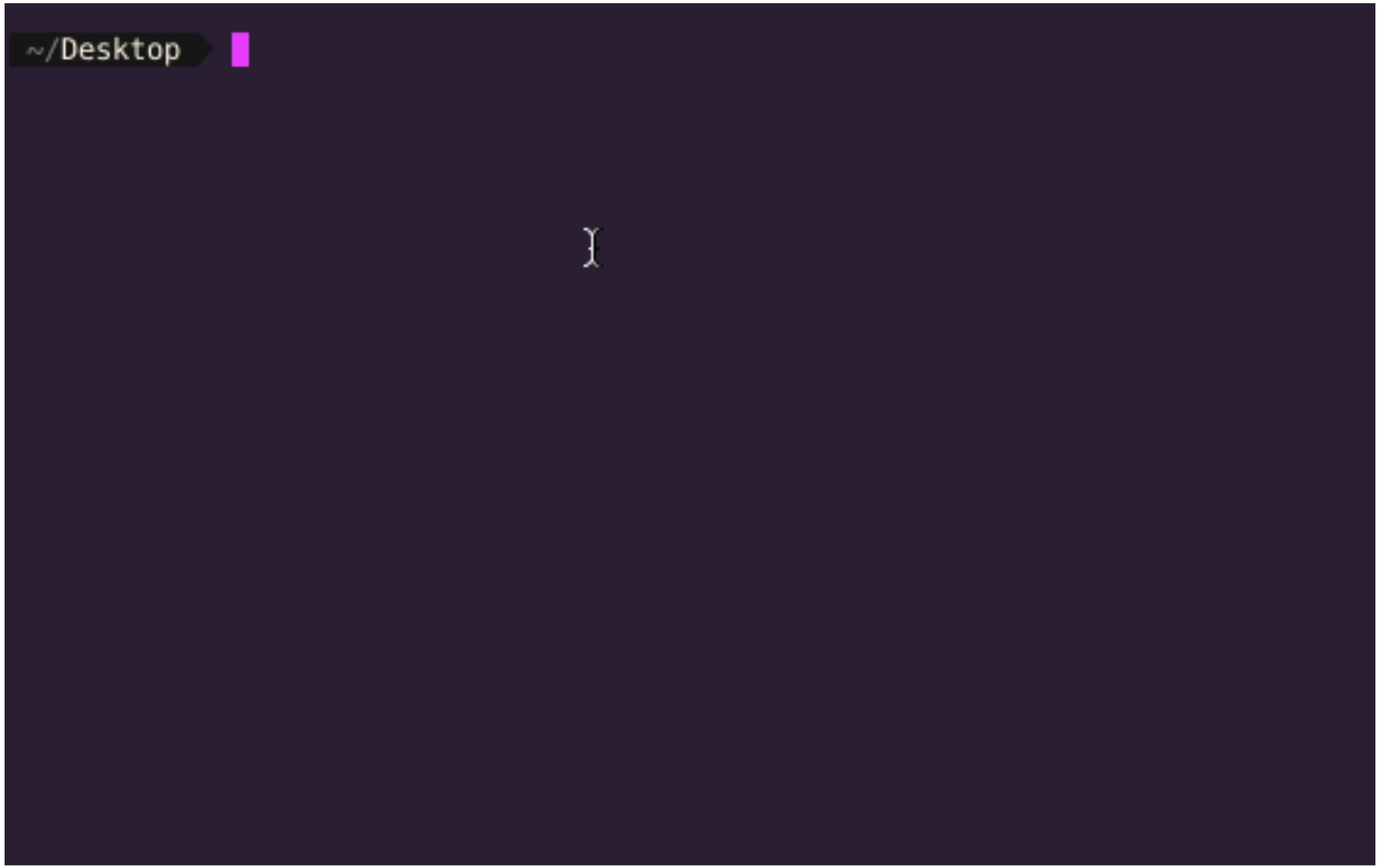

QUICK DEMO

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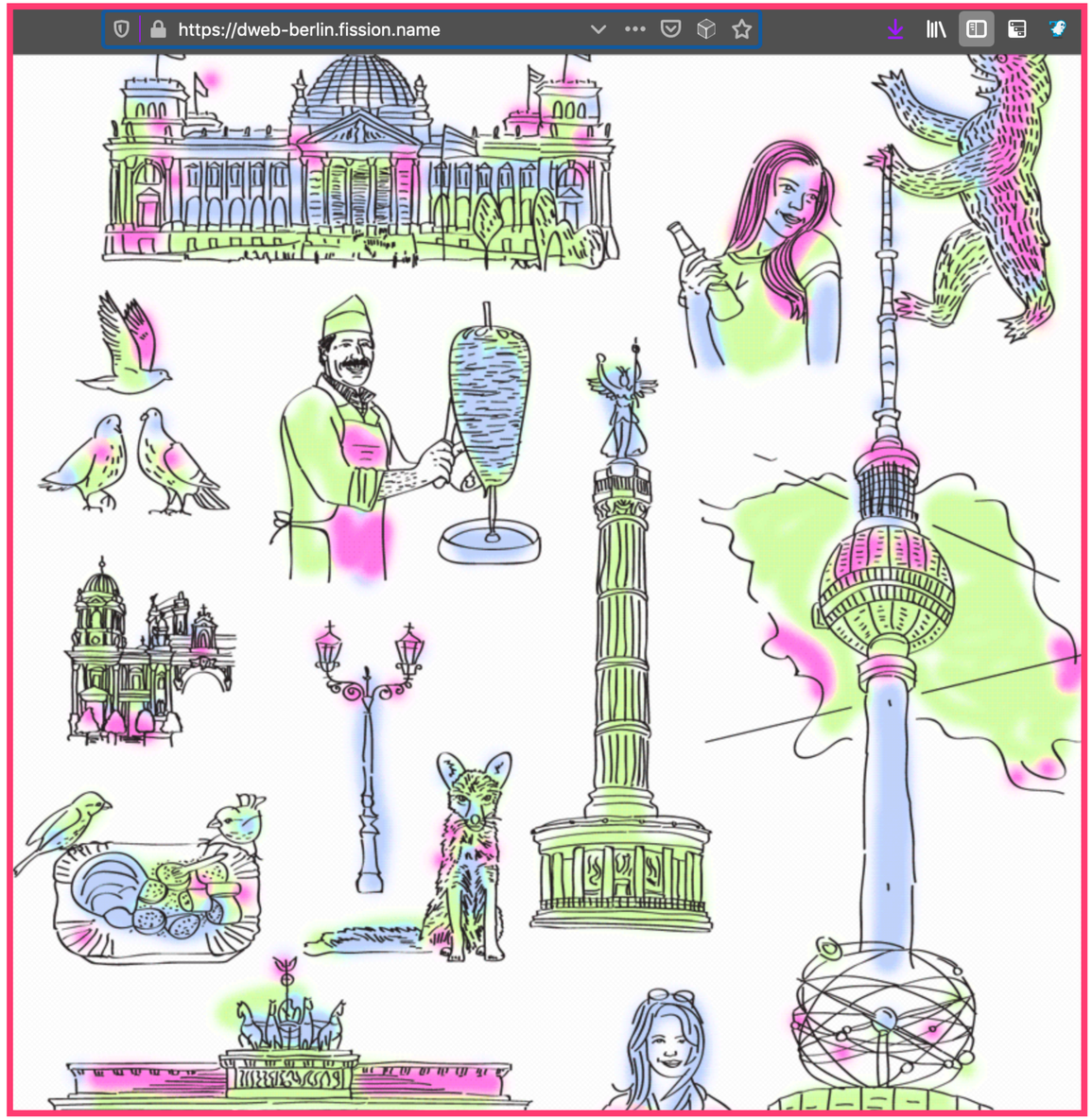

WHAT FISSION IS UP TO

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👩‍💻 MAKING LIFE EASIER FOR ALL DEVS ✨

MAKING LIFE EASIER FOR ALL DEVS

PARADIGM WAVES

MAKING LIFE EASIER FOR ALL DEVS

PARADIGM WAVES

CONTAINERS

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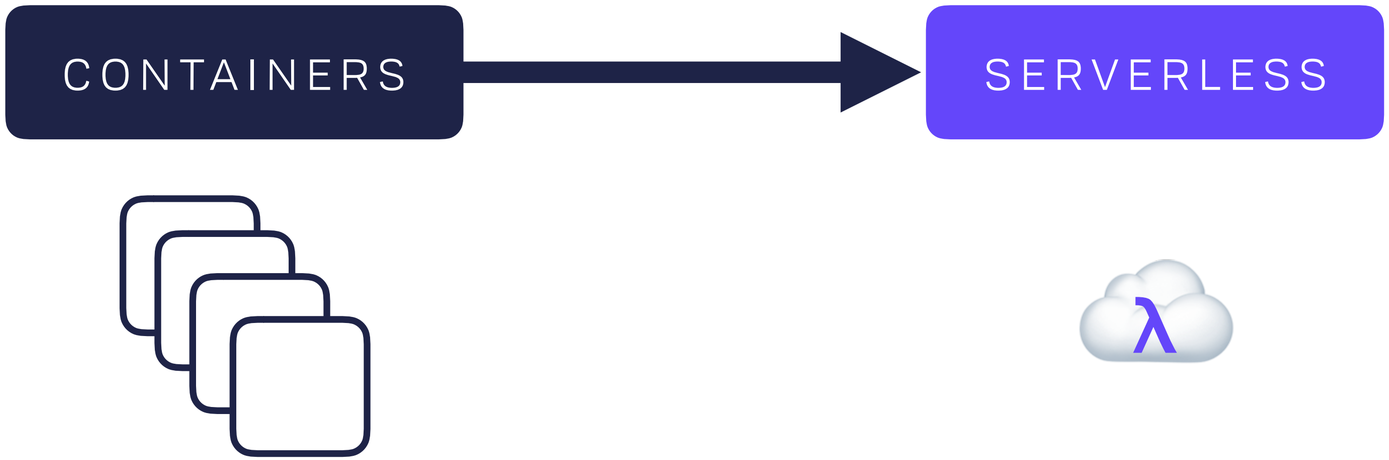

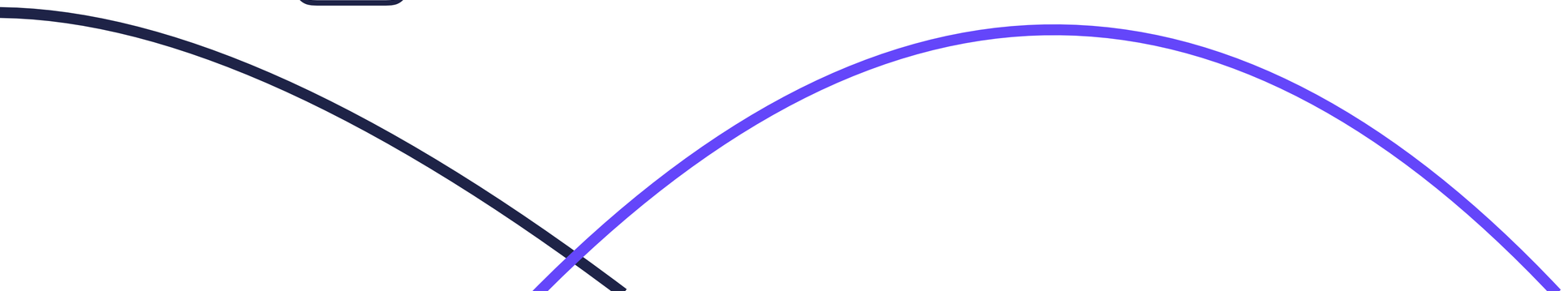

MAKING LIFE EASIER FOR ALL DEVS

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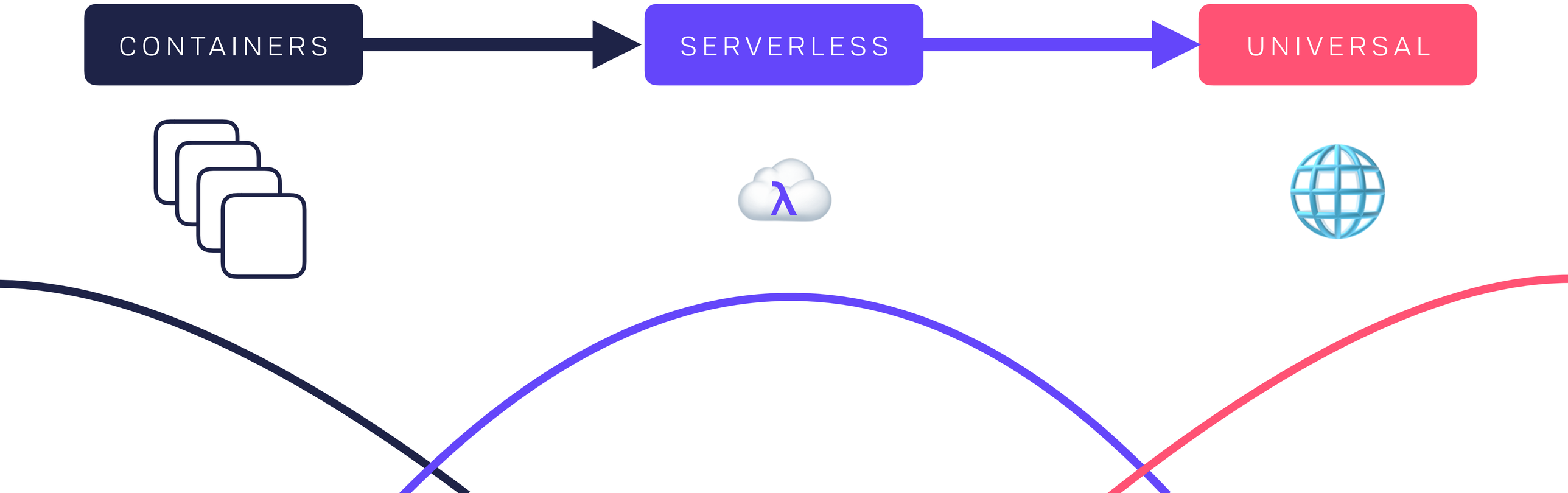

MAKING LIFE EASIER FOR ALL DEVS

NATIVE SDK FOR THE WEB

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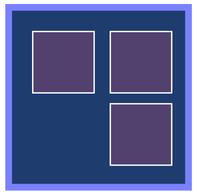

MAKING LIFE EASIER FOR ALL DEVS

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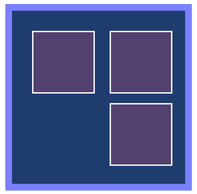

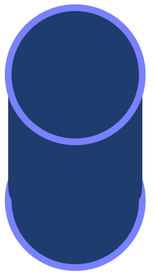

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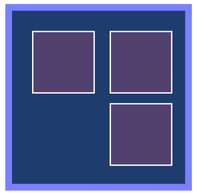

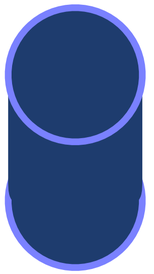

MAKING LIFE EASIER FOR ALL DEVS

THE NEXT WAVE OF PLATFORMS

MAKING LIFE EASIER FOR ALL DEVS

THE NEXT WAVE OF PLATFORMS

Global Storage

FILES

DATABASE

MAKING LIFE EASIER FOR ALL DEVS

THE NEXT WAVE OF PLATFORMS

Global Storage

FILES 📄

DATABASE 🛢️

Digital Scarcity

IDENTITY 🙆

CHECKPOINTS 🕐

MAKING LIFE EASIER FOR ALL DEVS

THE NEXT WAVE OF PLATFORMS

Global Storage

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IDENTITY 🙆

CHECKPOINTS 🕐

Portable Compute

DISTRIBUTED COMPUTE 🖥️

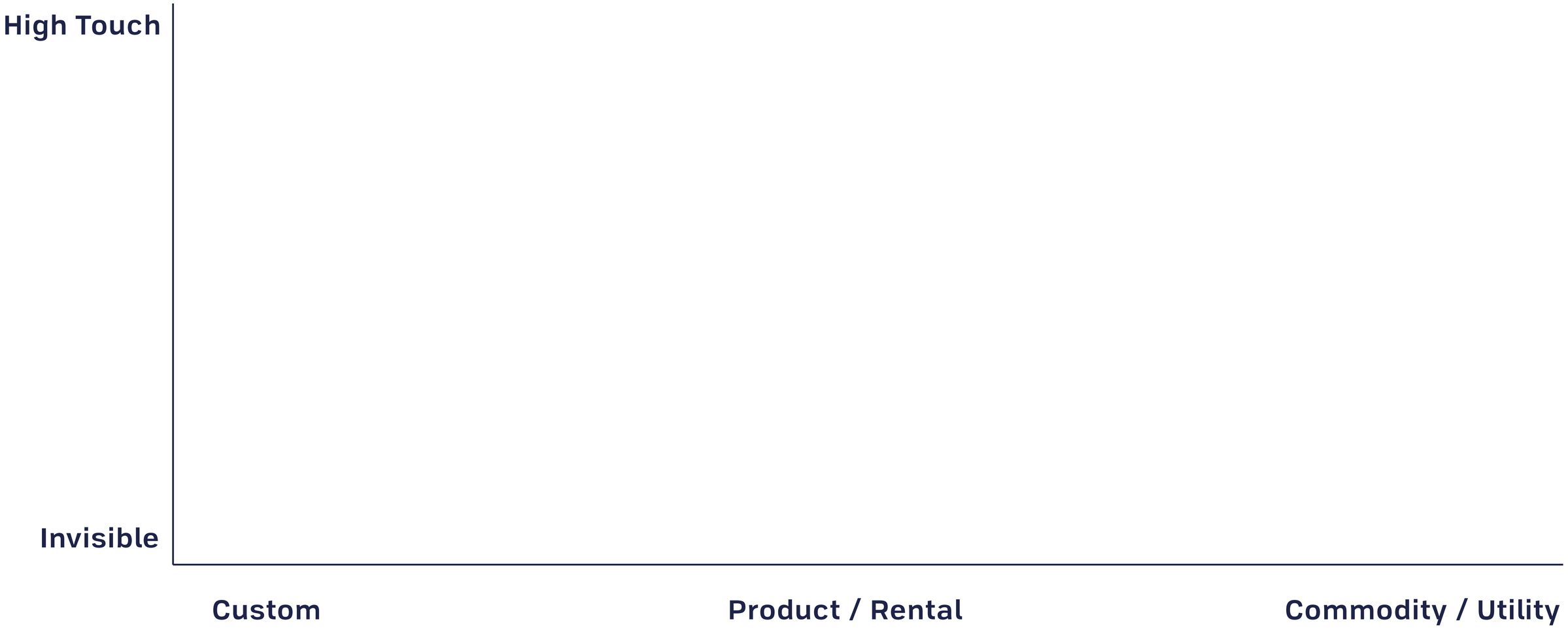
SMART CONTRACTS 📝

MAKING LIFE EASIER FOR ALL DEVS

LOWER BARRIERS

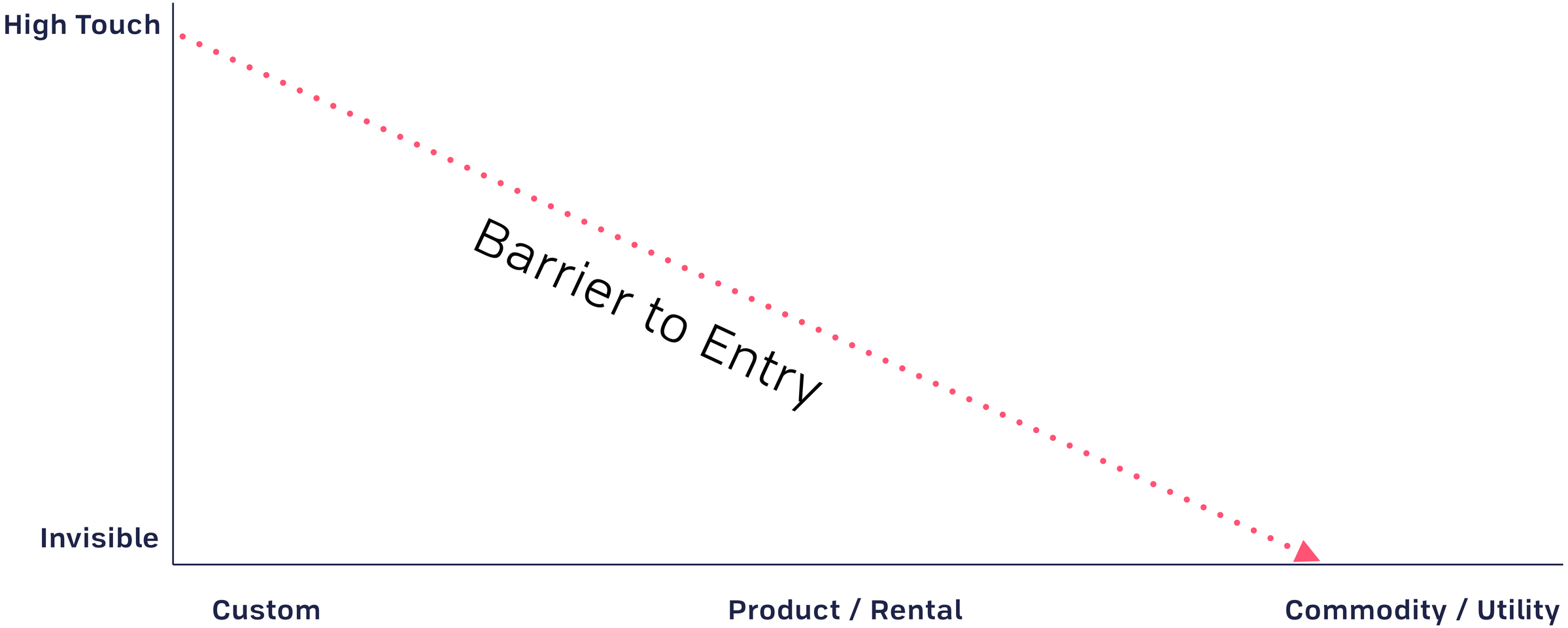
MAKING LIFE EASIER FOR ALL DEVS

LOWER BARRIERS



MAKING LIFE EASIER FOR ALL DEVS

LOWER BARRIERS



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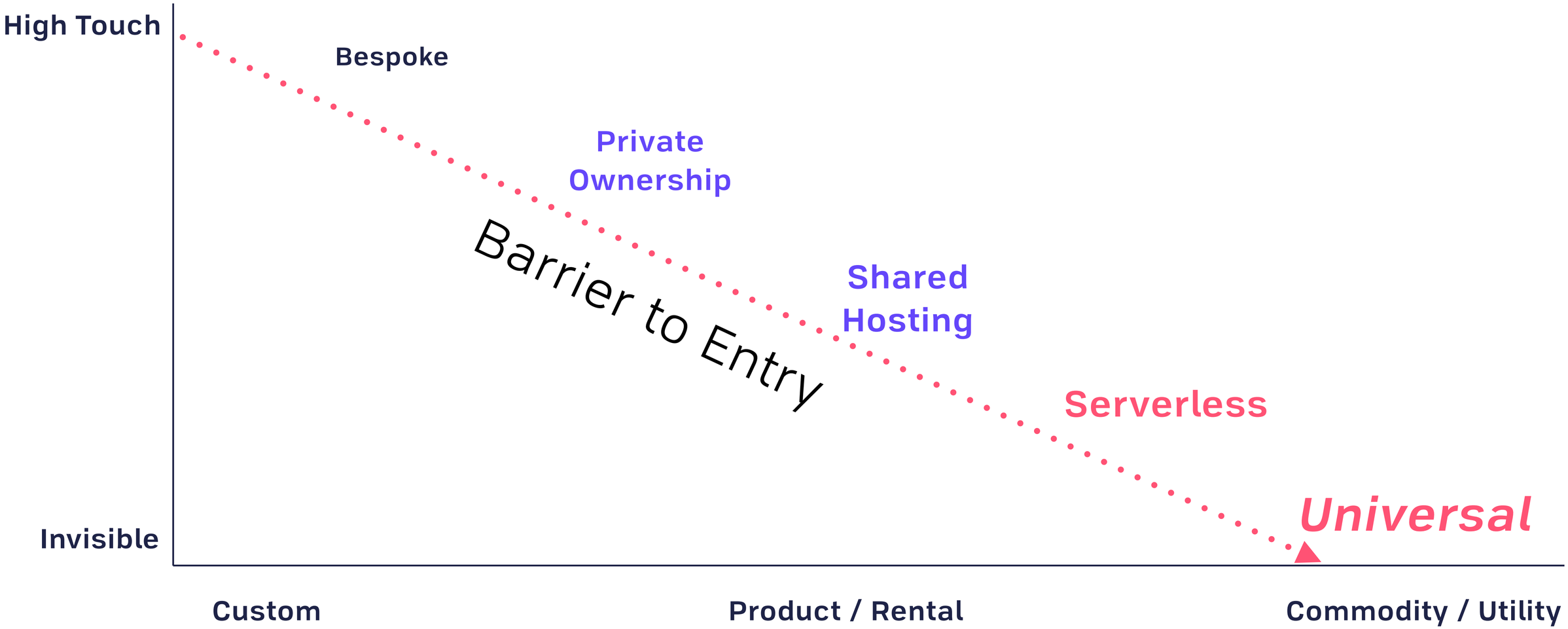

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https://talk.fission.codes
https://tools.fission.codes

🇩🇪 THANK YOU, BERLIN 🎉

brooklyn@fission.codes
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