

UCAN Decentralize Auth

 **Authorise Everything, Everywhere, All At Once** 



github.com/ucan-wg

UCAN Decentralize Auth

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When speaking of computation,
all too much emphasis is often placed on
the [services] themselves. ***The fabric of a
system is the dynamic reference graph.***

Mark Miller, An Ode to the Granovetter Diagram

UCAN Decentralize Auth


Brooklyn Zelenka @expede



github.com/expede

UCAN Decentralize Auth

Brooklyn Zelenka @expede

- ◆ Cofounder & CTO at Fission 
 - ◆ discord.gg/fissioncodes
 - ◆ @fission@plnetwork.xyz
- ◆ Might know a thing or two about UCAN
 - ◆ github.com/ucan-wg
- ◆ PLT and distributed systems are my jam



github.com/expede

UCAN Decentralize Auth
Everywhere

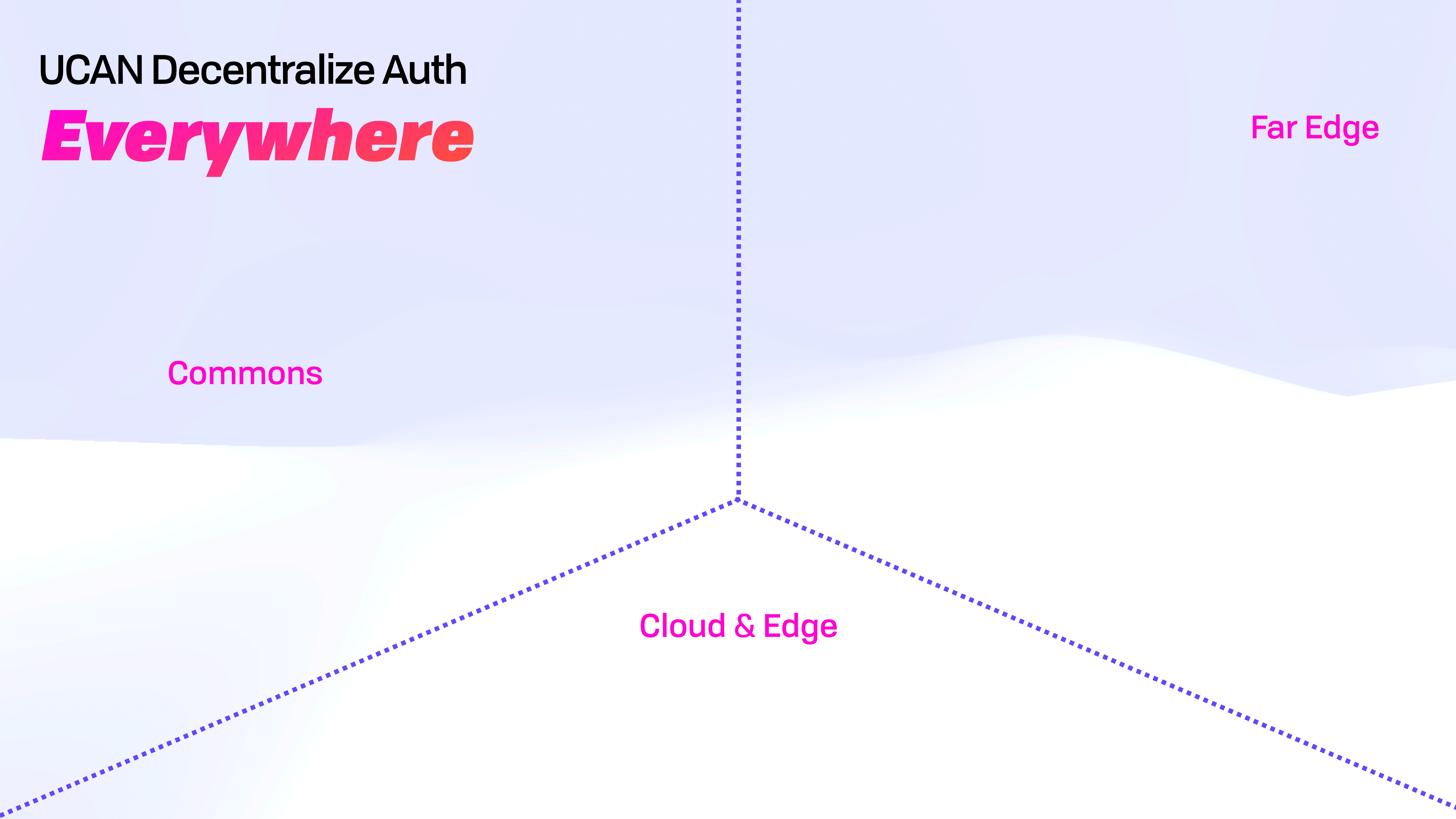
UCAN Decentralize Auth

Everywhere

Far Edge

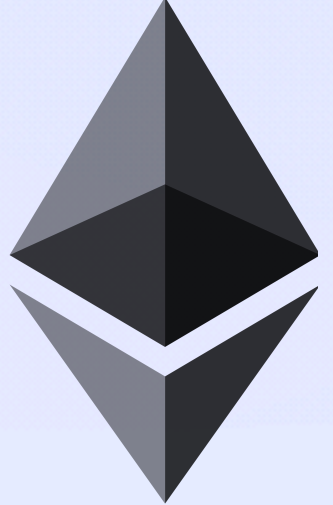
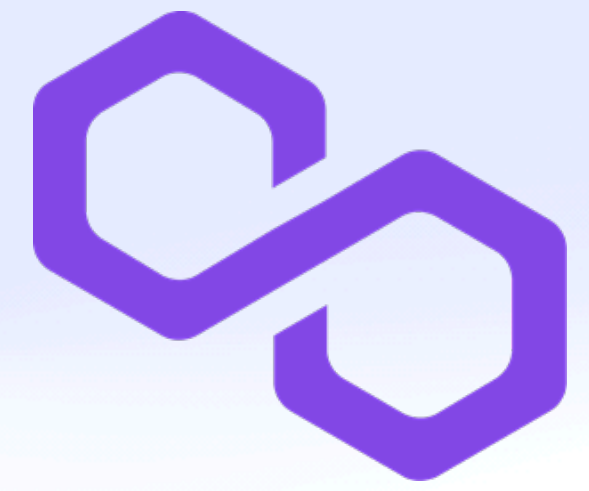
Commons

Cloud & Edge

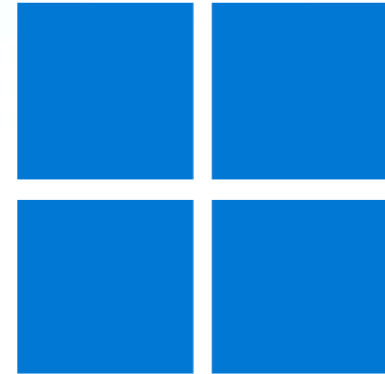
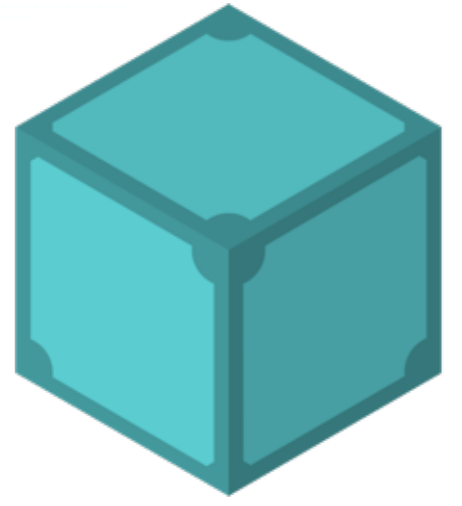
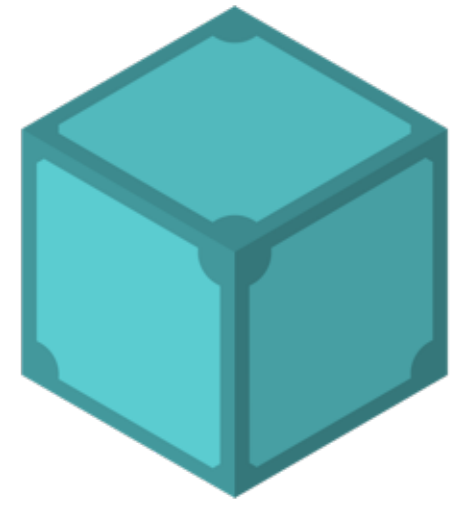


UCAN Decentralize Auth *Everywhere*

Commons



Cloud & Edge

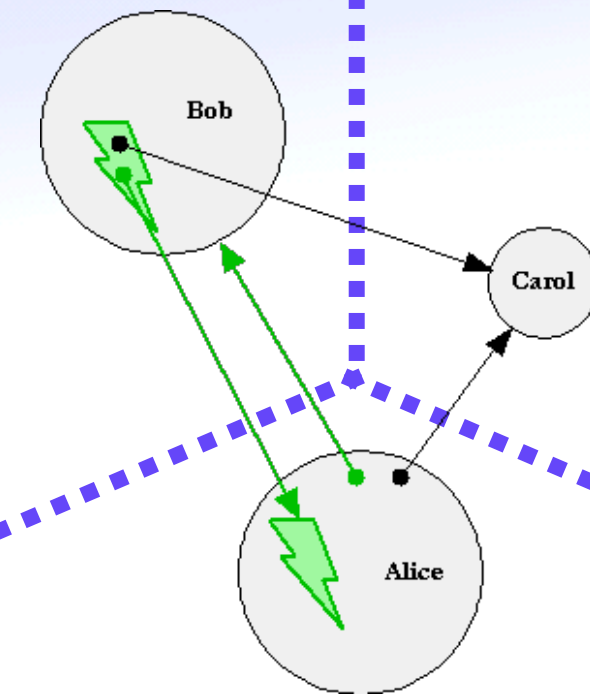
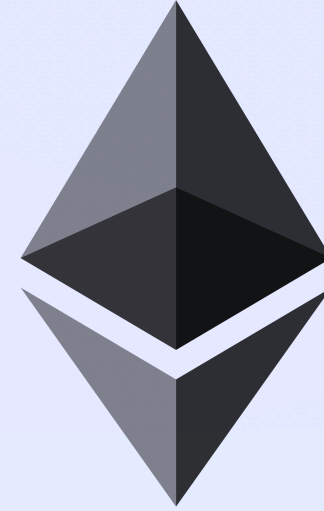
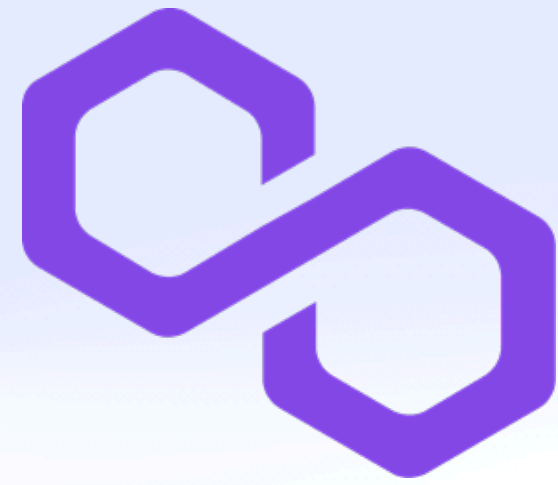


Far Edge

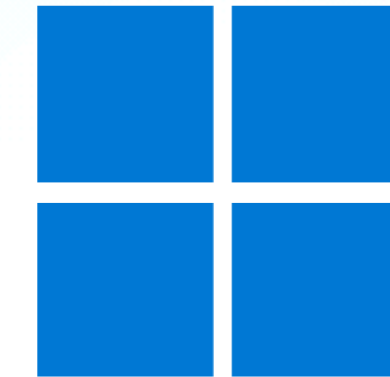
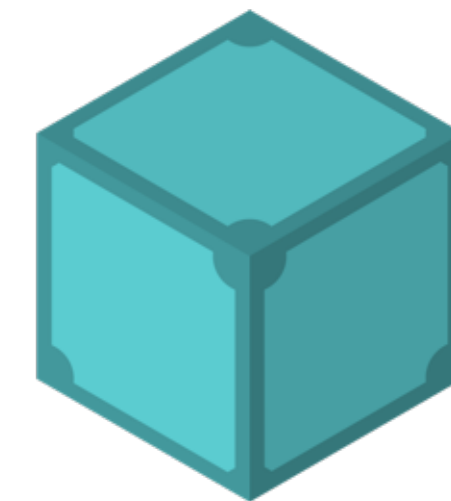


UCAN Decentralize Auth *Everywhere*

Commons



Cloud & Edge



Far Edge



UCAN Decentralize Auth

Open Protocols Everywhere

UCAN Decentralize Auth

Open Protocols Everywhere

Compute 

Data 

Auth 

UCAN Decentralize Auth

Open Protocols Everywhere

Compute 

Data 

Auth 

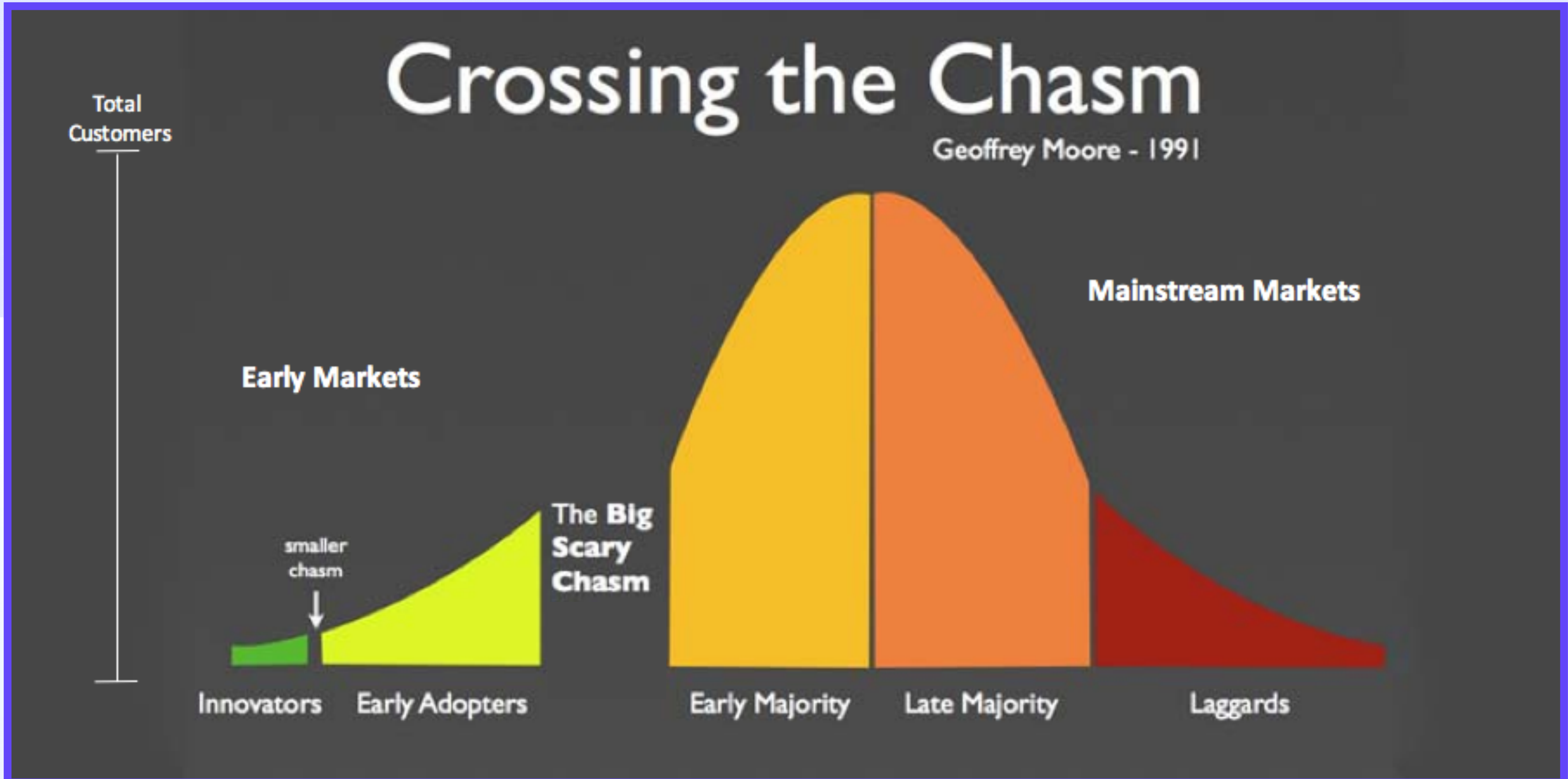
UCAN Decentralize Auth

How to Power a New Internet



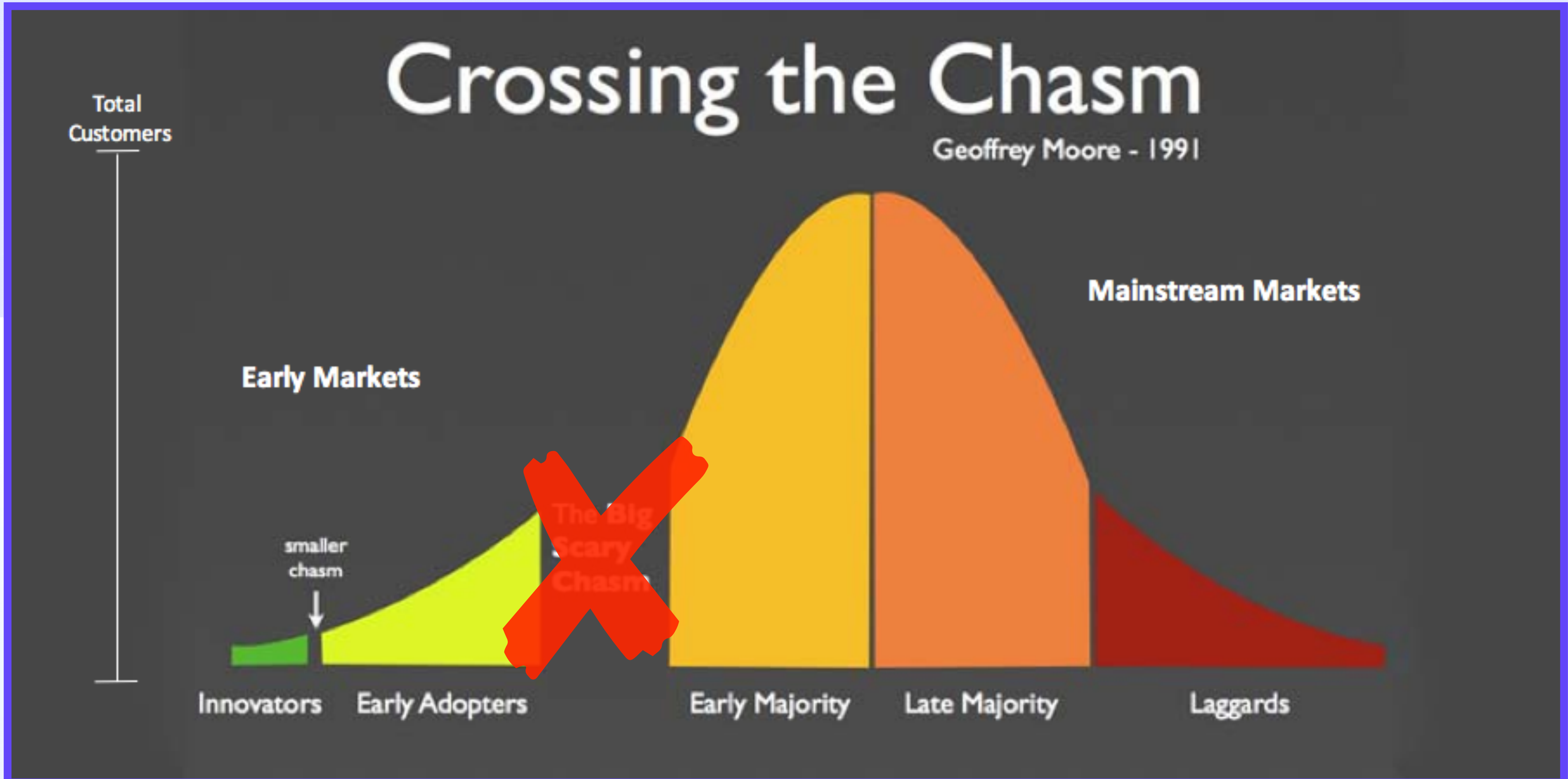
How to Power a New Internet 🌐

Adoption & Audience



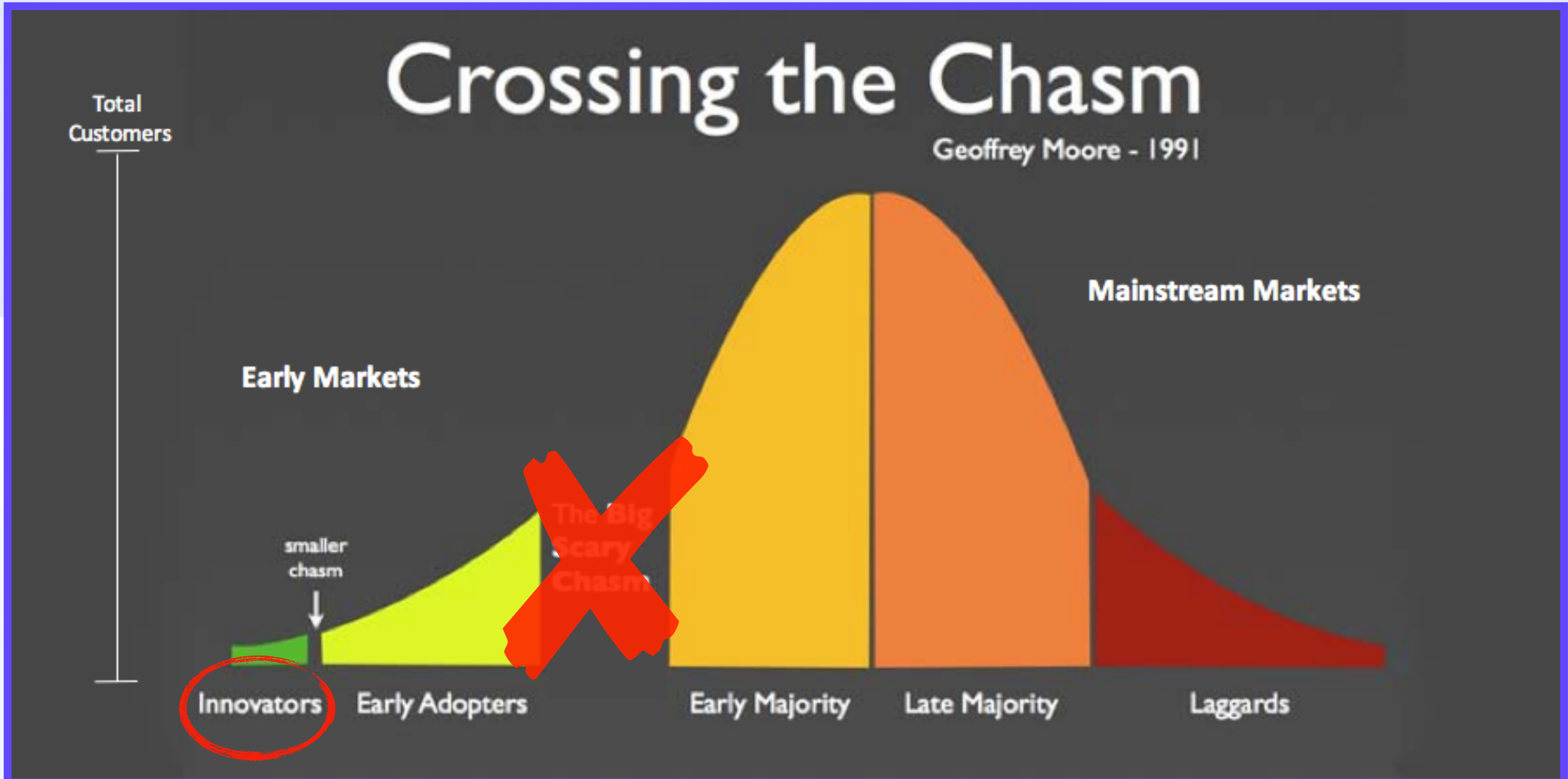
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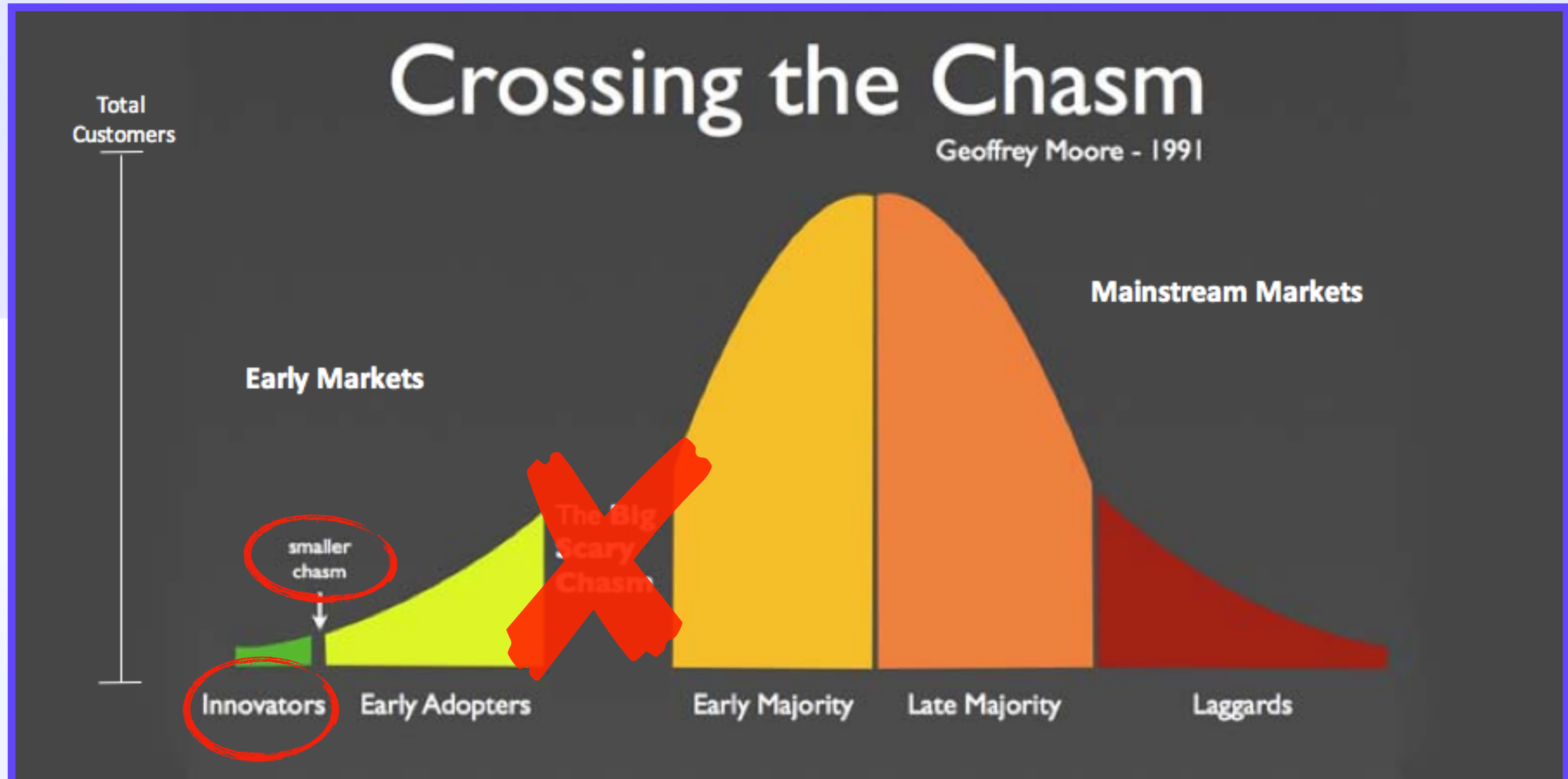
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Adoption & Audience



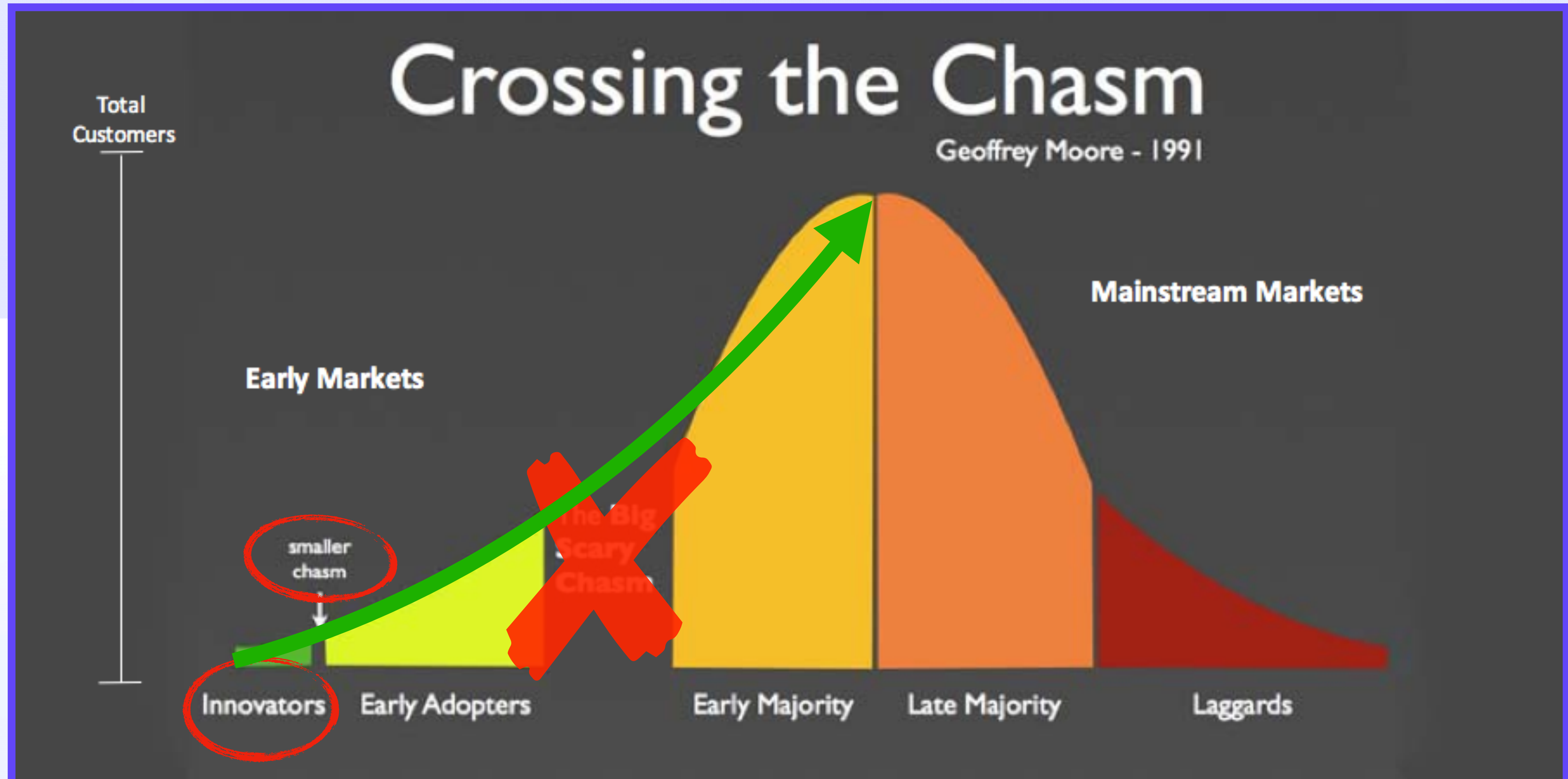
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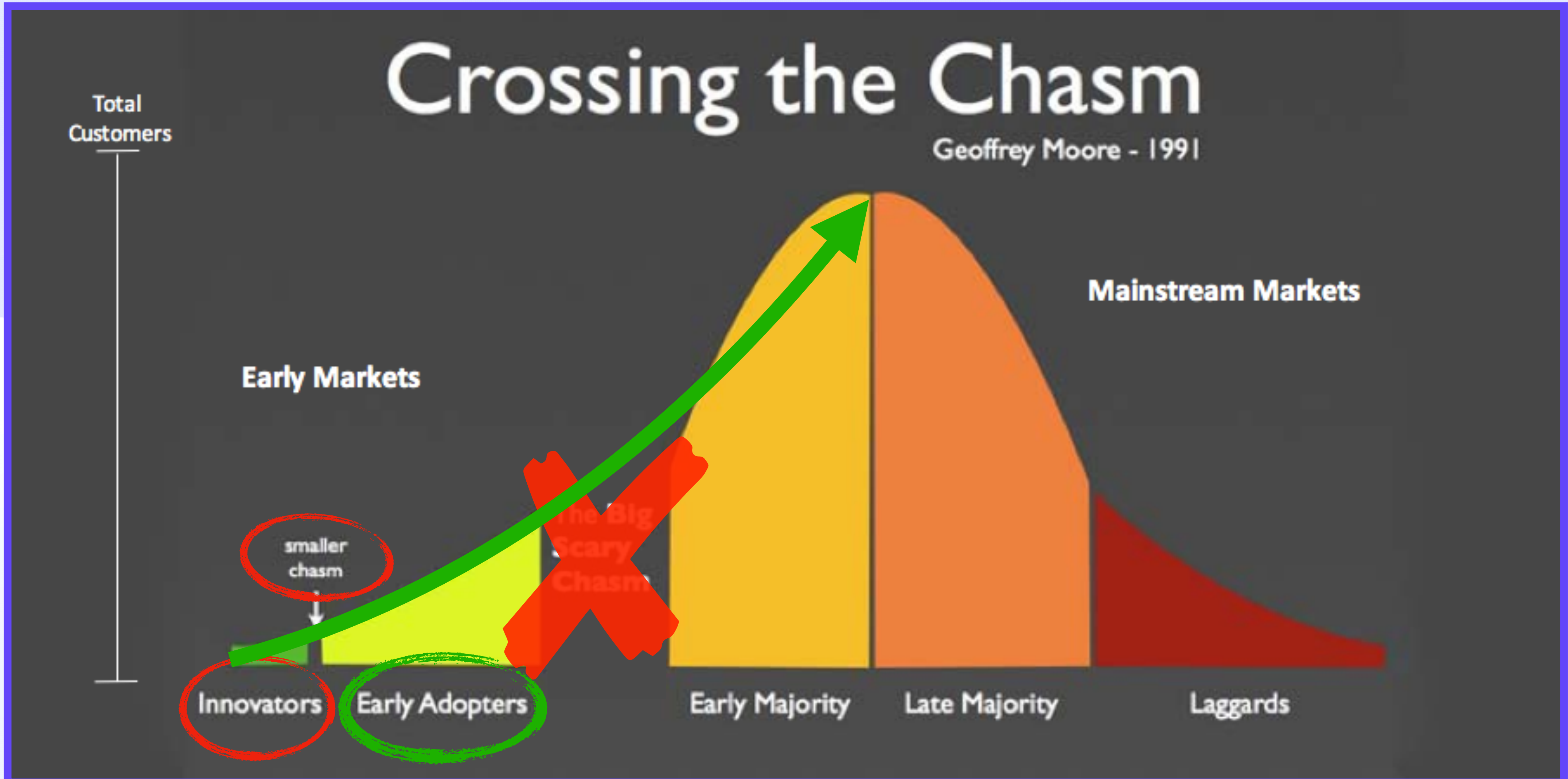
How to Power a New Internet 🌐

Adoption & Audience



How to Power a New Internet 🌐

Adoption & Audience



How to Power a New Internet 🖱️

DX & UX

How to Power a New Internet 

DX & UX

Web3 UX is ***too hard*** ~~for many users~~

How to Power a New Internet 

DX & UX

Web3 UX is ***too hard*** for ***users***

FULL STOP

How to Power a New Internet 📡

Move the Needle

How to Power a New Internet 

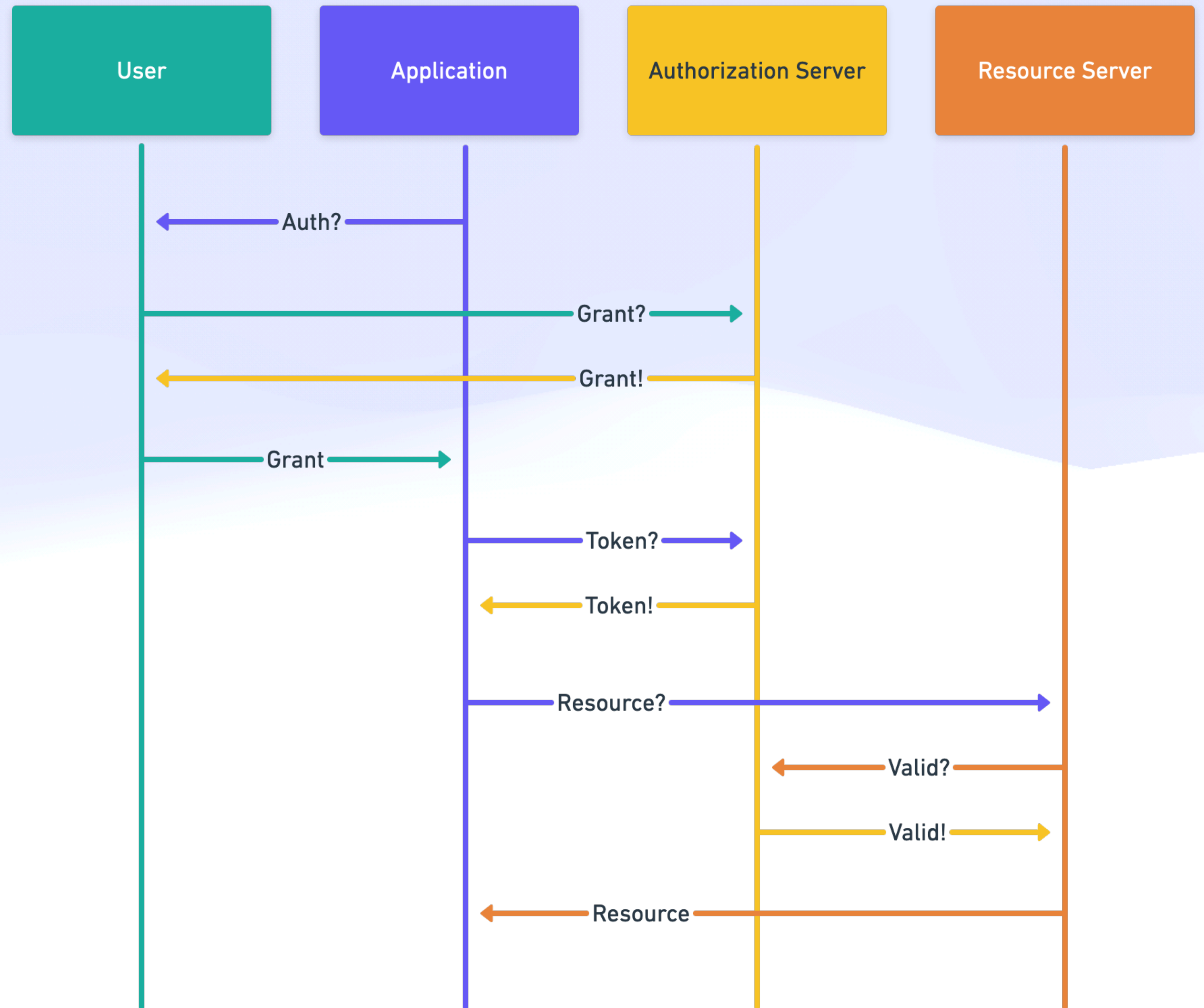
Move the Needle

Realpolitik

Easier, as secure, & more open than:
OAuth, X.509, SAML, Macaroon,
MetaMask, WalletConnect, etc

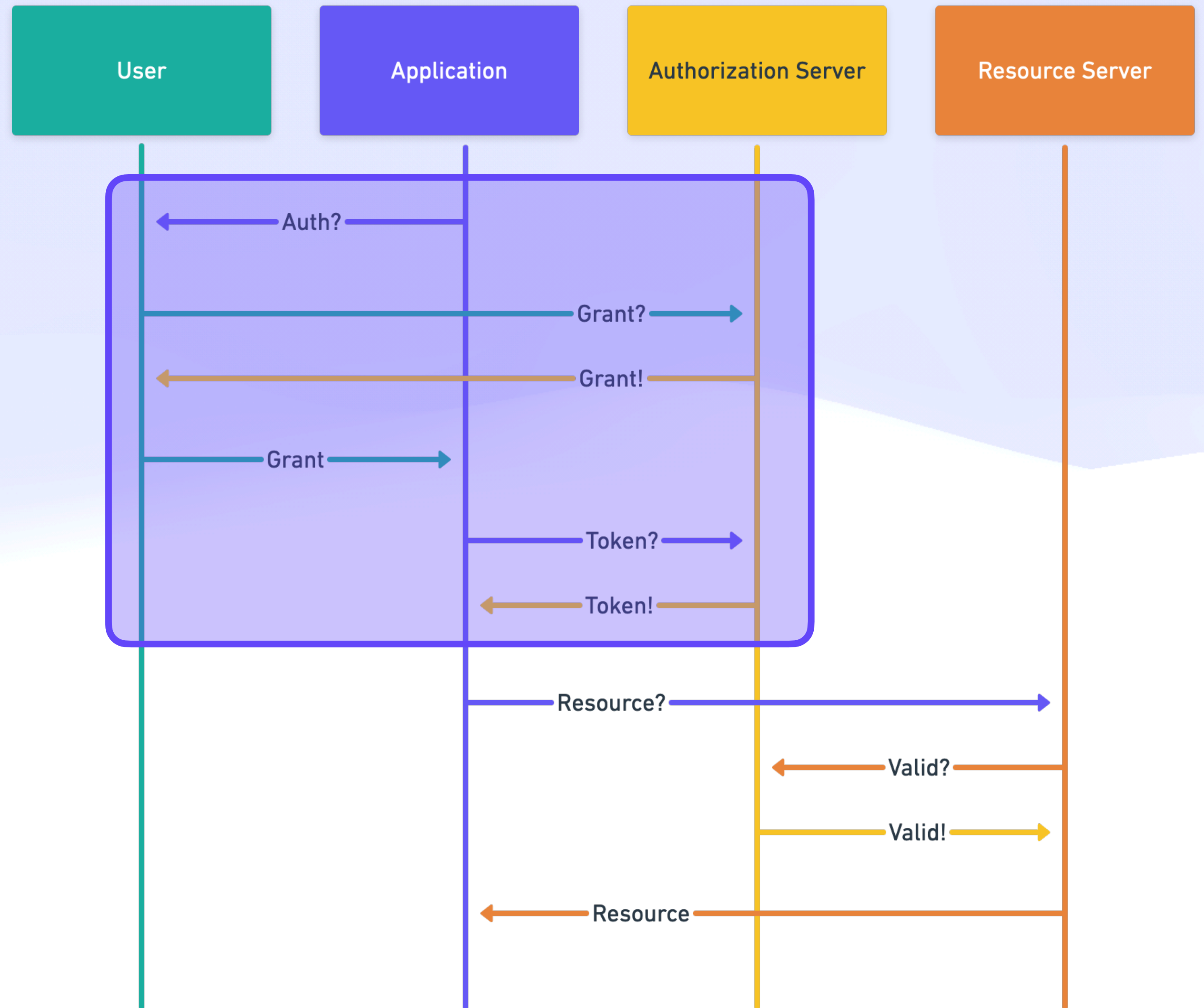
How to Power a New Internet

OAuth Sequence



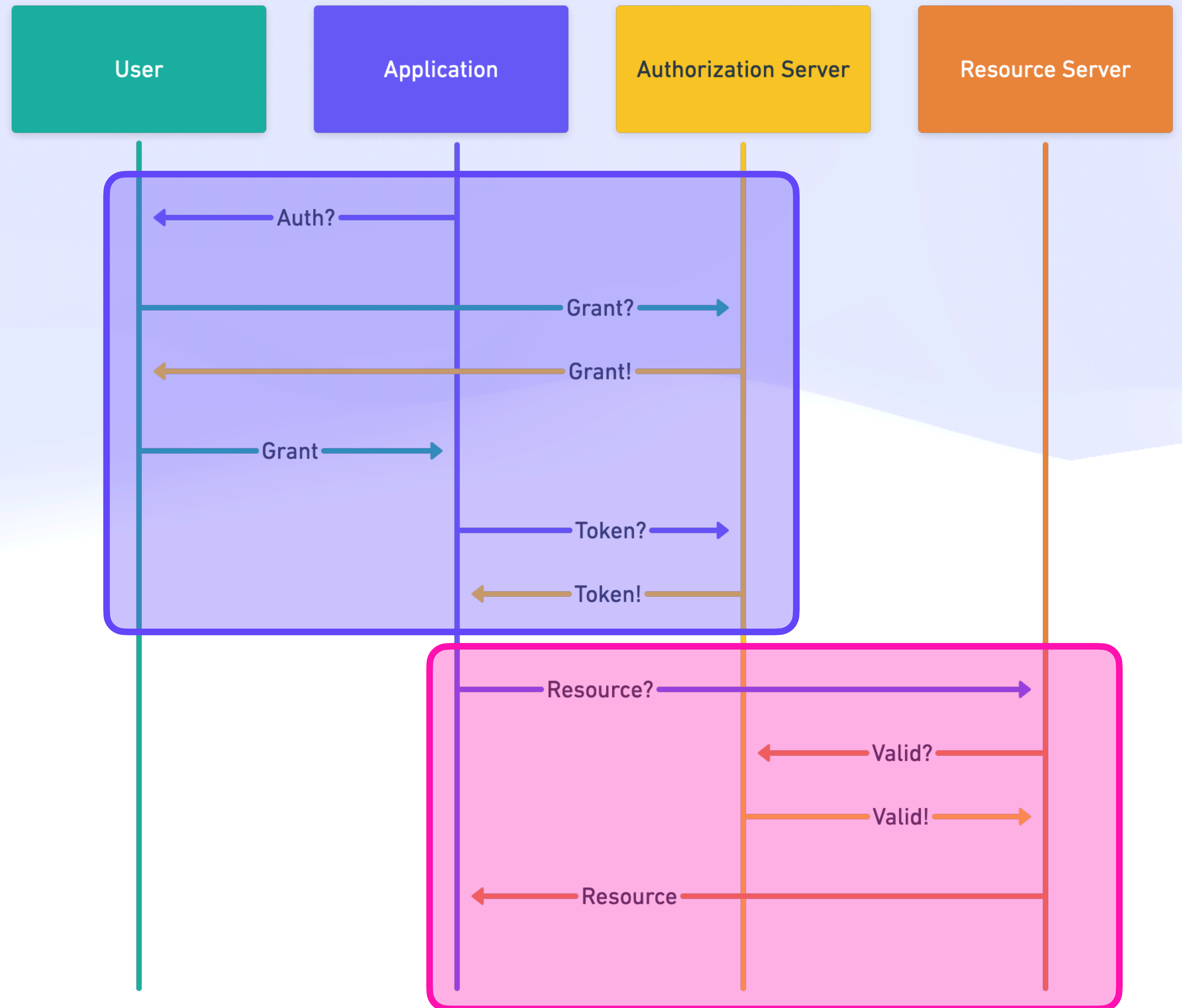
How to Power a New Internet

OAuth Sequence



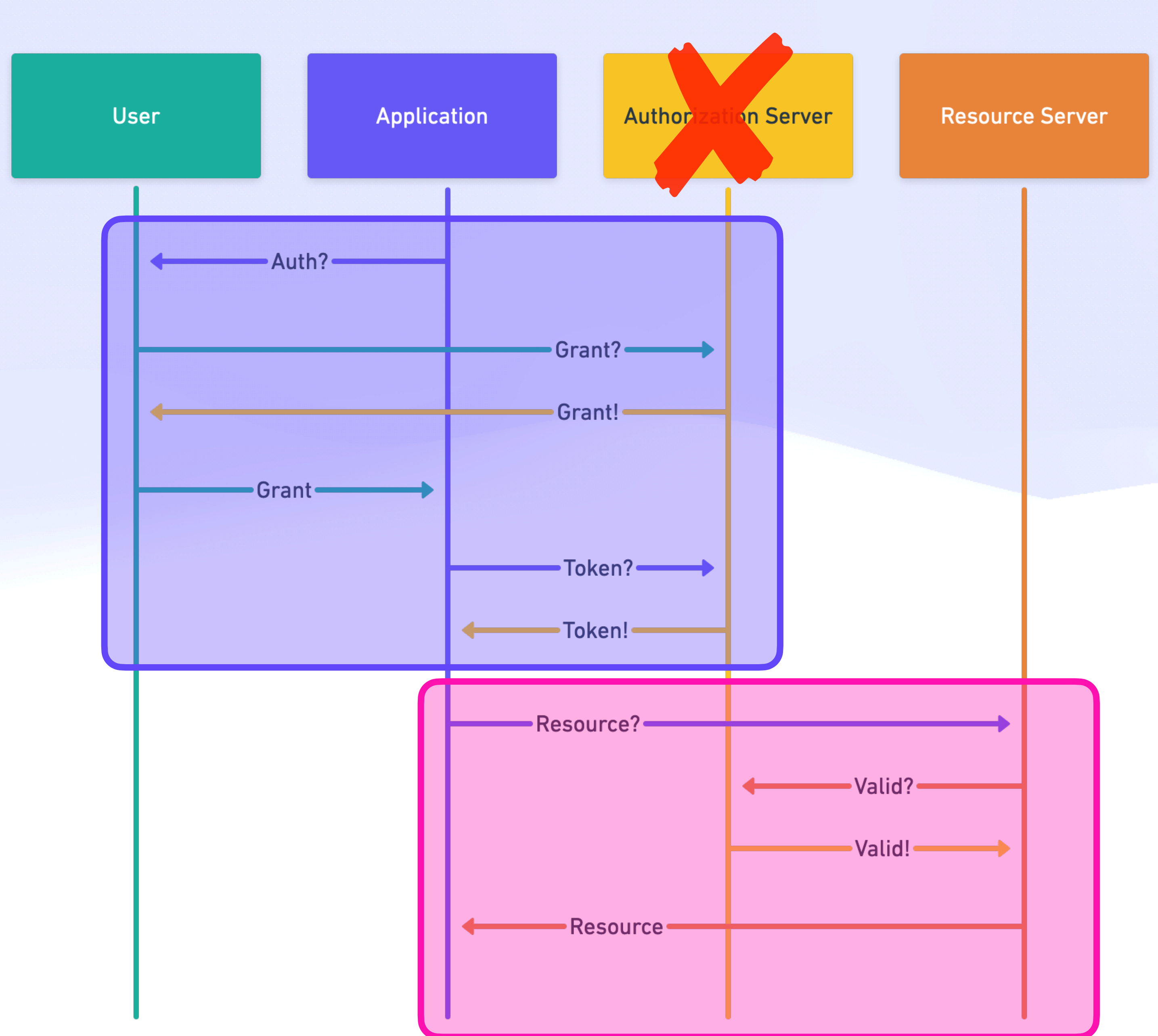
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OAuth Sequence



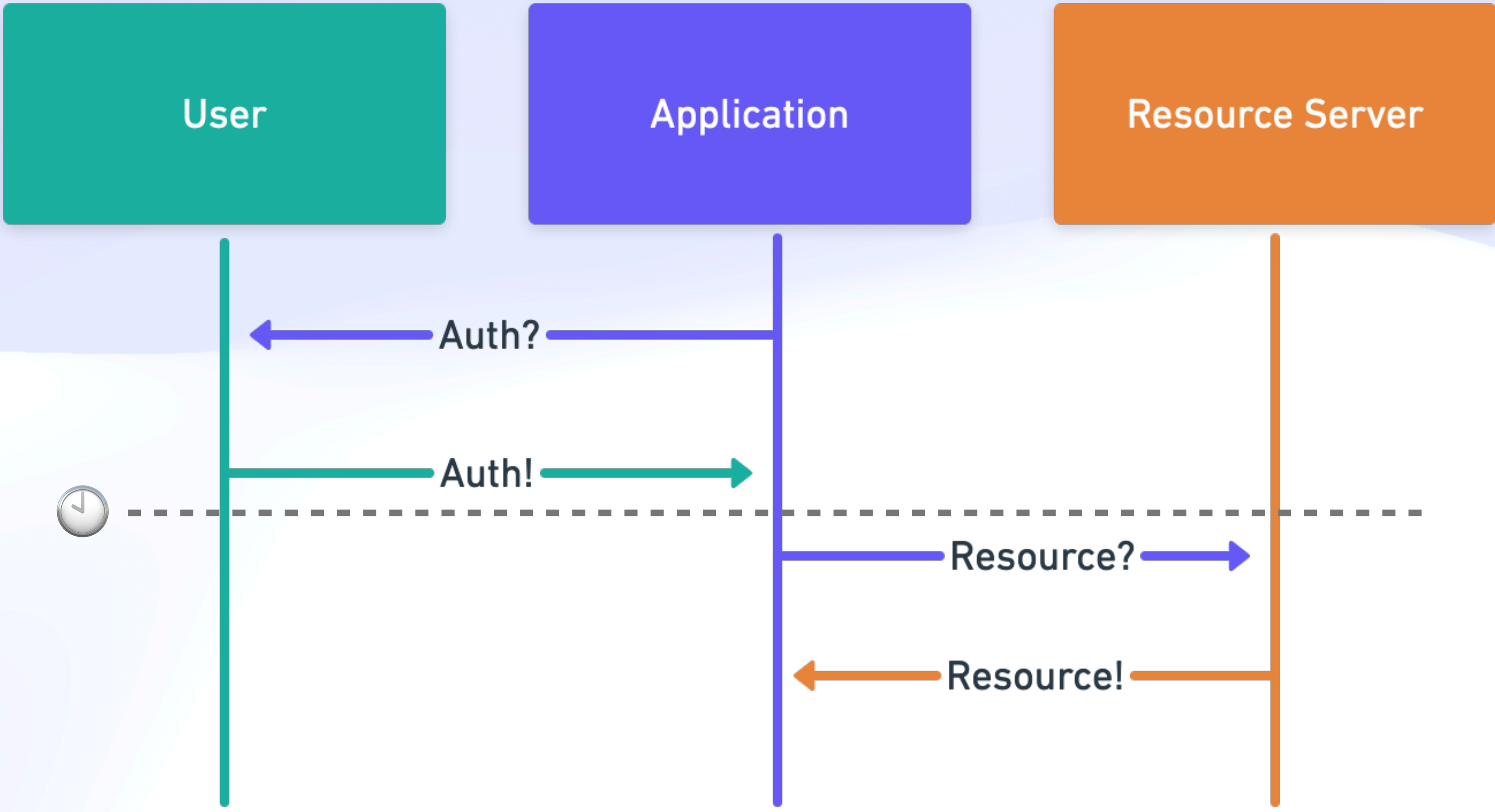
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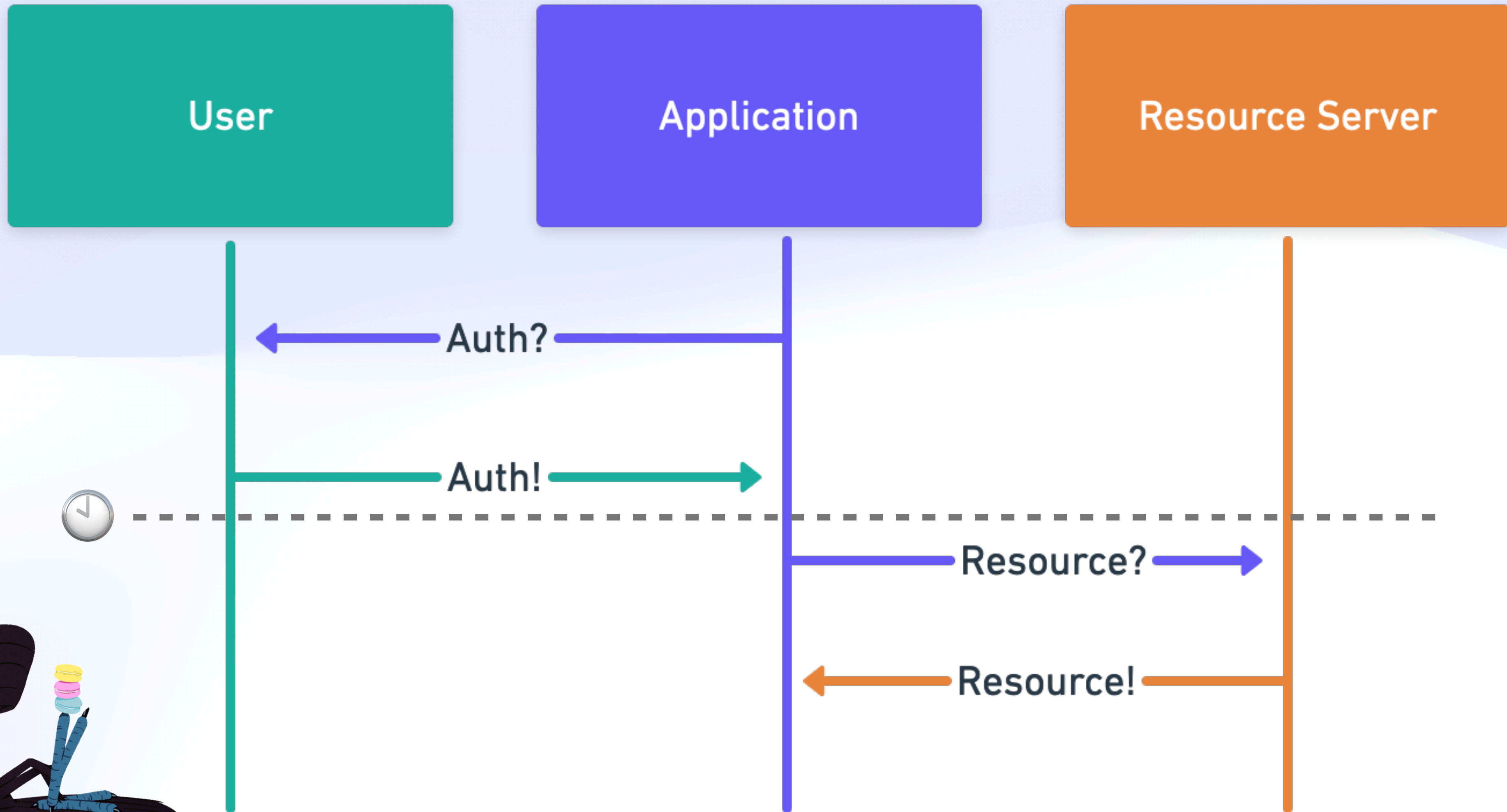
How to Power a New Internet

UCAN Sequence



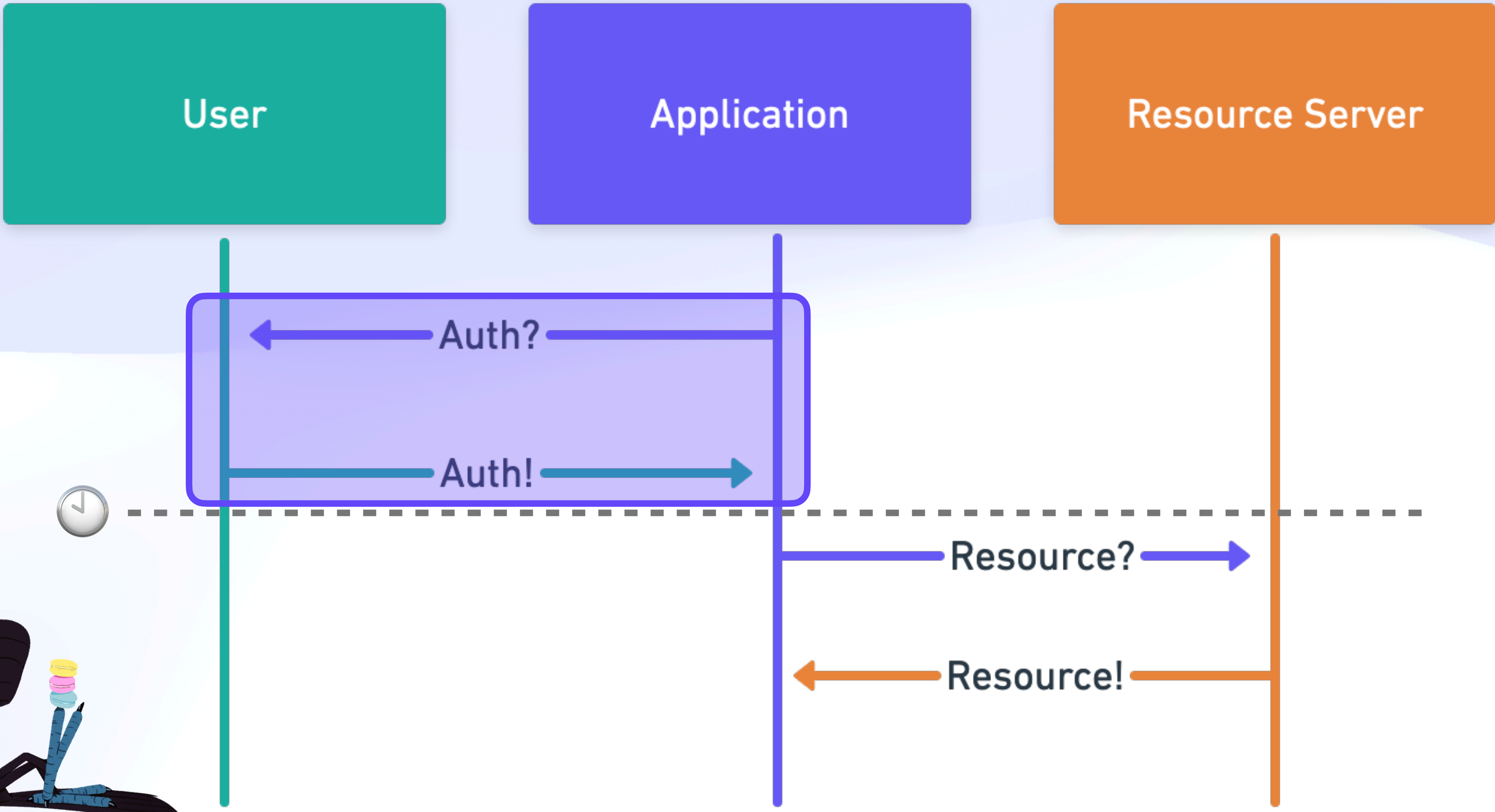
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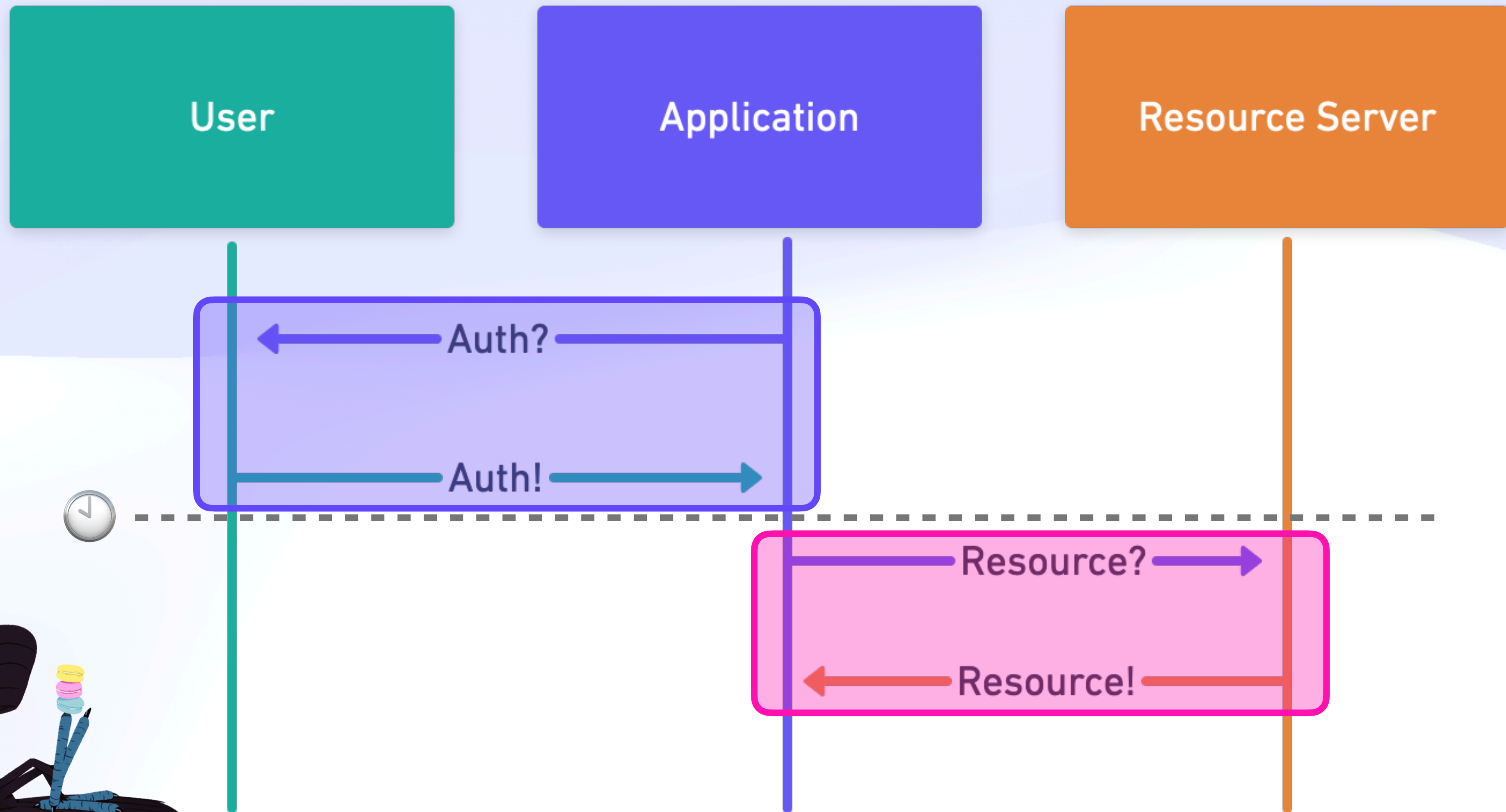
How to Power a New Internet

UCAN Sequence



How to Power a New Internet

UCAN Sequence



How to Power a New Internet 

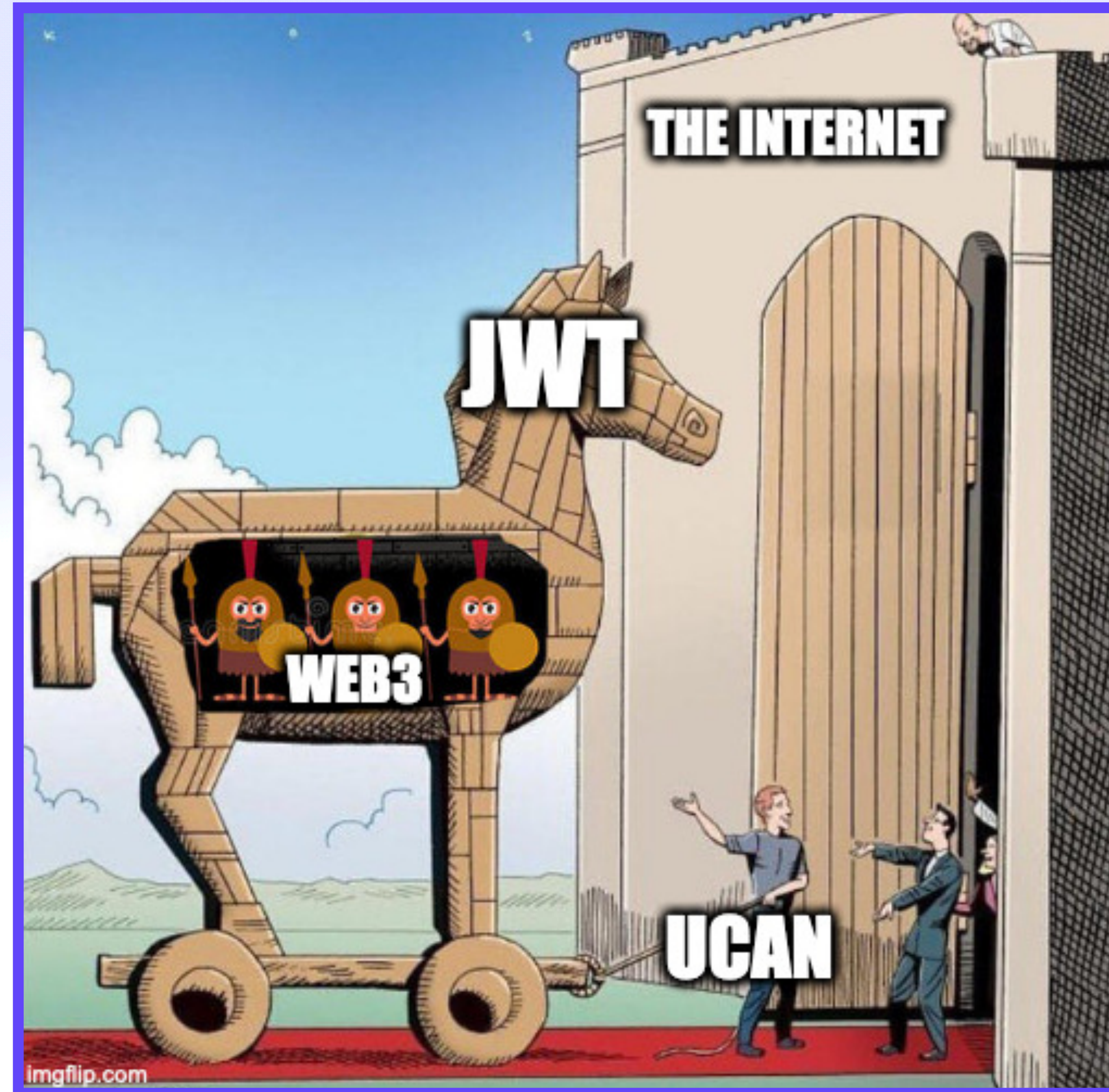
Project Approach

How to Power a New Internet 🌐

Project Approach

Be a Trojan Horse

Build on widely supported, familiar, well-understood standards & tools



How to Power a New Internet 

Tools For Mere Mortals

HTTP Header

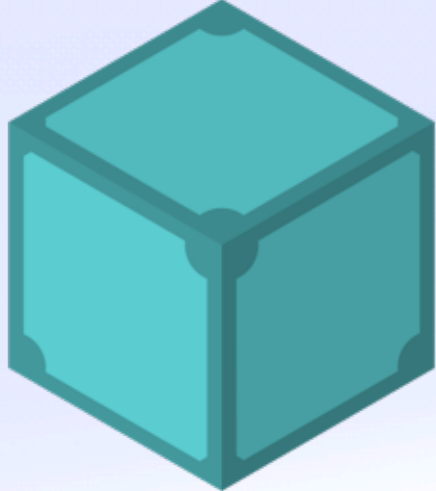
```
"Authorization: Bearer <ucan>"
```

UCAN Decentralize Auth

Case Study: IPNS

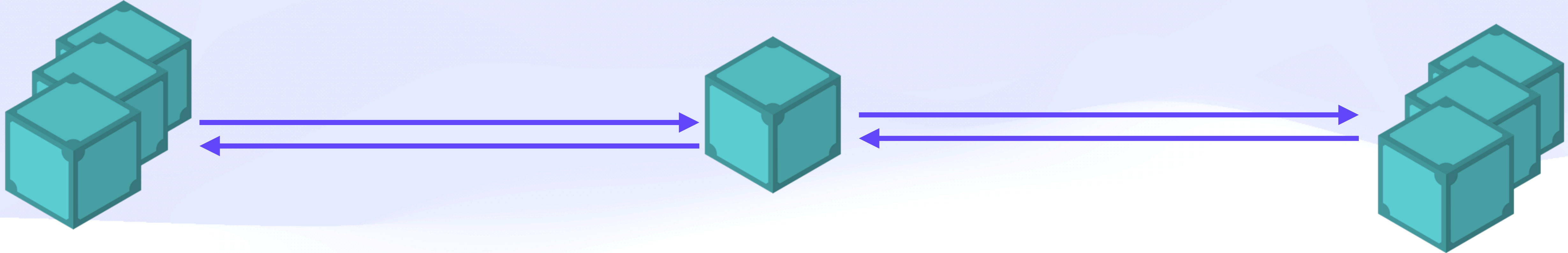
UCAN Decentralize Auth

Case Study: IPNS



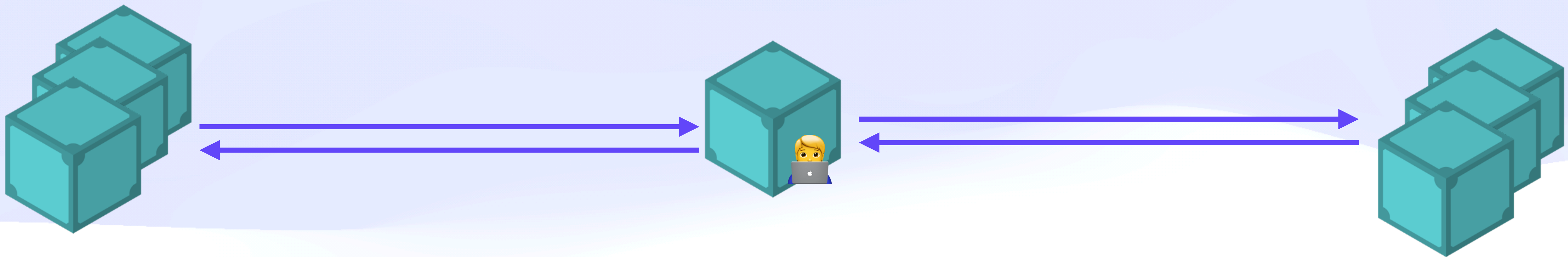
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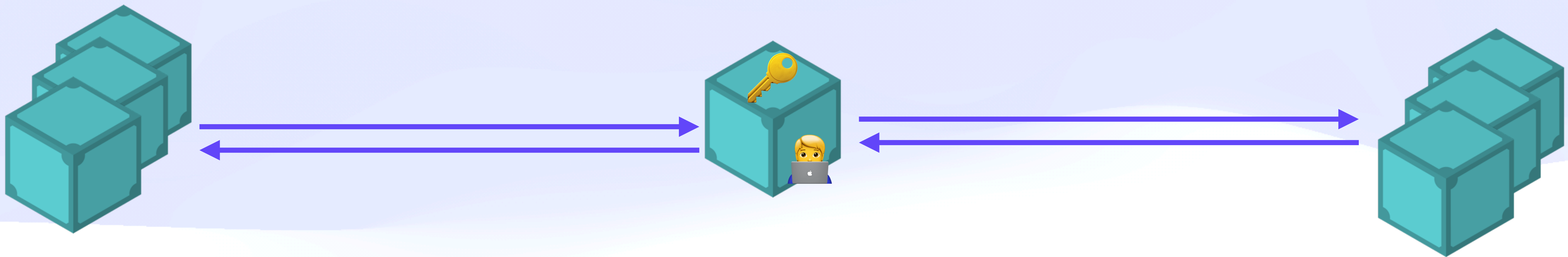
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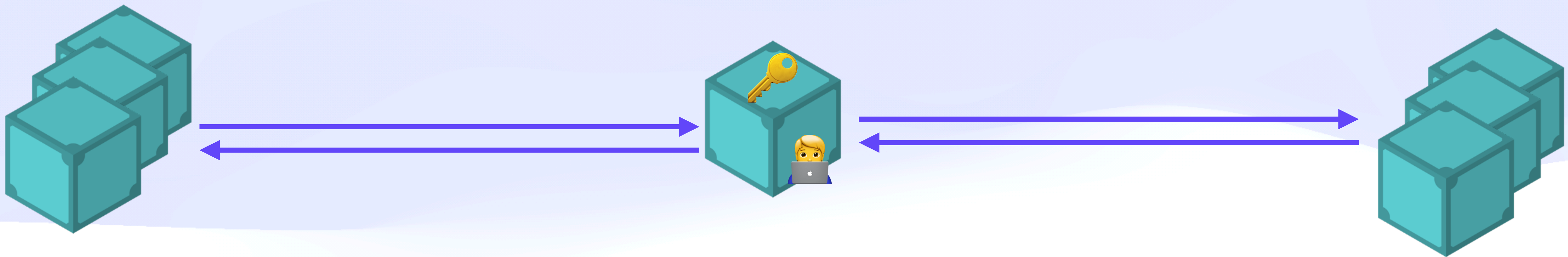
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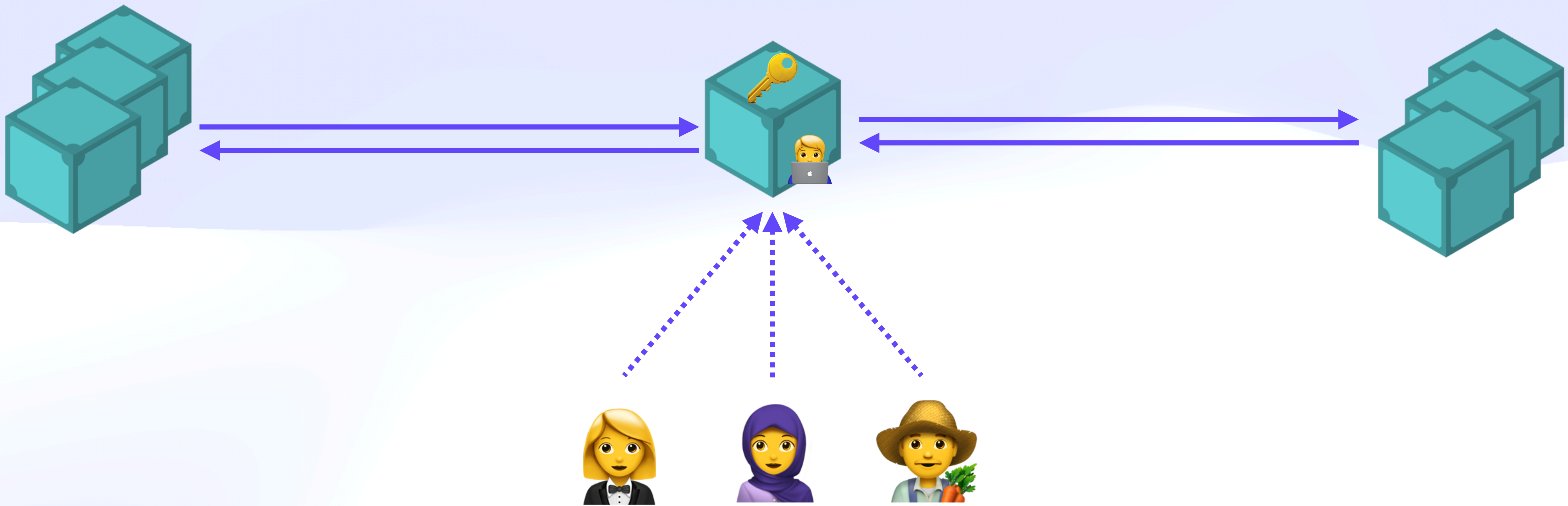
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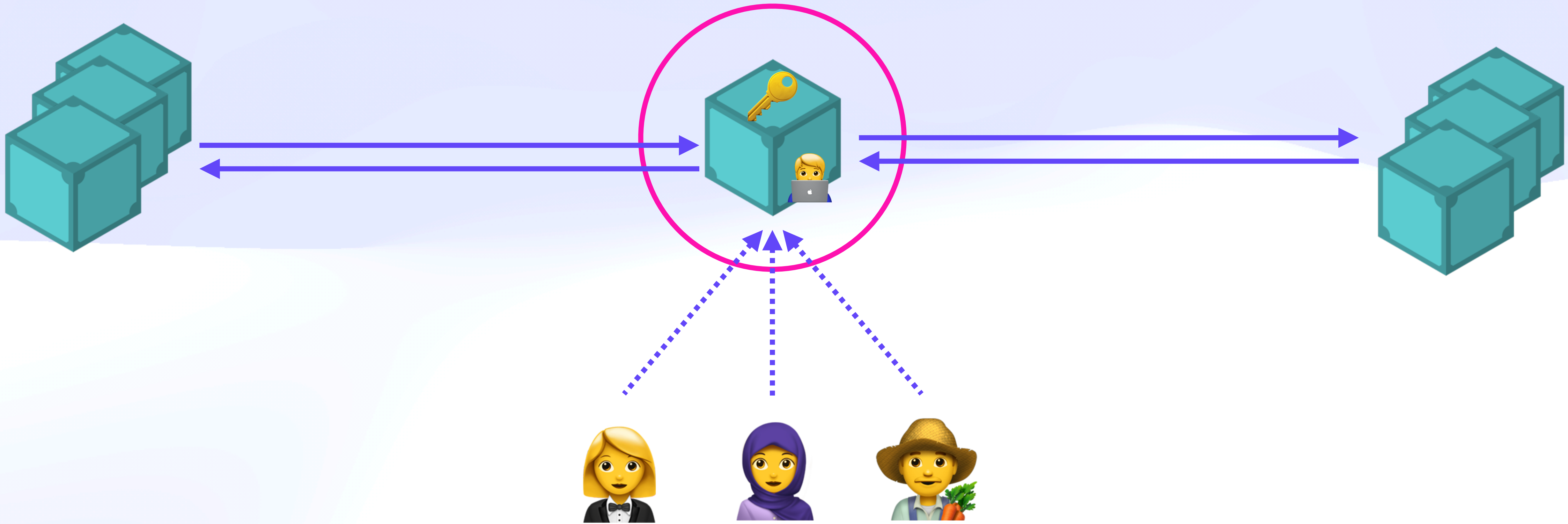
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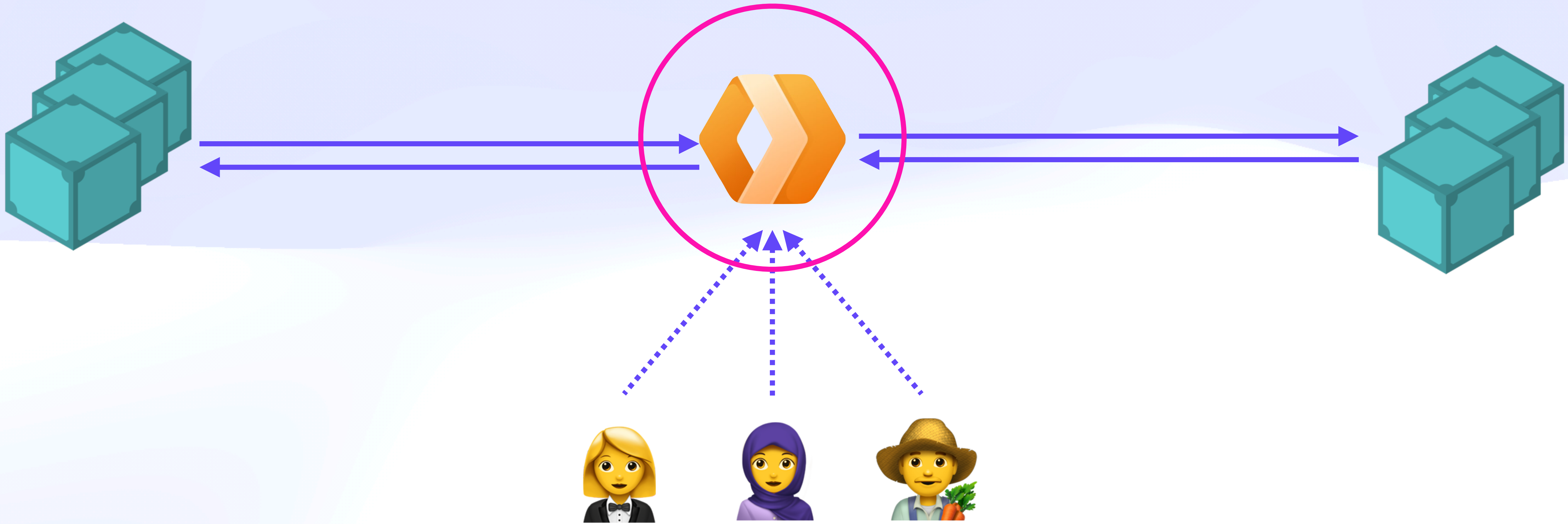
UCAN Decentralize Auth

Case Study: IPNS



UCAN Decentralize Auth

Case Study: Apps



UCAN Decentralize Auth

Case Study: Apps



Capabilities 101



Capabilities 101

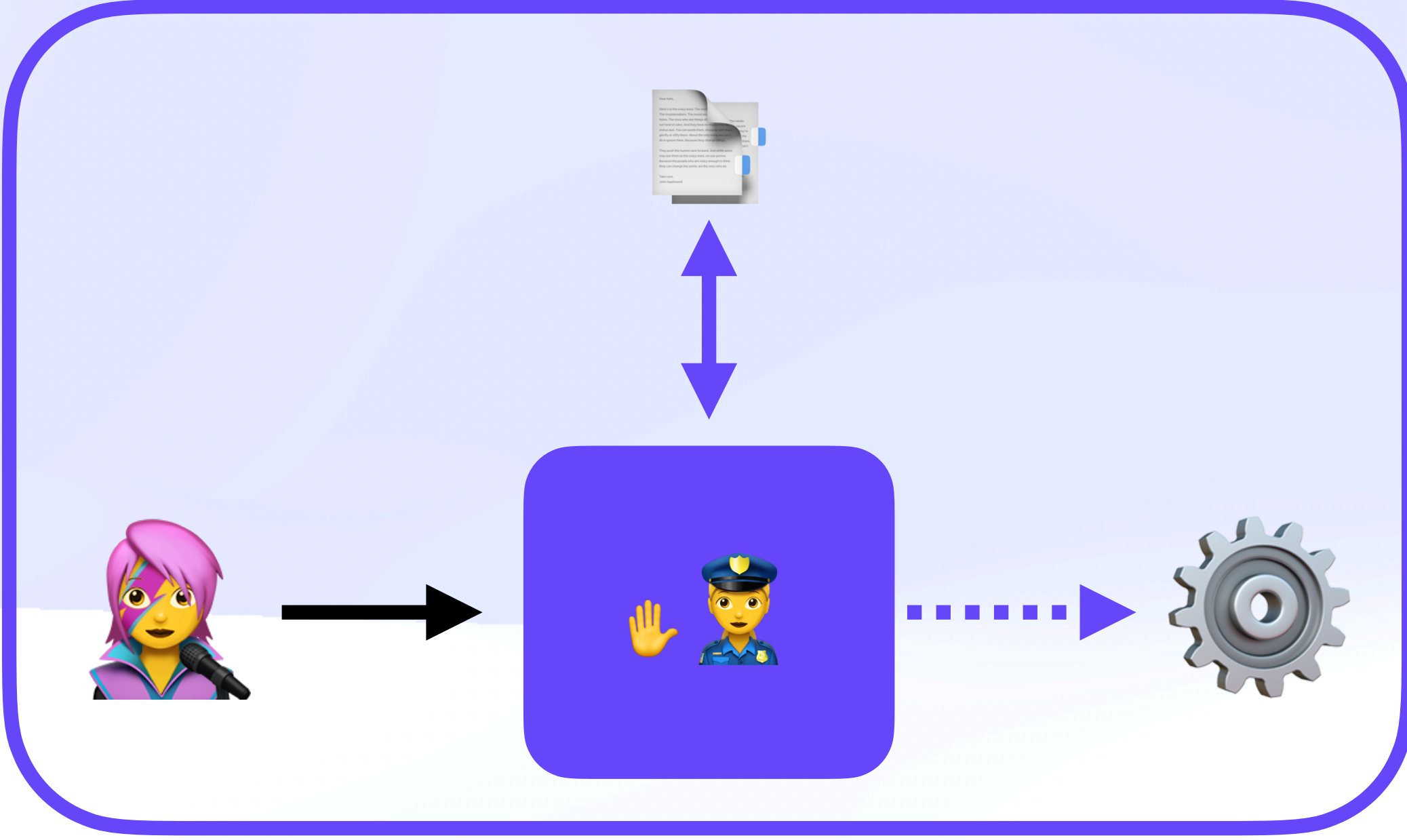


Auth Models

Capabilities 101 

Auth Models

ACLs

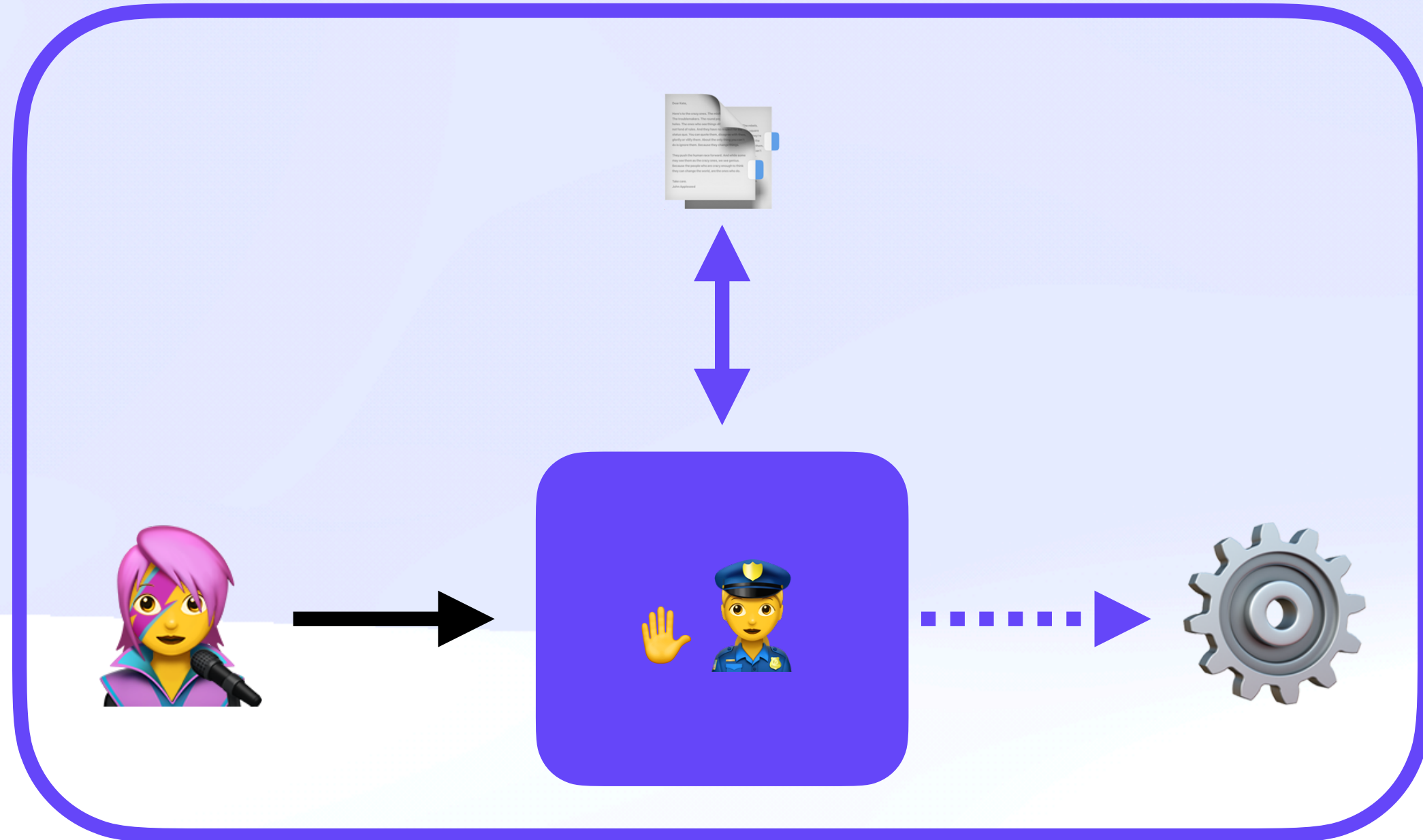


Designed for sharing a terminal (one)

Capabilities 101

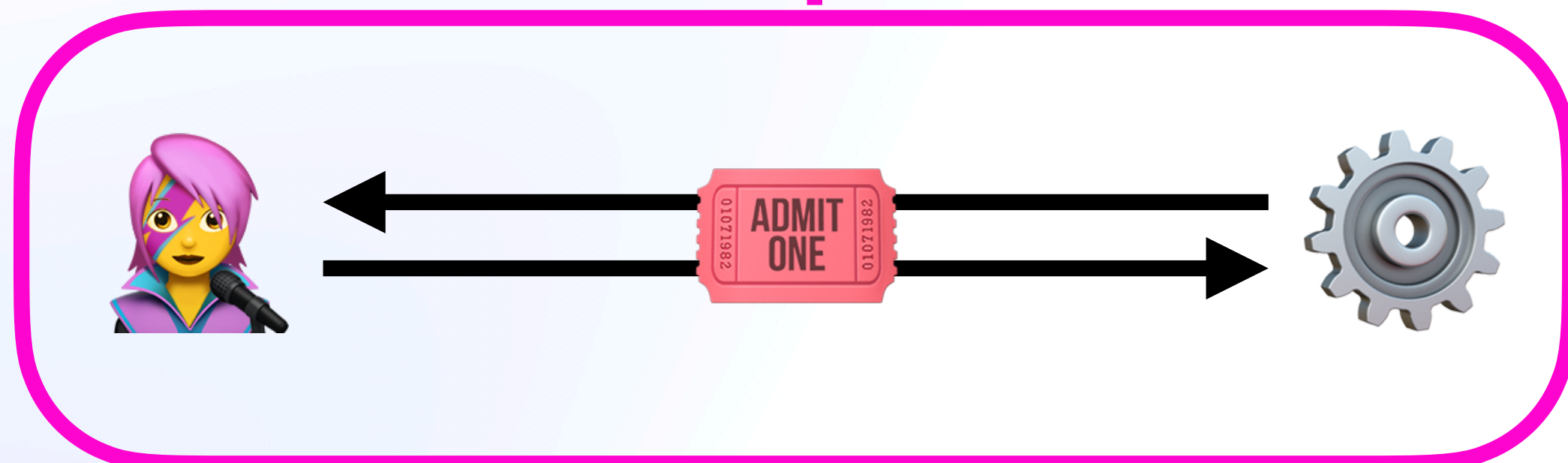
Auth Models

ACLs



Designed for sharing a terminal (one)

Caps



Designed for networking (many)

Capabilities 101 

ACLs: Stateful Auth

Capabilities 101 

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Capabilities 101 

ACLs: Stateful Auth

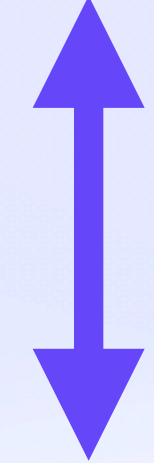


Capabilities 101 

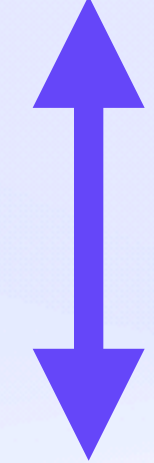
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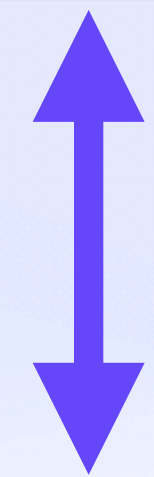
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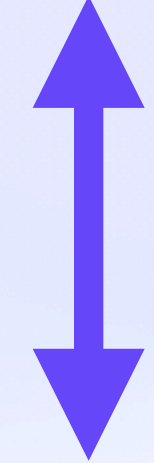
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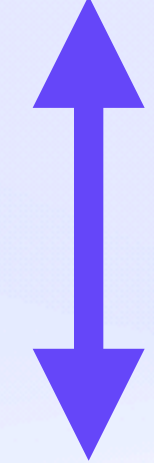
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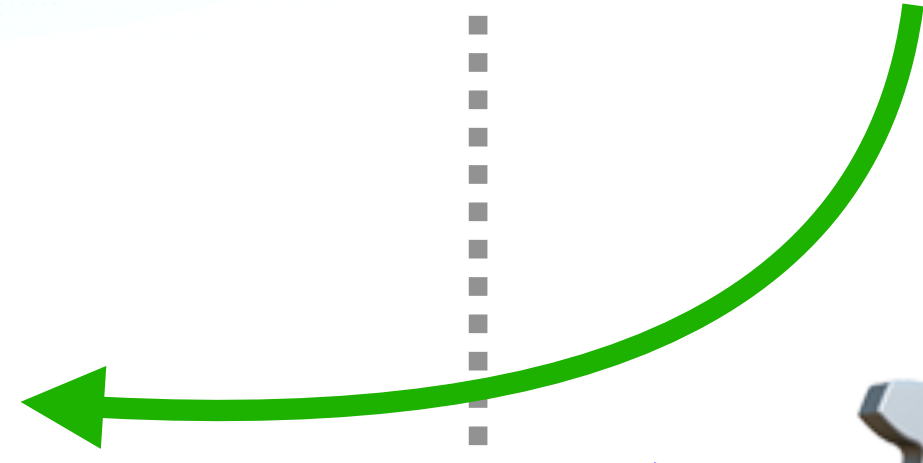
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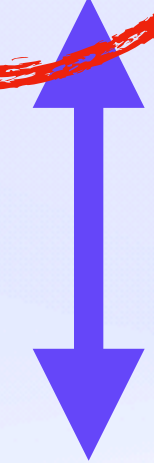
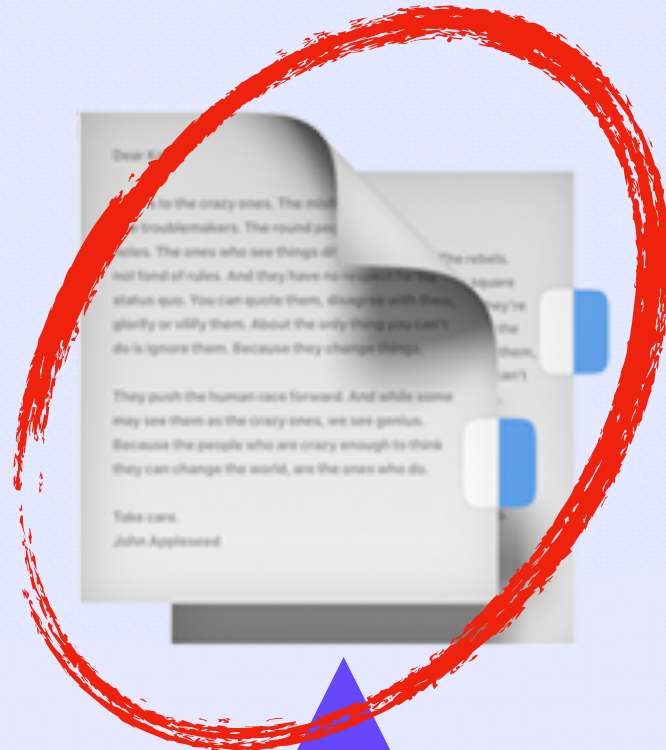


In control

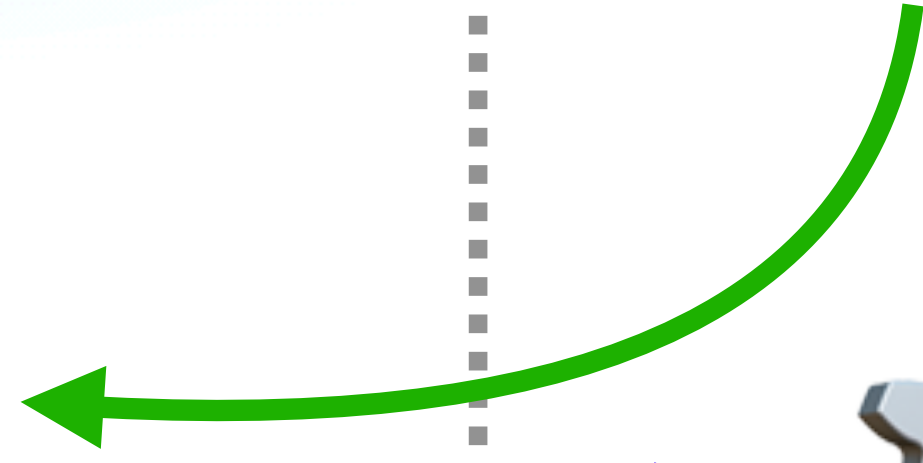


Not in control

ACLs: Stateful Auth

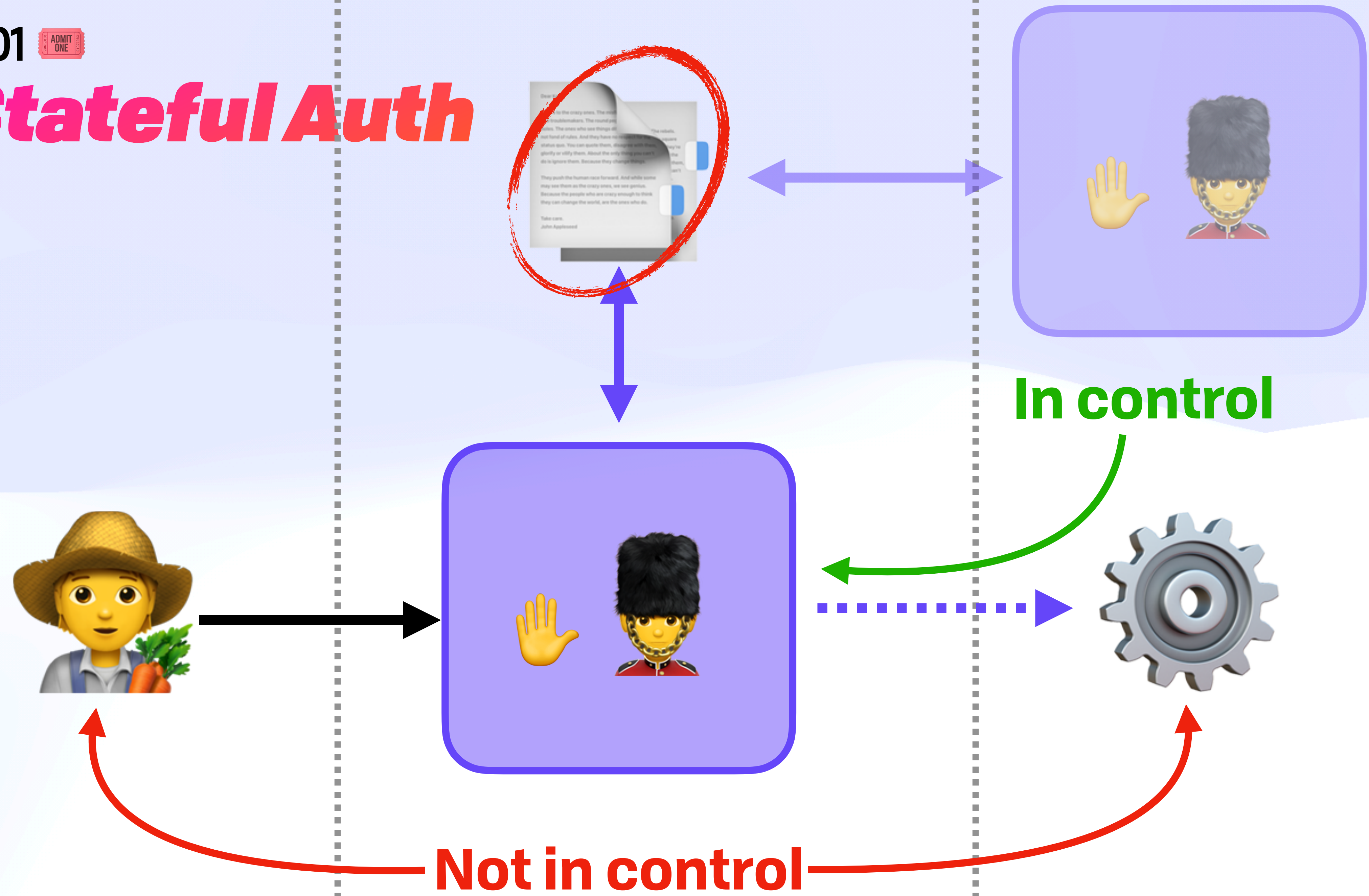


In control

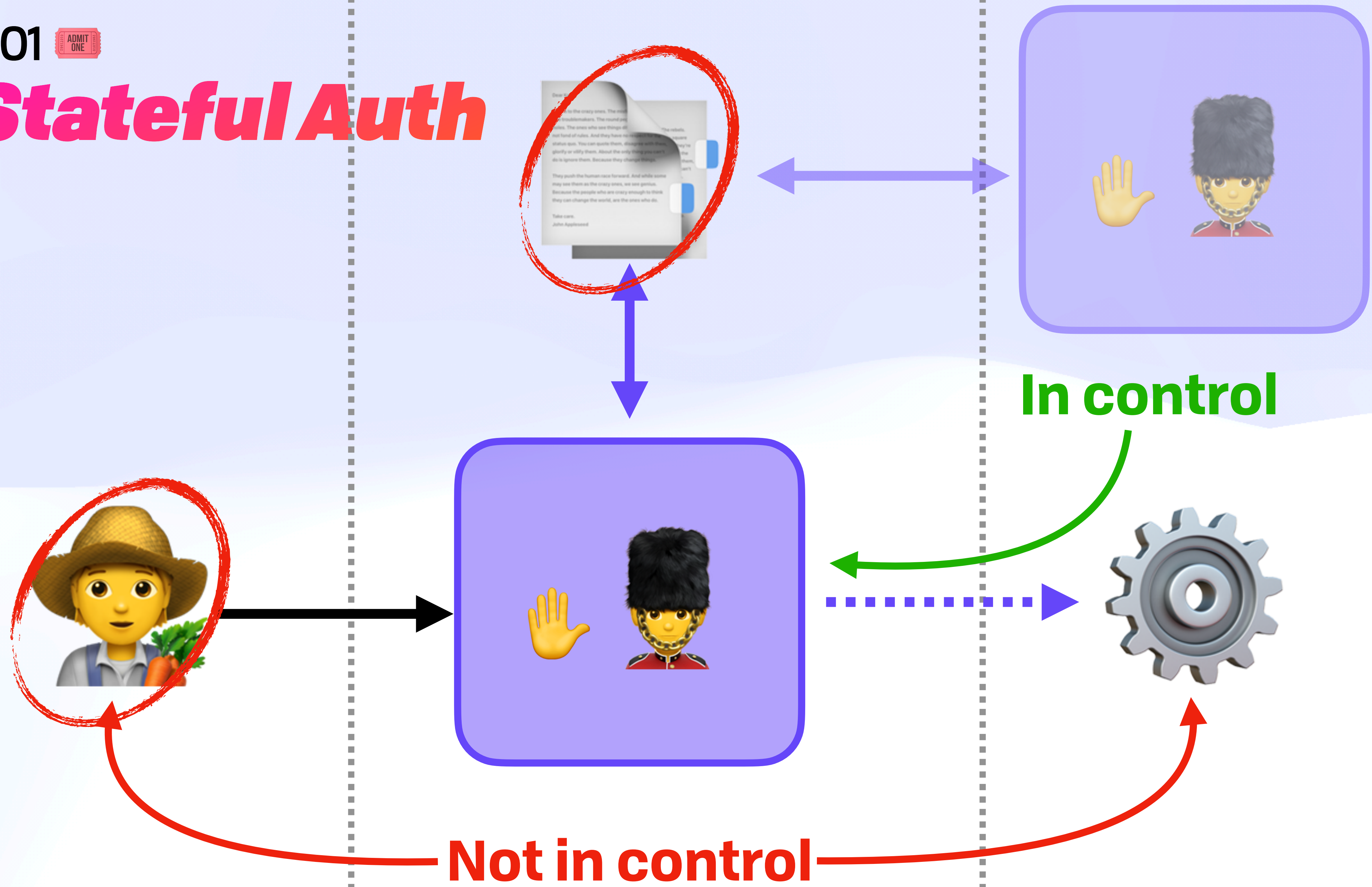


Not in control

ACLs: Stateful Auth



ACLs: Stateful Auth



PSA: ACLs Don't CRDT Well

RFP-004: Data laced with permissions: Decentralised access control in CRDTs

Brief description Conflict-free replicated data types (CRDTs) provide a framework for creating eventually consistent data types that can be shared amongst replicas and that guarantees liveness and monotonicity. To allow replica creators and owners to keep control over who has read and write access to a CRDT instance, we seek a decentralised Access control list (ACL) type that has typical ACL security properties and that, when applied to a CRDT instance, still guarantees CRDT safety (that it provably converges to the same value on all replicas).

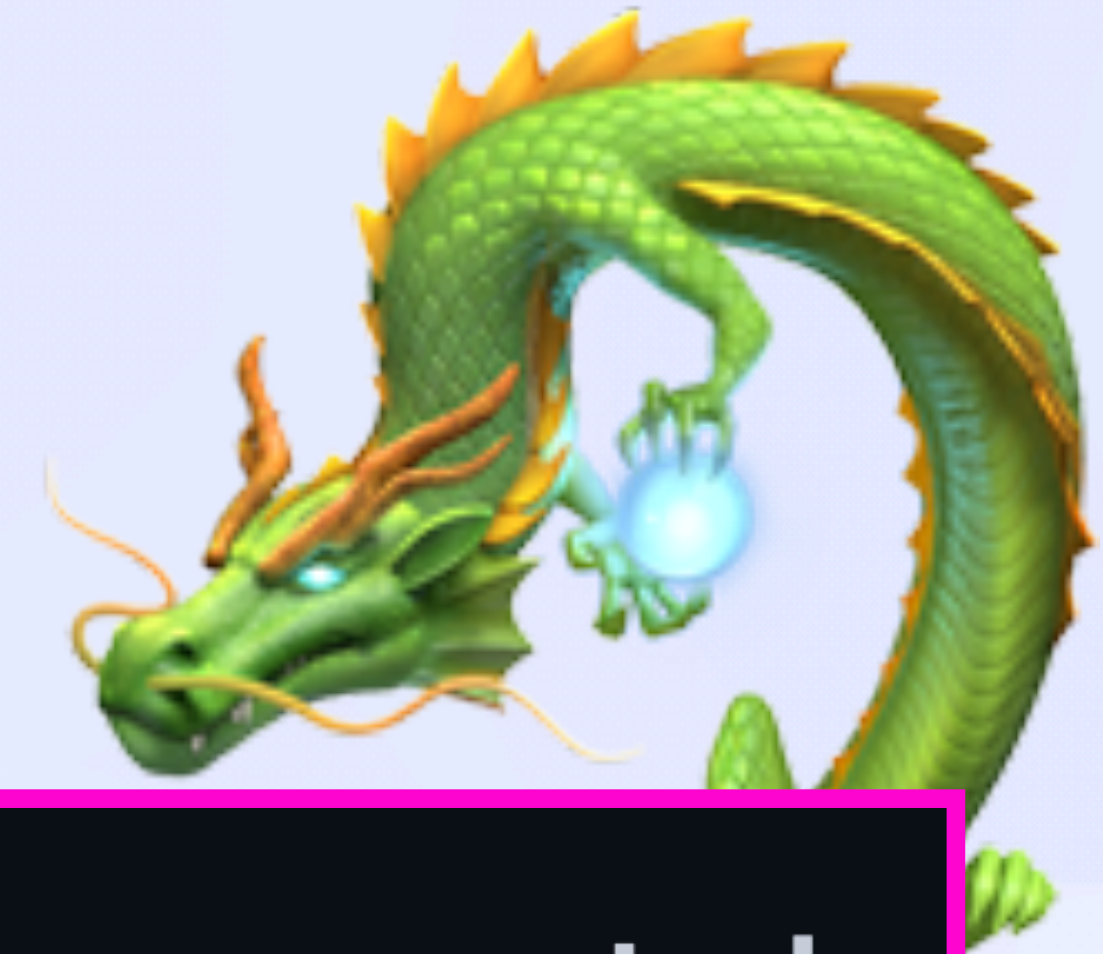
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Capabilities 101 

Caps: Stateless Auth

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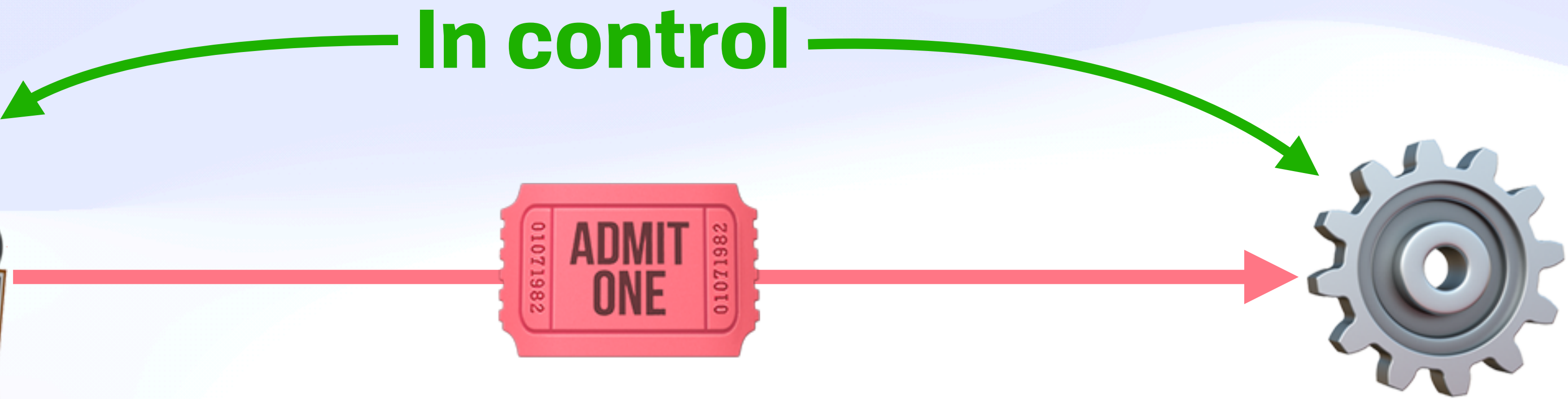


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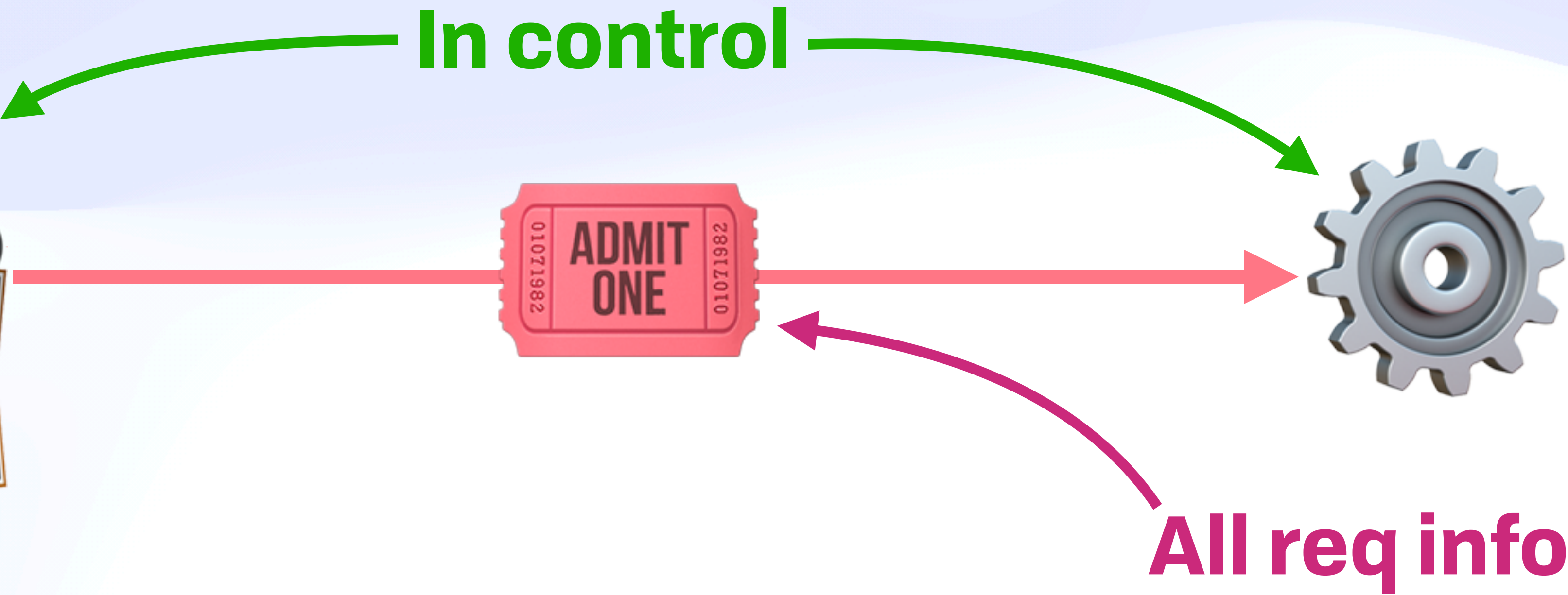
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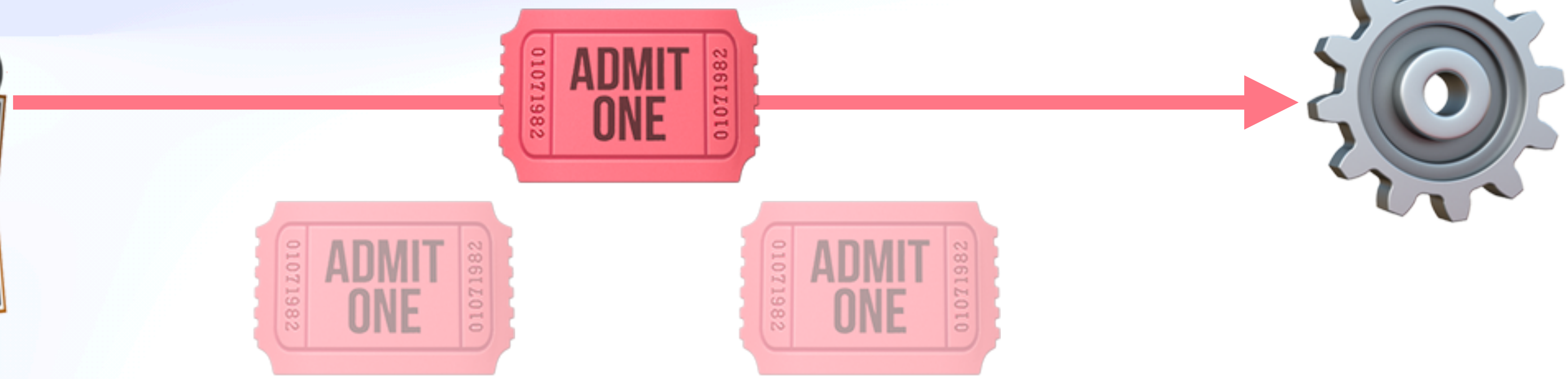
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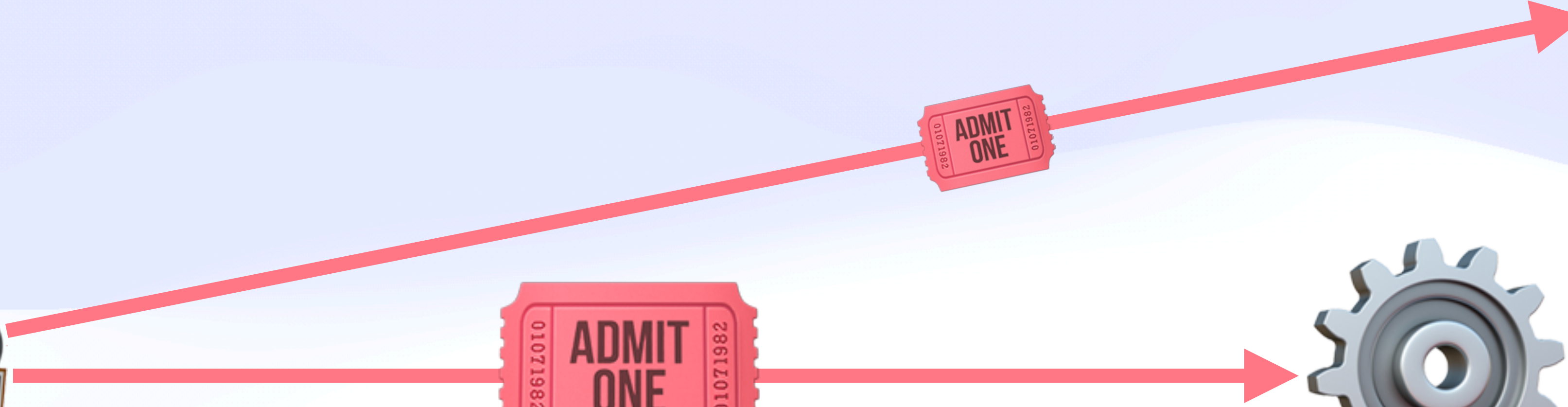
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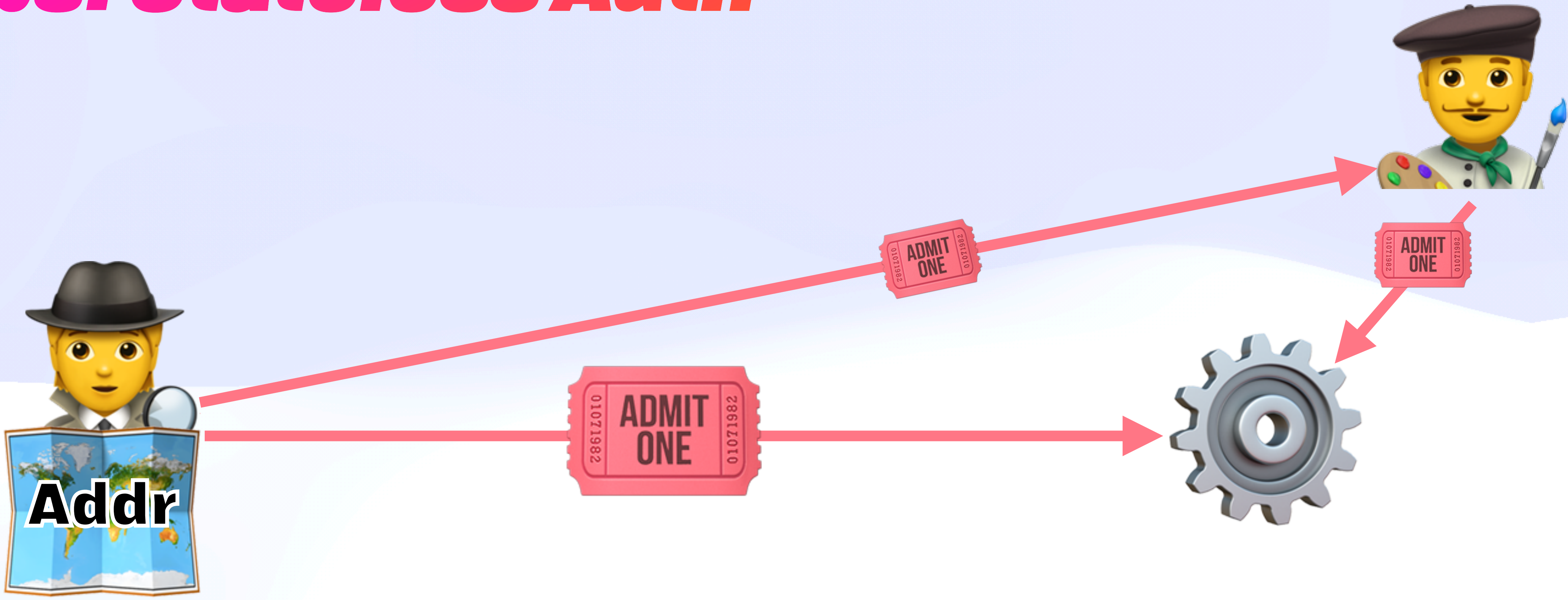


Capabilities 101 

Caps: Stateless Auth



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Capabilities 101 

Composition — "Amplification"

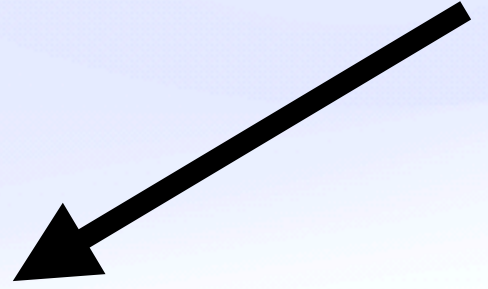
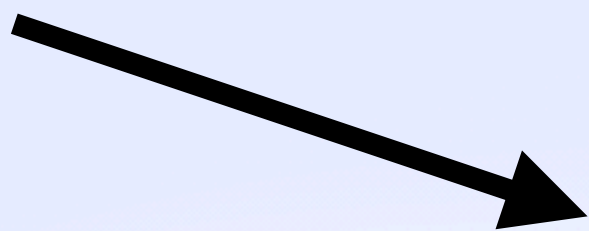
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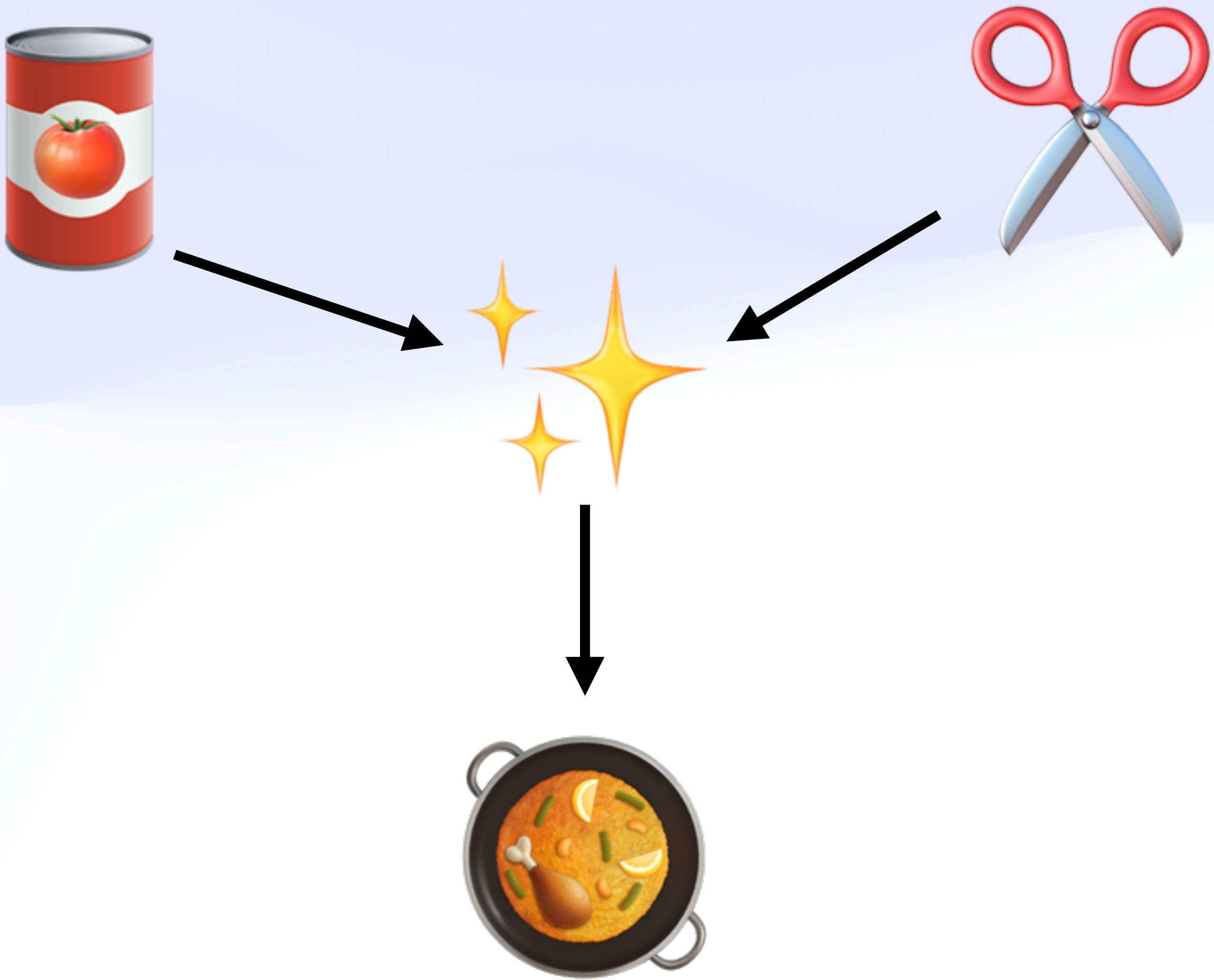
Capabilities 101 

Composition — "Amplification"



Capabilities 101 

Composition — "Amplification"



Capabilities 101 

Auth Should be Boring!

DRIVE

Fission Drive is your web native file system.
Your files, under your control, available everywhere.

 Sign in with Fission

Capabilities 101 

Auth Should be Boring!

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UCAN Decentralize Auth

Under the Microscope



Under the Microscope 

"Who" vs "What"



Under the Microscope 

"Who" vs "What"

DIDs say who **you are**



Under the Microscope 

"Who" vs "What"

DIDs say who **you are**
UCANs show what **you can do**



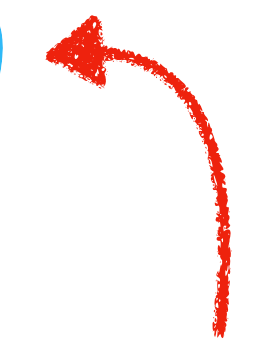
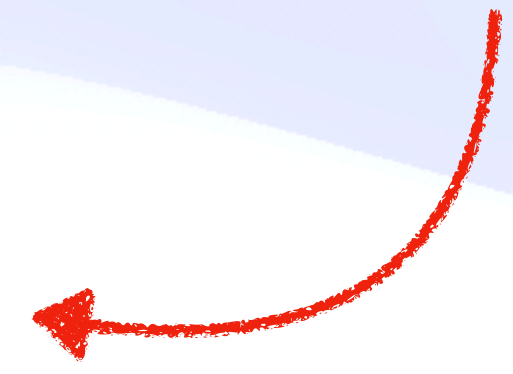
Under the Microscope 

"Who" vs "What"

DIDs say who **you are**

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AuthN



AuthZ



Under the Microscope 

Teaser Token

```
{
  "iss": "did:key:z6Mkp5Esz9s2MHsqYvLoccyHwX5SeyZKpq79Gt45fFGEZR99",
  "aud": "did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ",
  "exp": 9256939505,
  "nbf": 1639608293,
  "cap": {
    "nns://demouser.fission.name/public/notes/": {
      "wnfs/append": [{"mime": "image/png"}]
    }
  }
}
```

Under the Microscope 

Teaser Token

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Under the Microscope 

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Under the Microscope 

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Under the Microscope 

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    }
  }
}
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Under the Microscope

JWT → ***UCAN***

```
{
  "iss": "did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ",
  "aud": "did:key:z6MkvXfPUv8bxtsVQiGo7Ntk4qKJNcgK2it52pc73teUpRLT",
  "nbf": 1639608293,
  "exp": 9256939505,
  "cap": {
    "nns://demouser.fission.name/public/photos/": {
      "store/overwrite": [{}]
    },
    "nns://demouser.fission.name/public/notes/": {
      "store/append": [{}]
    }
  },
  "prf": [
    "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",
    "bafkreigpbimktgowom47jv7frrt3xvnb7ati4upgguykyn2cuunt32l63ya"
  ]
}
```

Under the Microscope

JWT → **UCAN**

Header

```
{  
  "alg": "EdDSA",  
  "typ": "JWT"  
}
```

Payload

```
{  
  "iss": "did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ",  
  "aud": "did:key:z6MkvXfPUv8bxtsVQiGo7Ntk4qKJNcgK2it52pc73teUpRLT",  
  "nbf": 1639608293,  
  "exp": 9256939505,  
  "cap": {  
    "nns://demouser.fission.name/public/photos/": {  
      "store/overwrite": [{}]  
    },  
    "nns://demouser.fission.name/public/notes/": {  
      "store/append": [{}]  
    }  
  },  
  "prf": [  
    "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
    "bafkreigpbimktgowom47jv7firt3xvnb7ati4upgguykyn2cuunt32l63ya"  
  ]  
}
```

Signature

```
"kwRdqPN74pkcpXGgdk  
7Z7FW3M1mRRYaDE5ZgX  
G6srAuu6V6mvMVRdBLn  
D5CWid-X4tDIKpliVjl  
CSLTntB4pCw"
```

Under the Microscope

JWT → **UCAN**

Header

```
{  
  "alg": "EdDSA",  
  "typ": "JWT"  
}
```

Payload

```
{  
  "iss": "did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ",  
  "aud": "did:key:z6MkvXfPUv8bxtsVQiGo'7Ntk4qKJNcgK2it52pc73teUpRLT",  
  "nbf": 1639608293,  
  "exp": 9256939505,  
  "cap": {  
    "nns://demouser.fission.name/public/photos/": {  
      "store/overwrite": [{}]  
    },  
    "nns://demouser.fission.name/public/notes/": {  
      "store/append": [{}]  
    }  
  },  
  "prf": [  
    "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
    "bafkreigpbimktgowom47jv7frrt3xvnb7ati4upgguykyn2cuunt32l63ya"  
  ]  
}
```



Signature

```
"kwRdqPN74pkcpXGgdk  
7Z7FW3M1mRRYaDE5ZgX  
G6srAuu6V6mvMVRdBLn  
D5CWid-X4tDIKpliVjl  
CSLTntB4pCw"
```


Under the Microscope

JWT → UCAN

Header

```
{  
  "alg": "EdDSA",  
  "typ": "JWT"  
}
```

Payload

```
{  
  "iss": "did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ",  
  "aud": "did:key:z6MkvXfPUv8bxtsVQiGo'7Ntk4qKJNcgK2it52pc73teUpRLT",  
  "nbf": 1639608293,  
  "exp": 9256939505,  
  "cap": {  
    "nns://demouser.fission.name/public/photos/": {  
      "store/overwrite": [{}]  
    },  
    "nns://demouser.fission.name/public/notes/": {  
      "store/append": [{}]  
    }  
  },  
  "prf": [  
    "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
    "bafkreigpbimktgowom47jv7firt3xvnb7ati4upgguykyn2cuunt32l63ya"  
  ]  
}
```



Signature

```
"kwRdqPN74pkcpXGgdk  
7Z7FW3M1mRRYaDE5ZgX  
G6srAuu6V6mvMVRdBLn  
D5CWid-X4tDIKpliVjL  
CSLTntB4pCw"
```

Under the Microscope 

Anatomy of a Capability

```
{
  "http://example.com/alice/photos/": {
    "crud/read": [{}],
  },
  "mailto:boris@fission.codes": {
    "msg/send": [
      {"to": "/*.*@fission.codes/"}
    ]
  }
}
```

Under the Microscope 

Anatomy of a Capability

```
{ Resource / "noun"
  "http://example.com/alice/photos/": {
    "crud/read": [{}]}
  },
  "mailto:boris@fission.codes": {
    "msg/send": [
      {"to": "/*@fission.codes/"}]
  }
}
```

Under the Microscope 

Anatomy of a Capability

```
{ Resource / "noun"
  "http://example.com/alice/photos/": {
    "crud/read": [{}], Action / "verb"
  },
  "mailto:boris@fission.codes": {
    "msg/send": [
      {"to": "/*.*@fission.codes/"}
    ]
  }
}
```

Under the Microscope 

Anatomy of a Capability

```
{ Resource / "noun"
  "http://example.com/alice/photos/": {
    "crud/read": [{}], Action / "verb"
  },
  "mailto:boris@fission.codes": {
    "msg/send": [
      {"to": "/*@fission.codes/"}
    ]
  }
}
```

Extensible fields

Under the Microscope 

Stop  **Moving**  **Keys** 

Under the Microscope 

Stop  **Moving**  **Keys** 



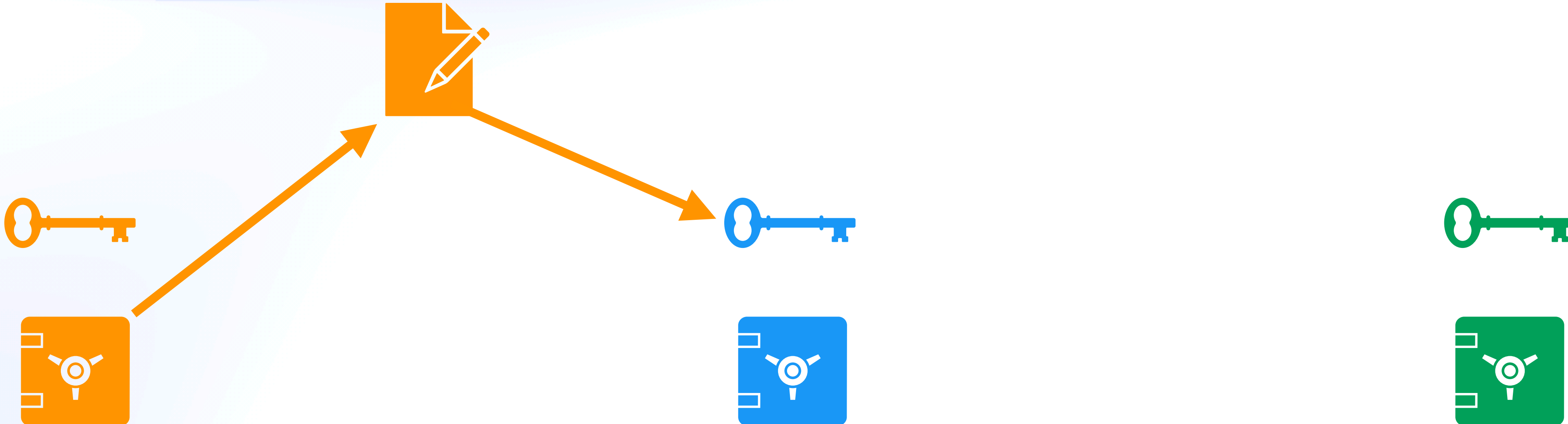
Under the Microscope 

Stop Moving Keys



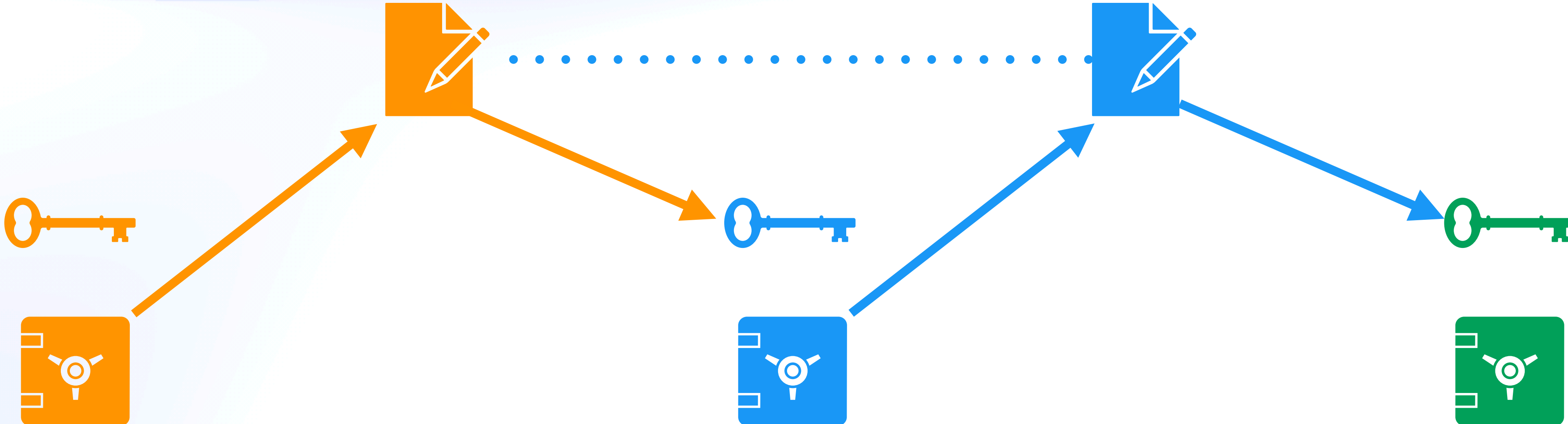
Under the Microscope 

Stop Moving Keys



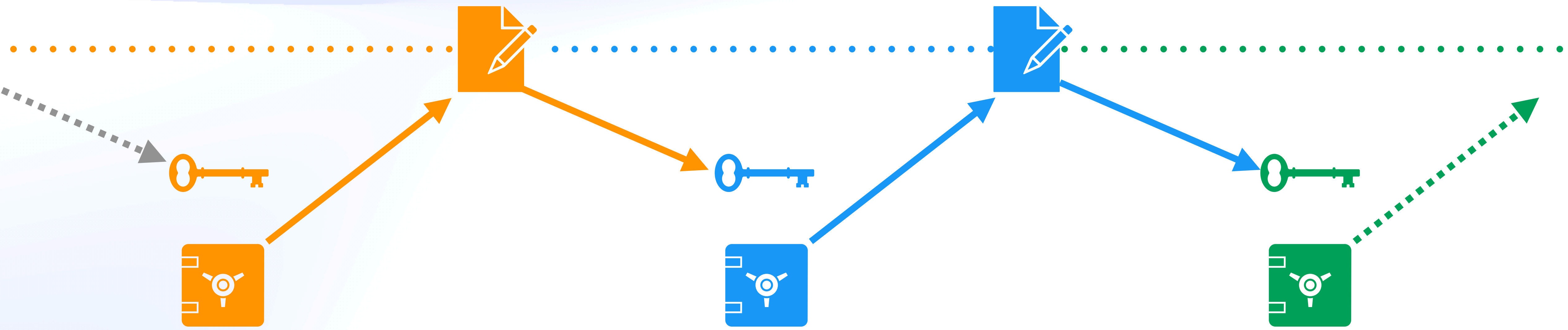
Under the Microscope 

Stop Moving Keys



Under the Microscope 

Stop Moving Keys



Under the Microscope 
Attenuation

Under the Microscope

Attenuation



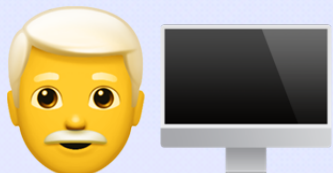
Under the Microscope 

Attenuation



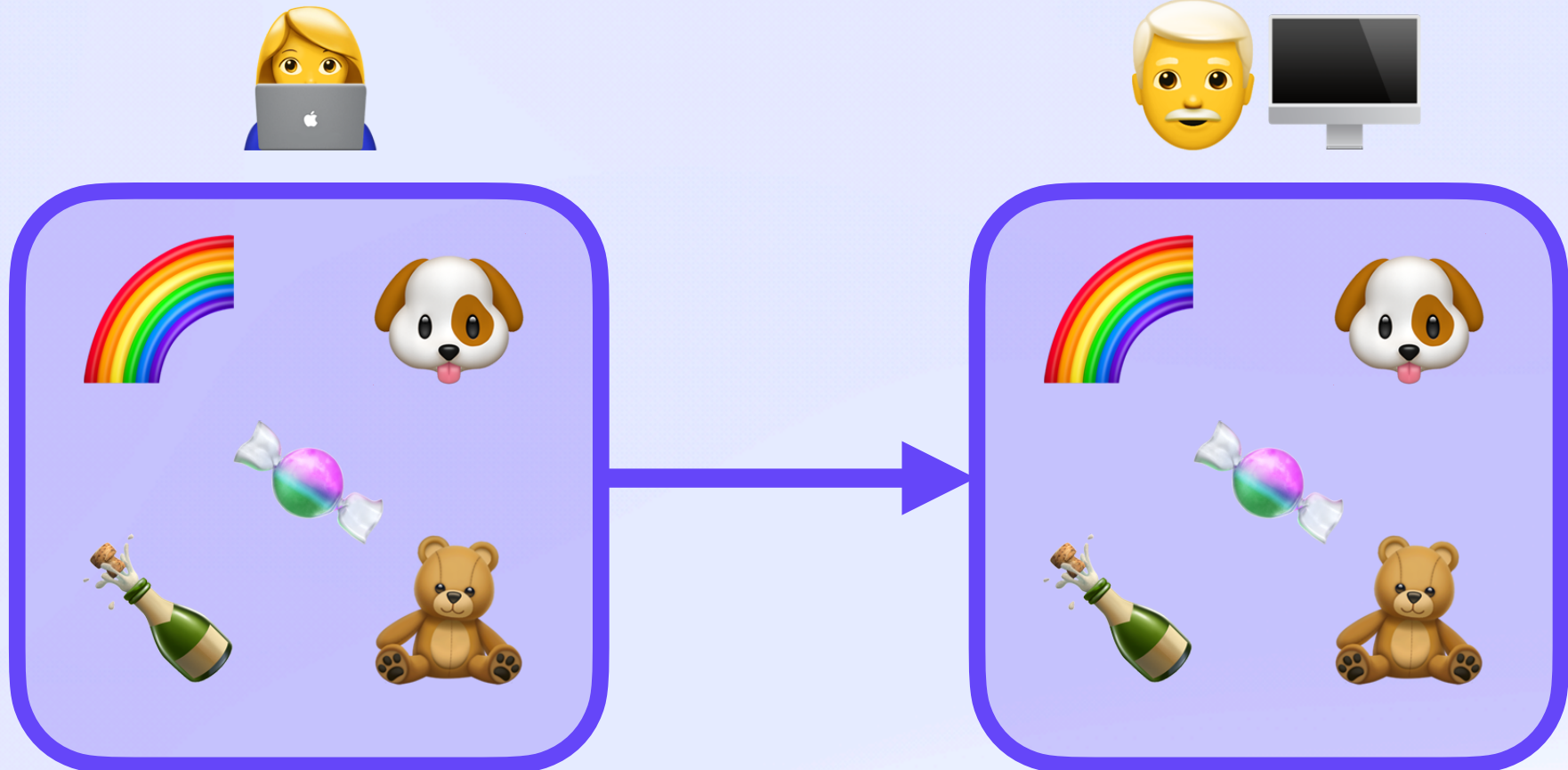
Under the Microscope 

Attenuation



Under the Microscope 

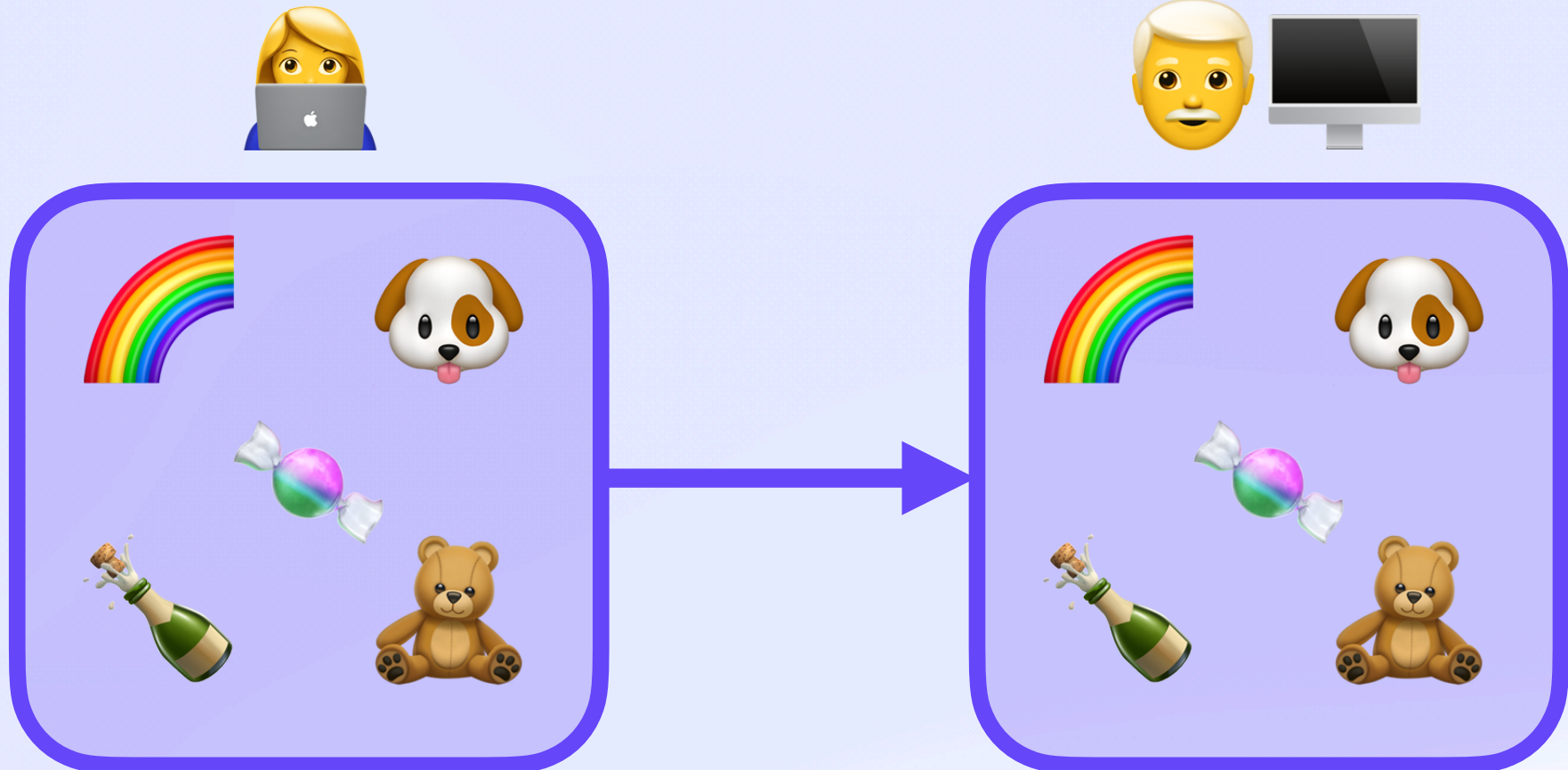
Attenuation



Under the Microscope

Attenuation

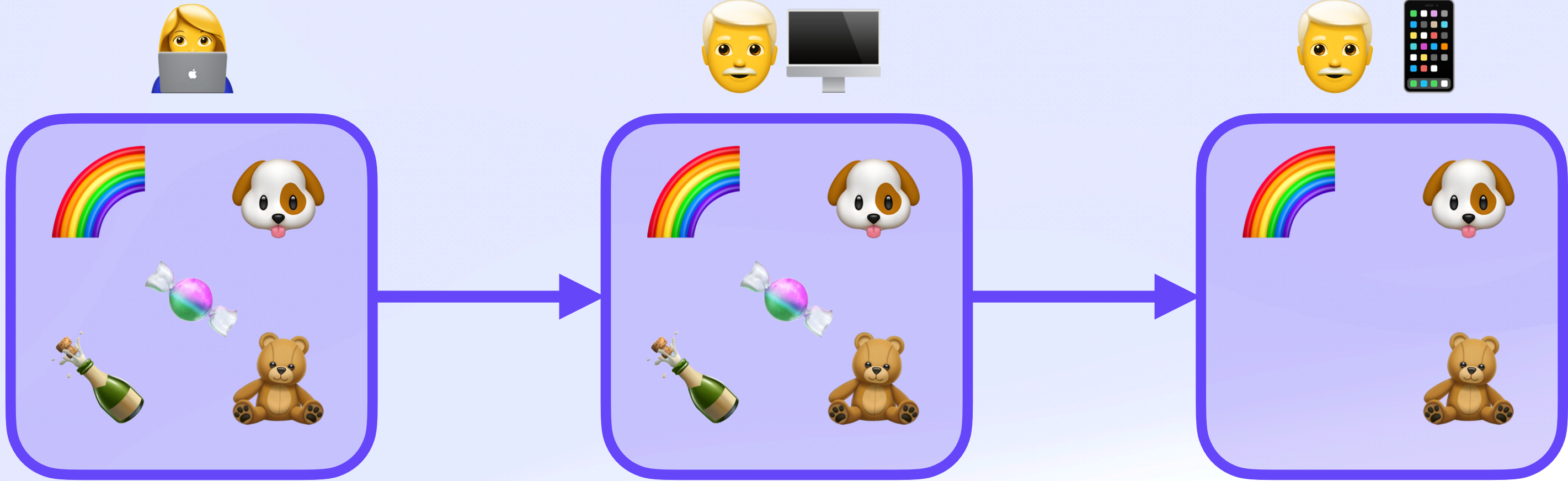
```
"prf": [  
  "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
  "bafkreigpbimktgowom47jv7fvt3xvnb7ati4upgguykyn2cuunt32l63ya"  
]
```



Under the Microscope

Attenuation

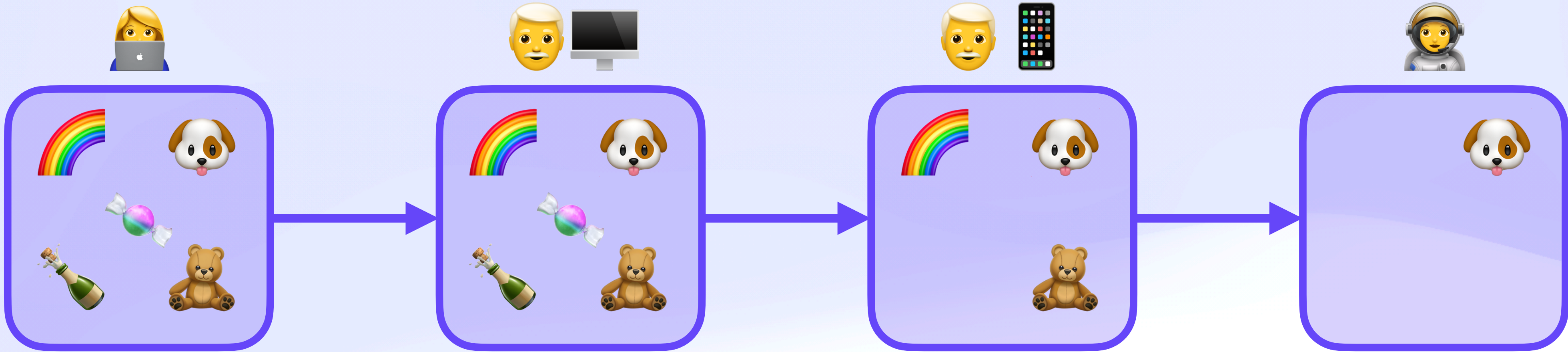
```
"prf": [  
  "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
  "bafkreigpbimktgowom47jv7fvt3xvnb7ati4upgguykyn2cuunt32l63ya"  
]
```



Under the Microscope

Attenuation

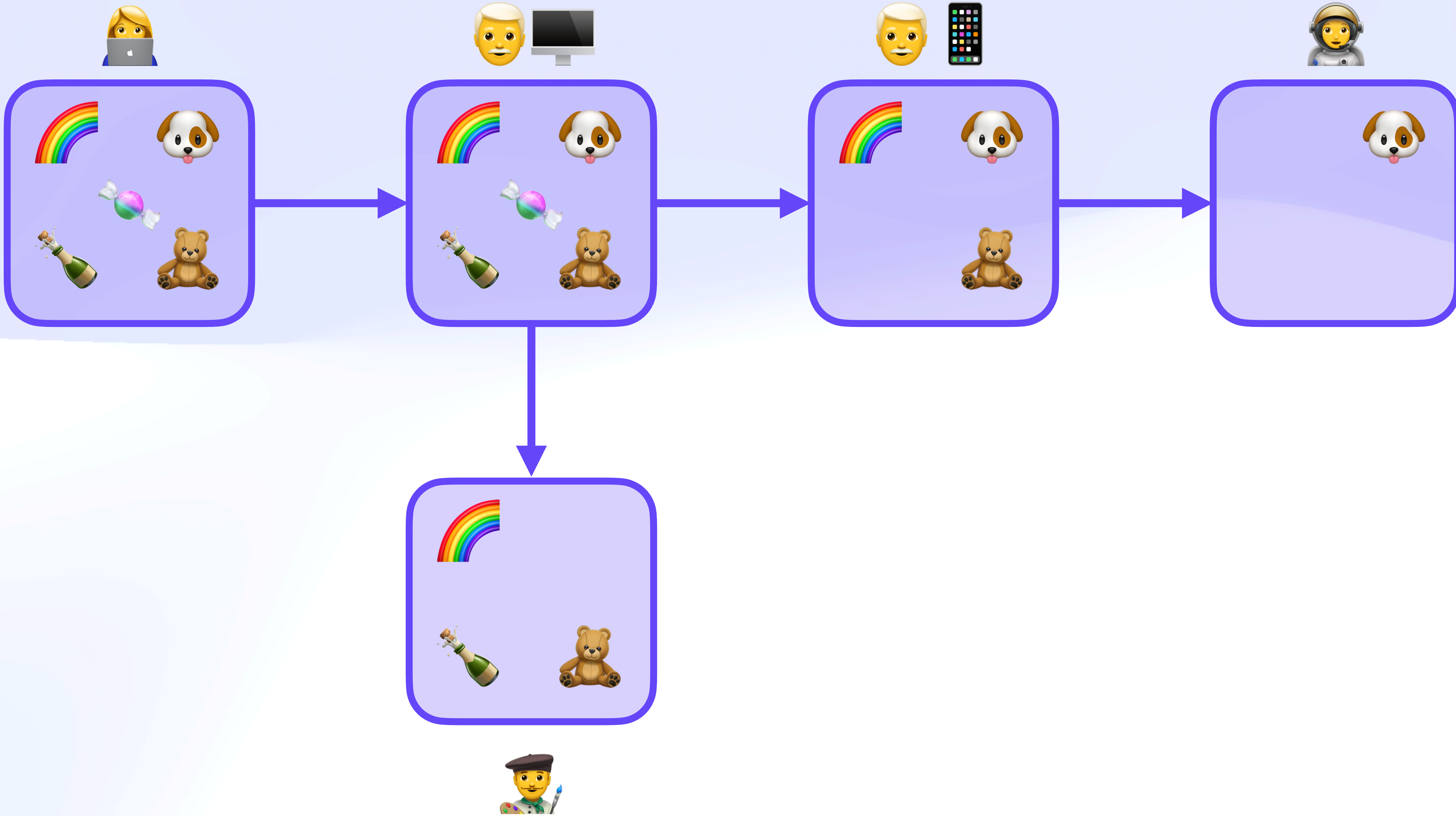
```
"prf": [  
  "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
  "bafkreigpbimktgowom47jv7fvt3xvnb7ati4upgguykyn2cuunt32l63ya"  
]
```



Under the Microscope

Attenuation

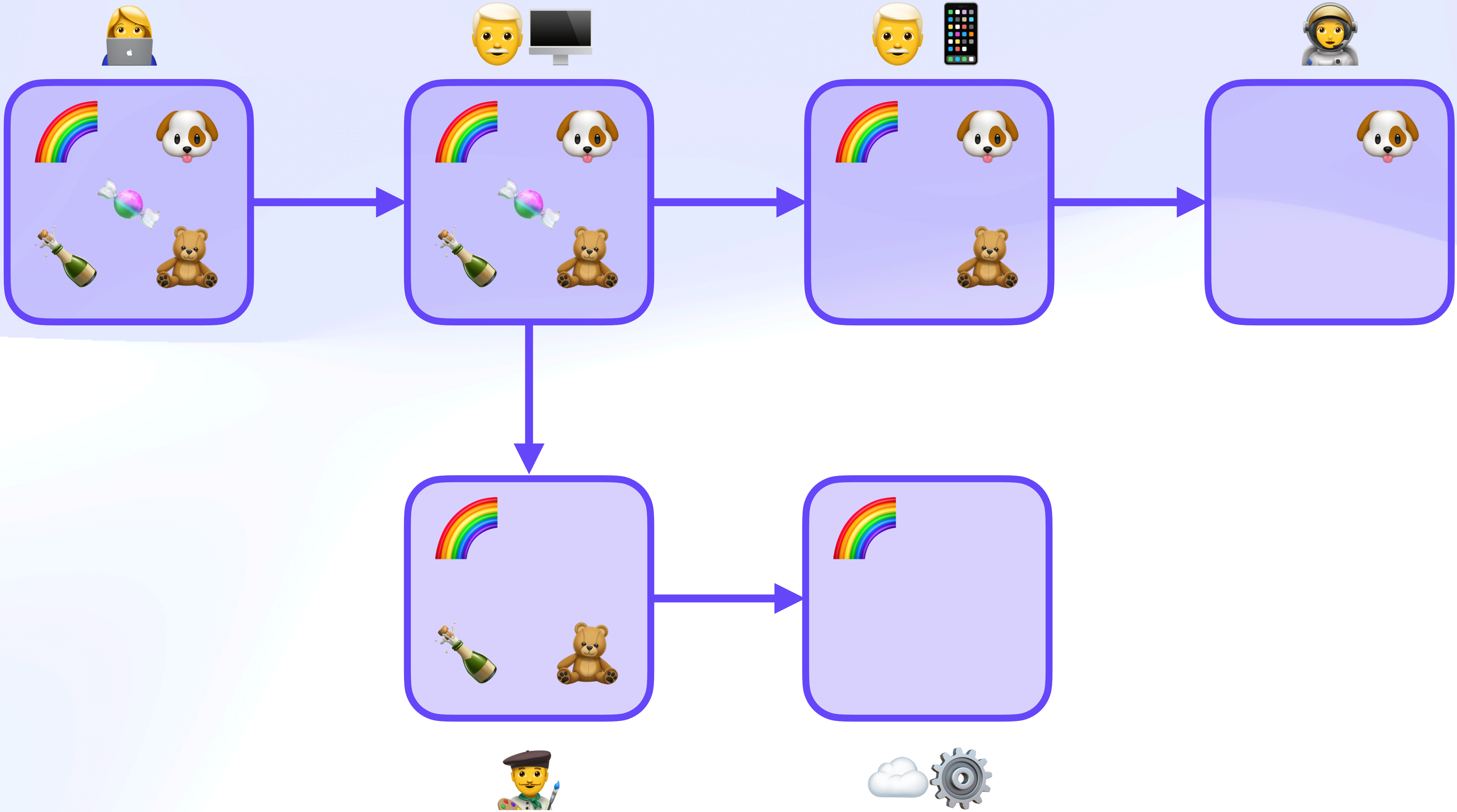
```
"prf": [  
  "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
  "bafkreigpbimktgowom47jv7fvt3xvnb7ati4upgguykyn2cuunt32l63ya"  
]
```



Under the Microscope

Attenuation

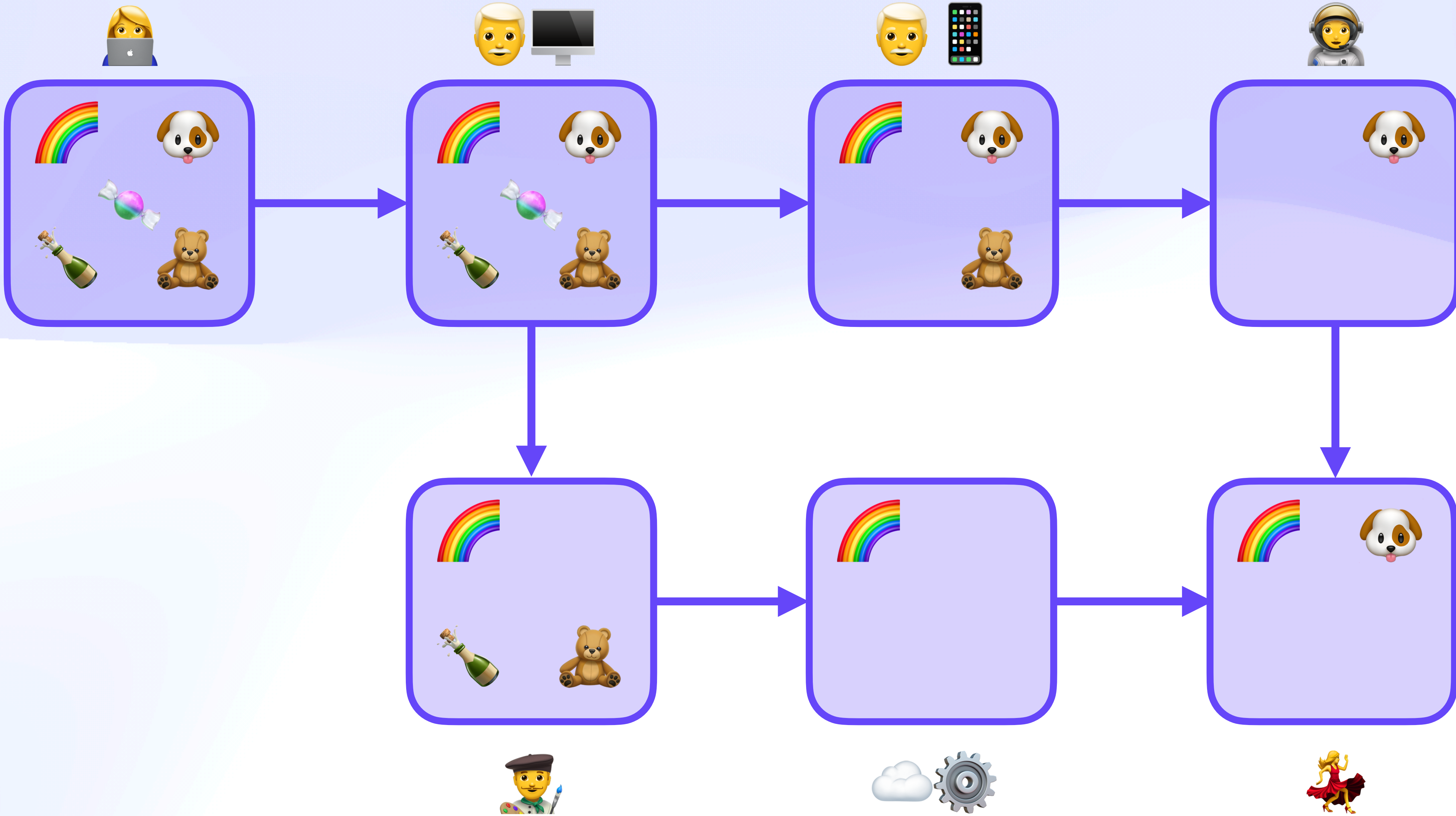
```
"prf": [  
  "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
  "bafkreigpbimktgowom47jv7fvt3xvnb7ati4upgguykyn2cuunt32l63ya"  
]
```



Under the Microscope

Attenuation

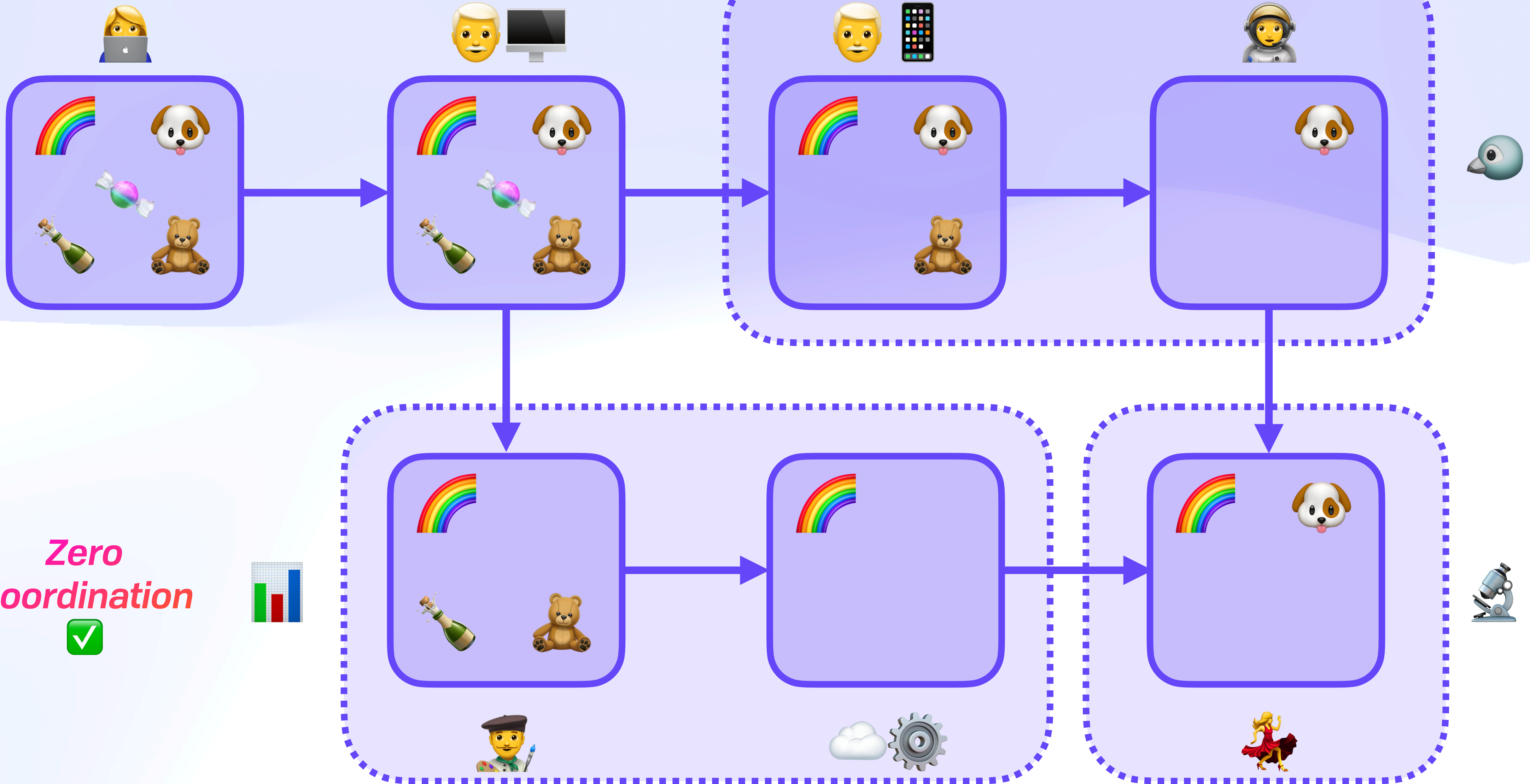
```
"prf": [  
  "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
  "bafkreigpbimktgowom47jv7fvt3xvnb7ati4upgguykyn2cuunt32l63ya"  
]
```



Under the Microscope

Attenuation

```
"prf": [  
  "bafkreifhbe7hcm47j4wkvghwmbtgqtdt7laiwq2t6duoi4rhigrdtgyq7e",  
  "bafkreigpbimktgowom47jv7frt3xvnb7ati4upgguykyn2cuunt32l63ya"  
]
```

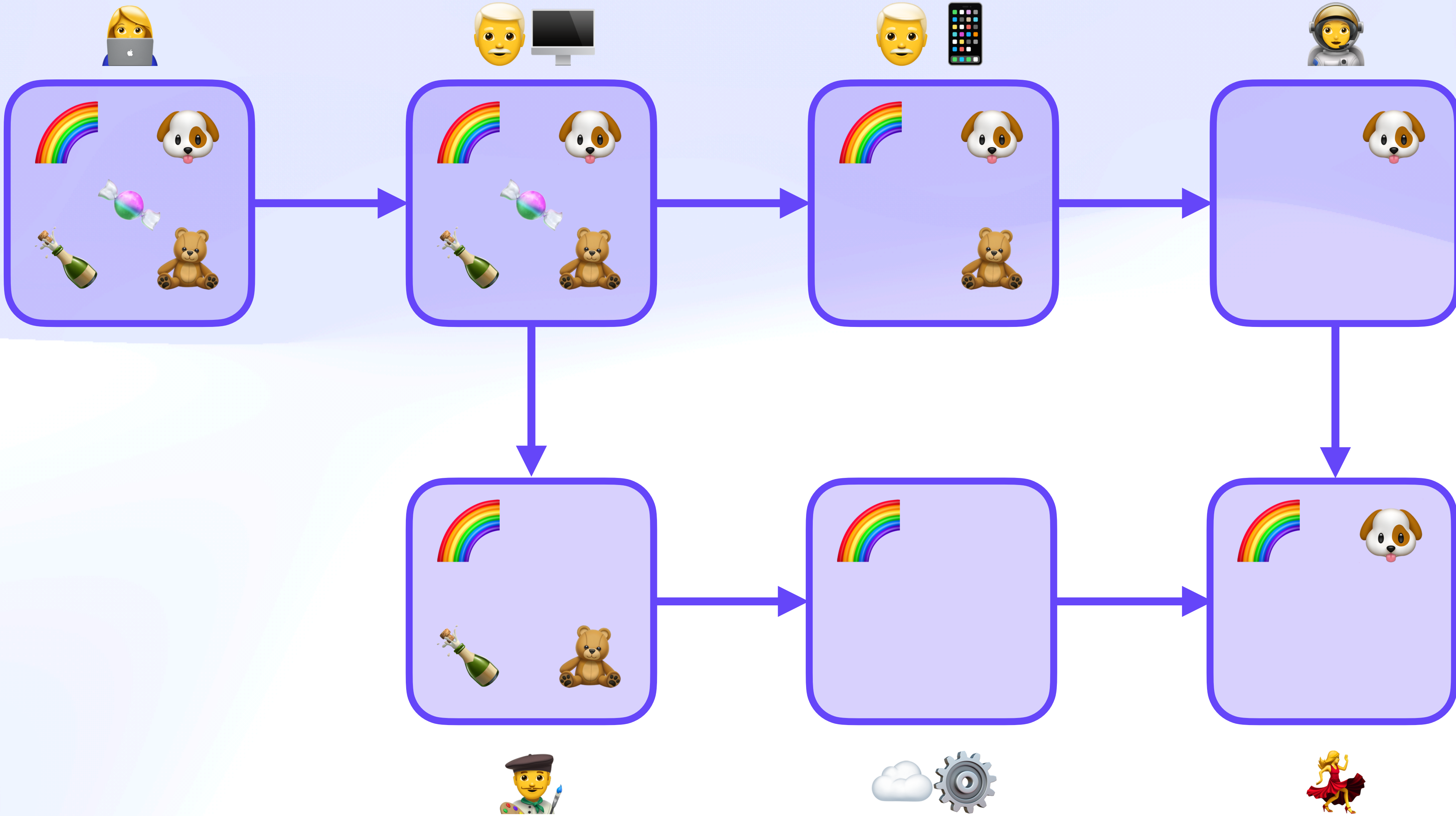


Zero
Coordination
✓



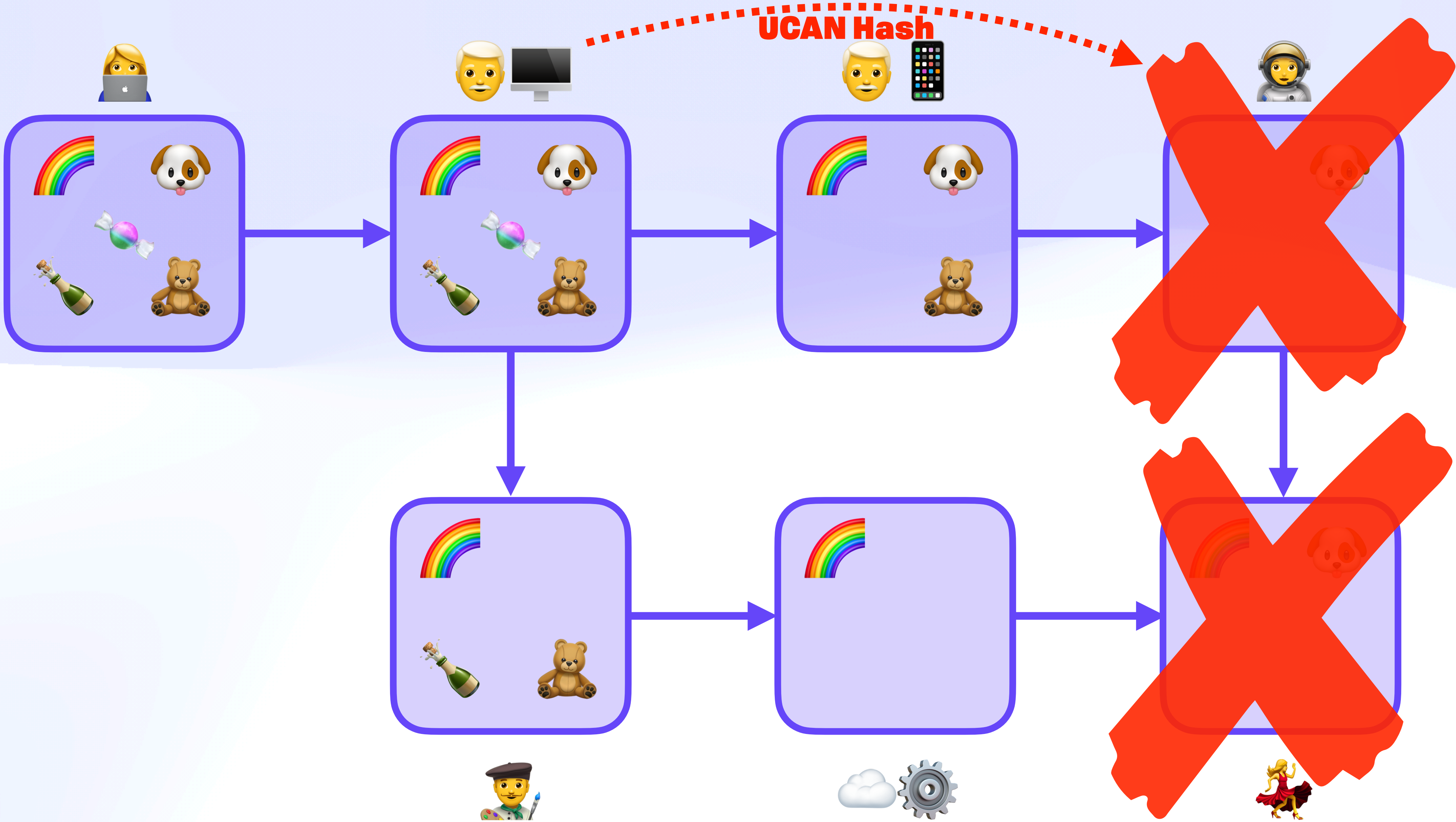
Under the Microscope 

Revocation Cascade



Under the Microscope 

Revocation Cascade



Under the Microscope 

Composable Standard Library

Under the Microscope 

Composable Standard Library

Resource (URI)

https:

mailto:

file:

wnfs:

dns:

news:

Ability (Cap)

crud/create

crud/read

crud/update

crud/destroy

msg/send

msg/receive

group/ban

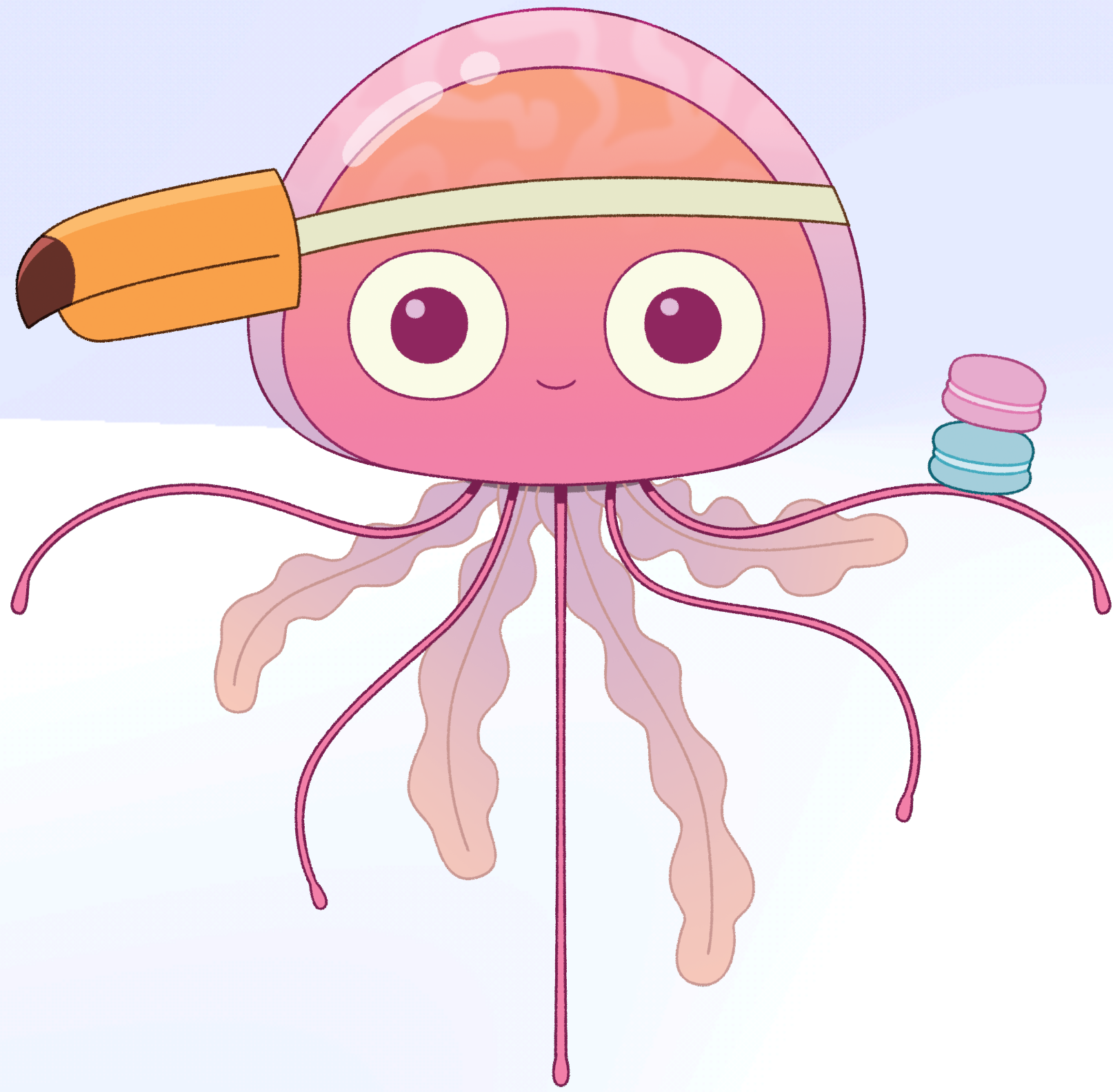
group/join

Under the Microscope 

ucan-ipld & CACAO

Under the Microscope 

ucan-ipld & CACAO



```
type UCAN struct {
  v String

  iss Principal
  aud Principal
  s Signature

  att [Capability]
  prf [&UCAN]
  exp Int

  fct [Fact]
  nnc optional String
  nbf optional Int
} representation map {
  field fct default []
  field prf default []
}
```



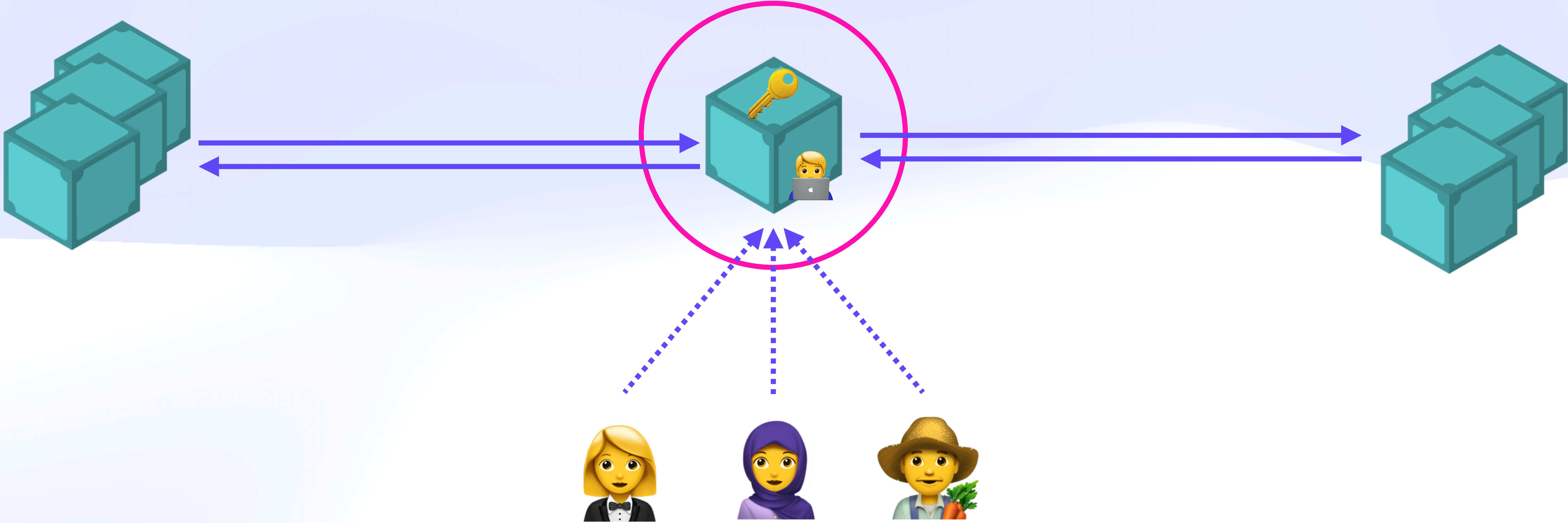
github.com/ucan-wg/ucan-ipld

Solving the Case Study



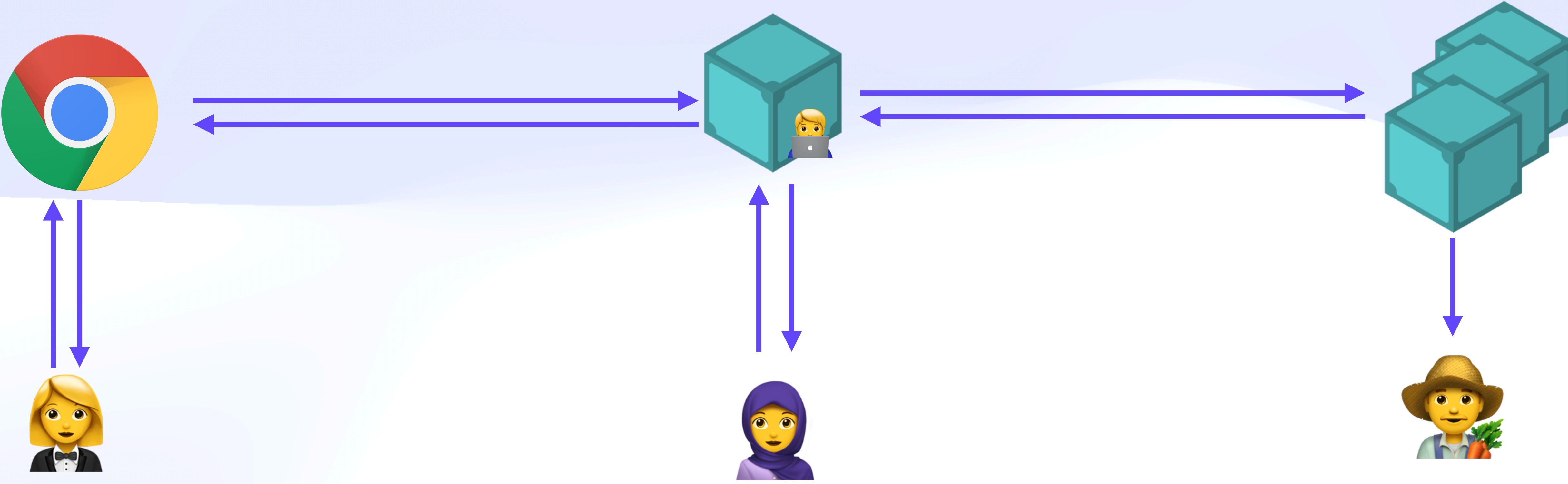
Solving the Case Study 🕵️

Case Study: IPNS



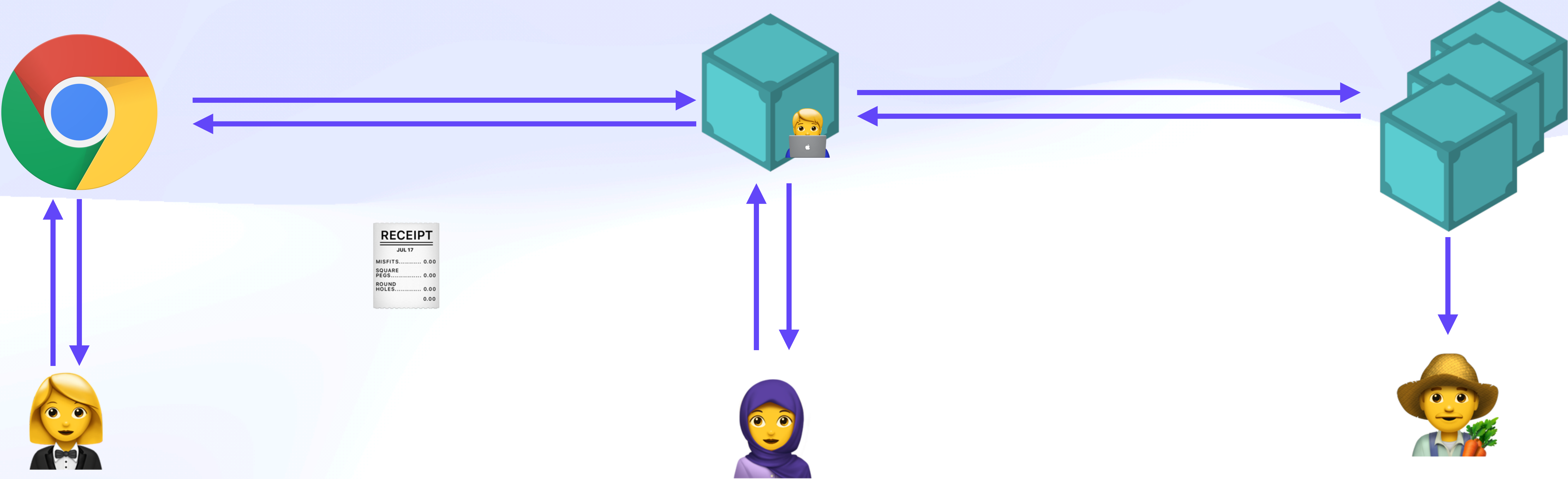
Solving the Case Study 🕵️

Case Study: NNS



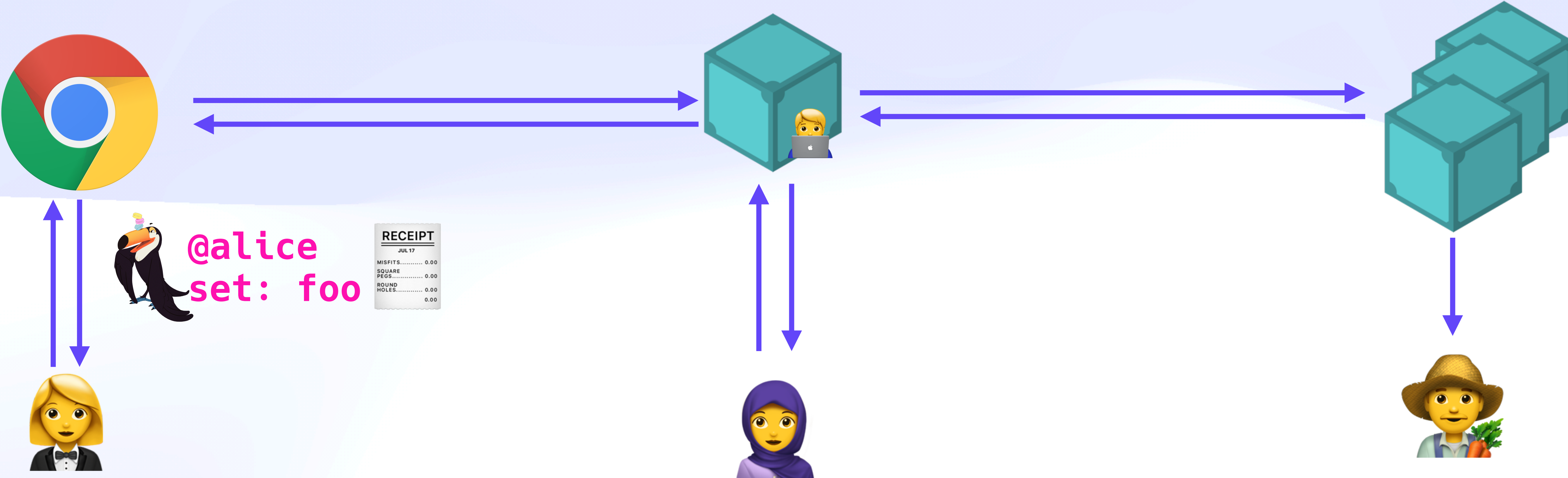
Solving the Case Study

Case Study: NNS



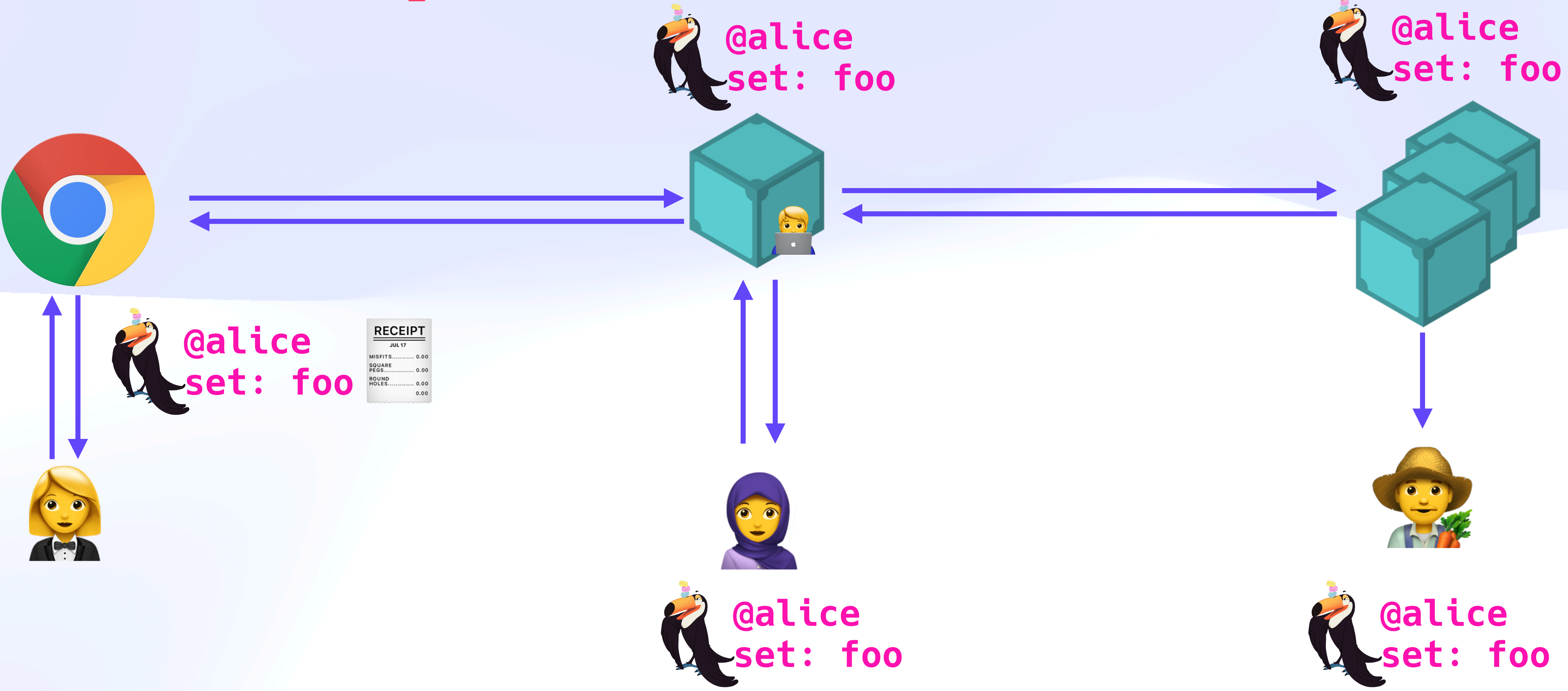
Solving the Case Study

Case Study: NNS



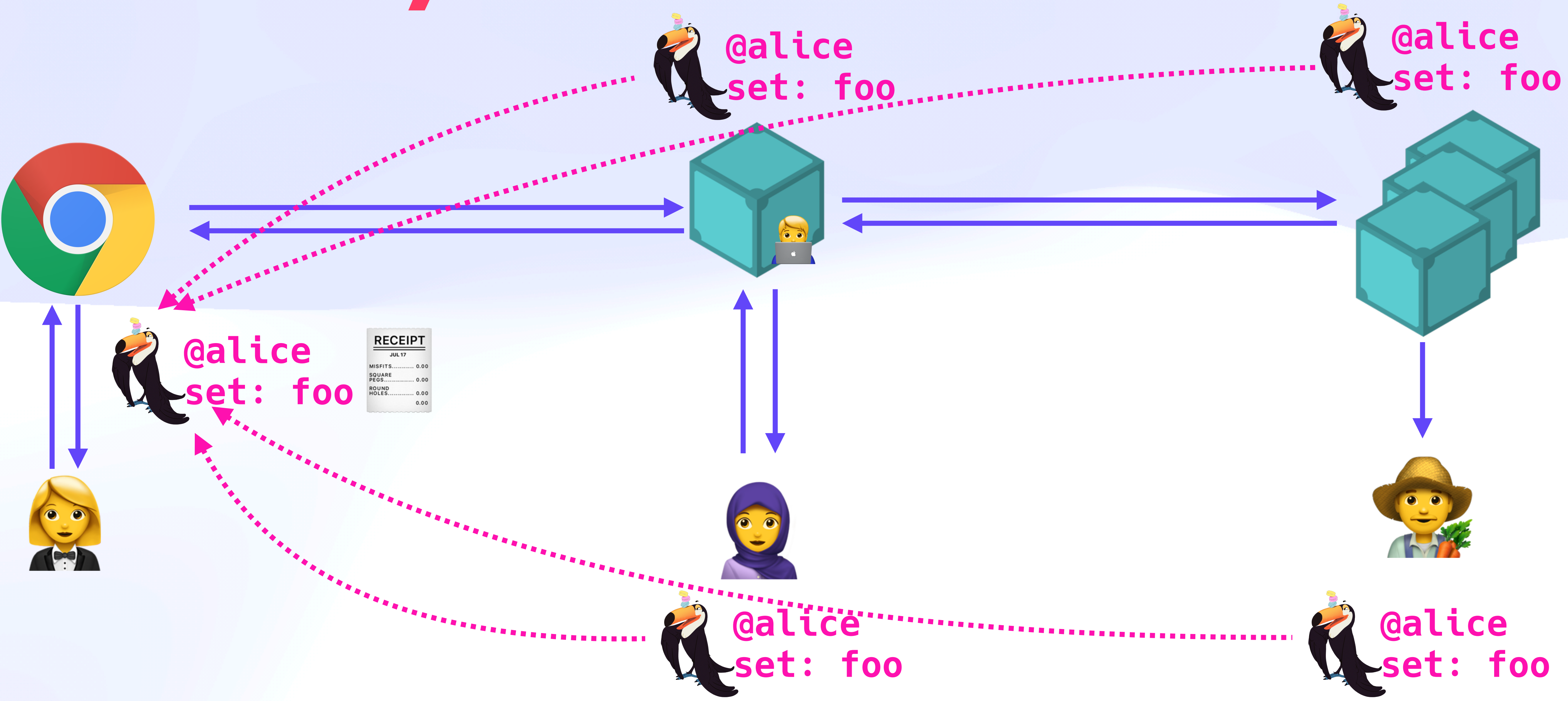
Solving the Case Study 🕵️

Case Study: NNS



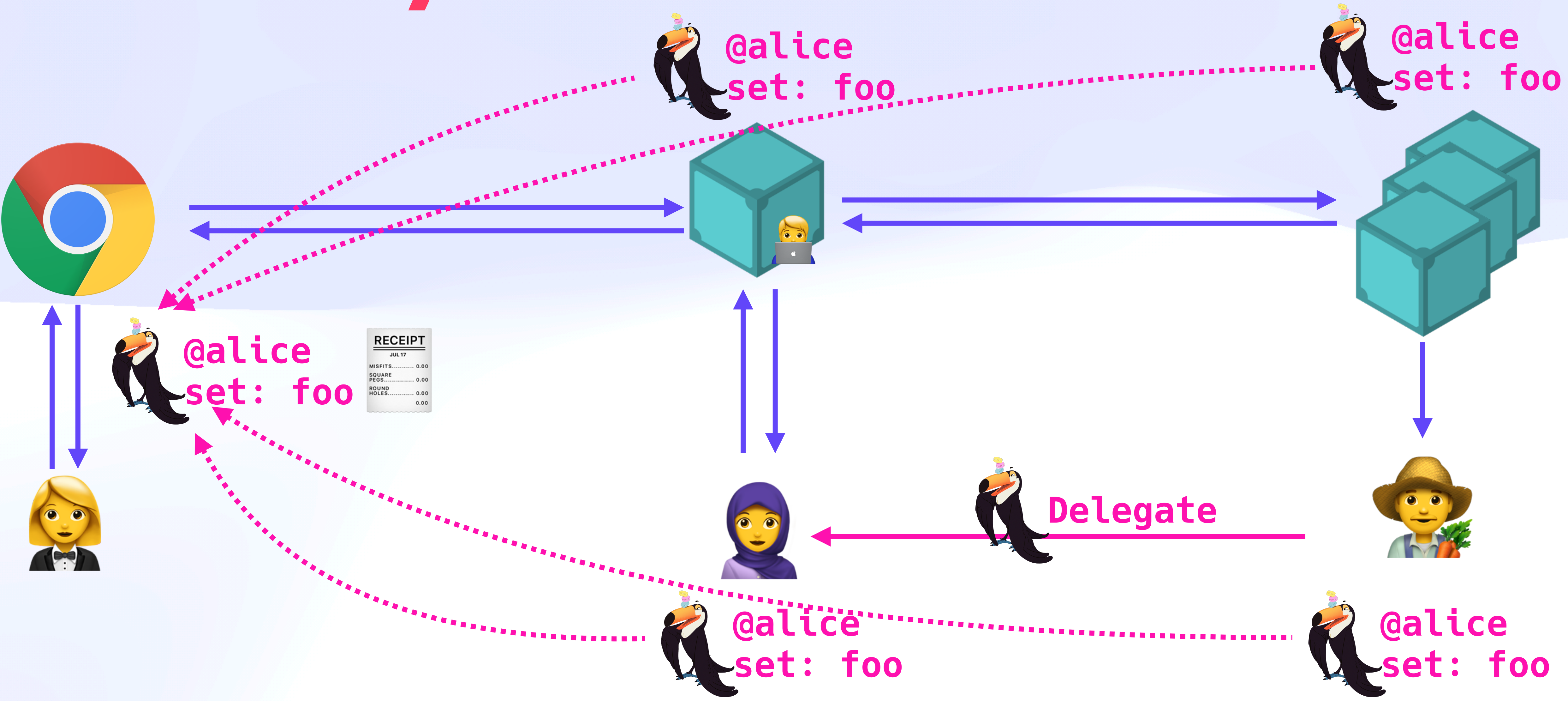
Solving the Case Study

Case Study: NNS



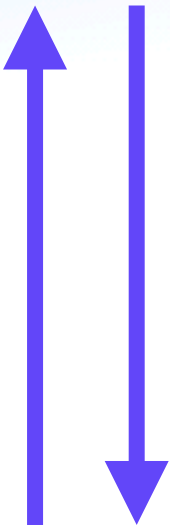
Solving the Case Study

Case Study: NNS



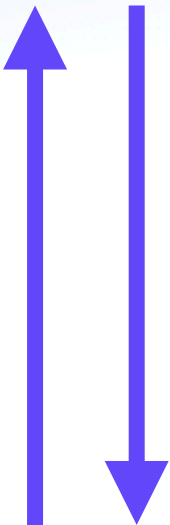
Solving the Case Study 🕵️

Authorised Data Retrieval



Solving the Case Study 🕵️

Authorised Data Retrieval



@bob
get: @alice/photos



Solving the Case Study 

User Controlled Apps: IPFS ❤️ UCAN

Solving the Case Study 🕵️

User Controlled Apps: IPFS ❤️ UCAN

A "Data Backpack"



Different Apps

DIFFUSE
DRIVE



expede-ipfs-thing-2023

NAME

Public

Apps

Audio

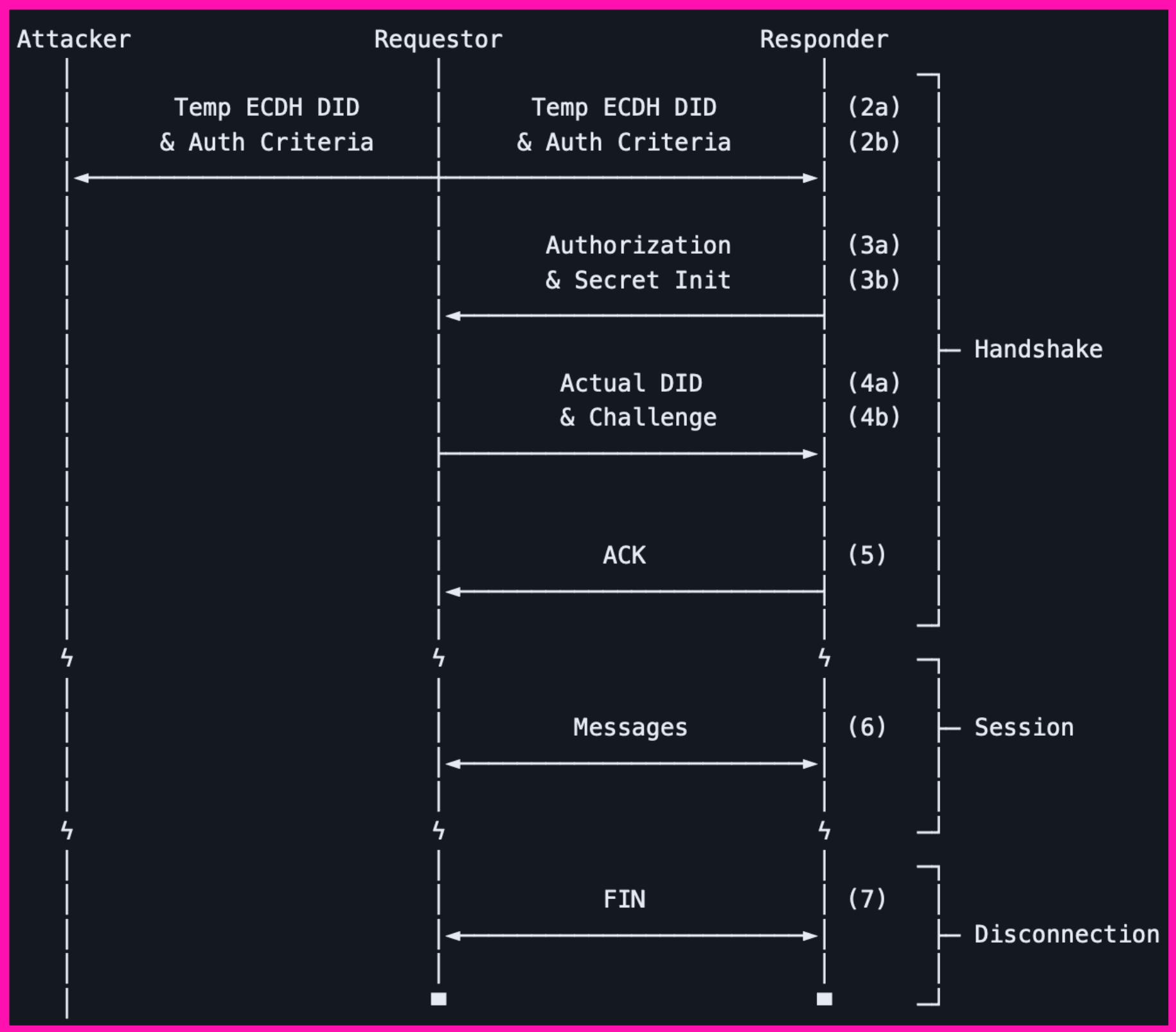
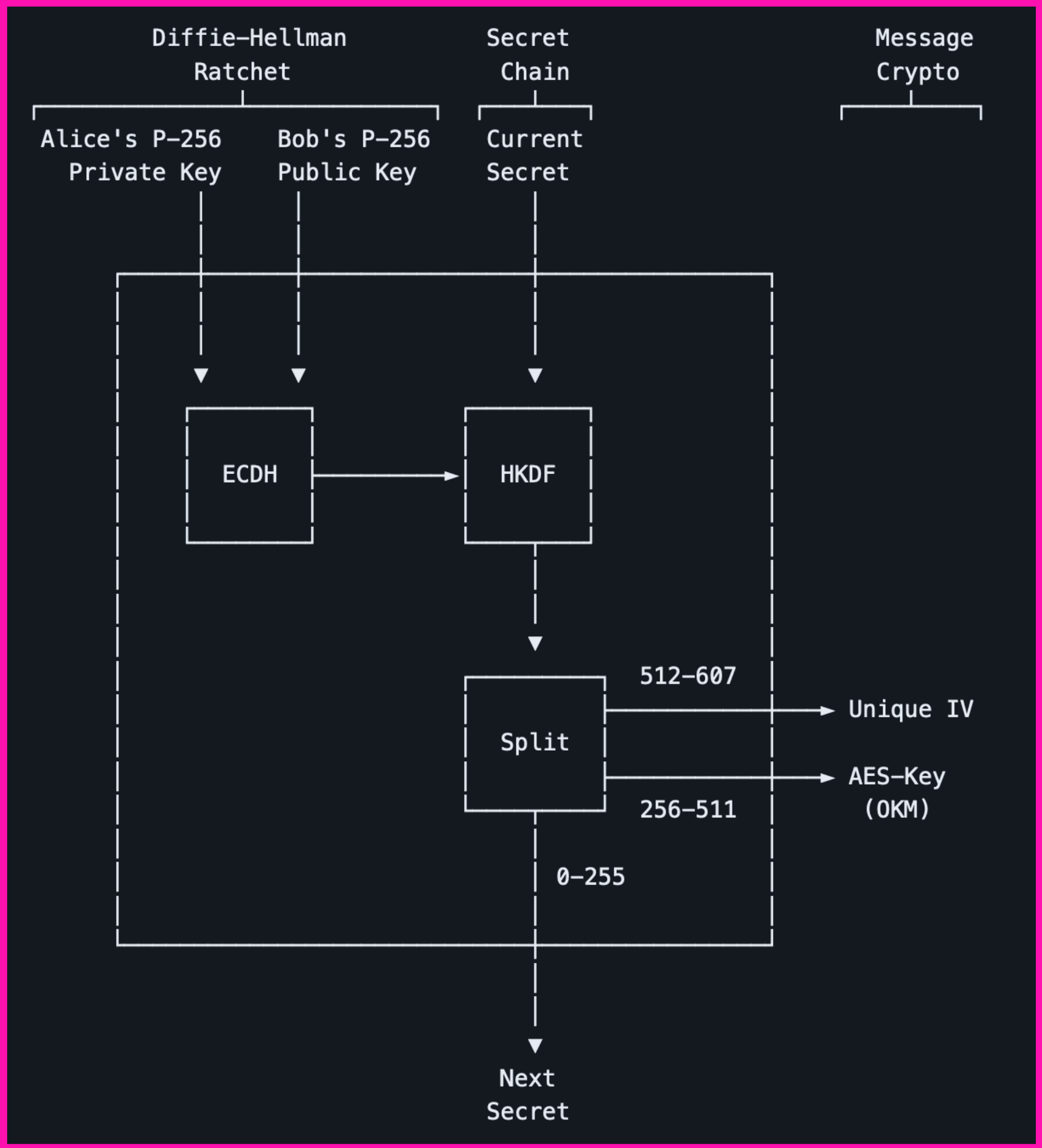
Documents

Photos

Video

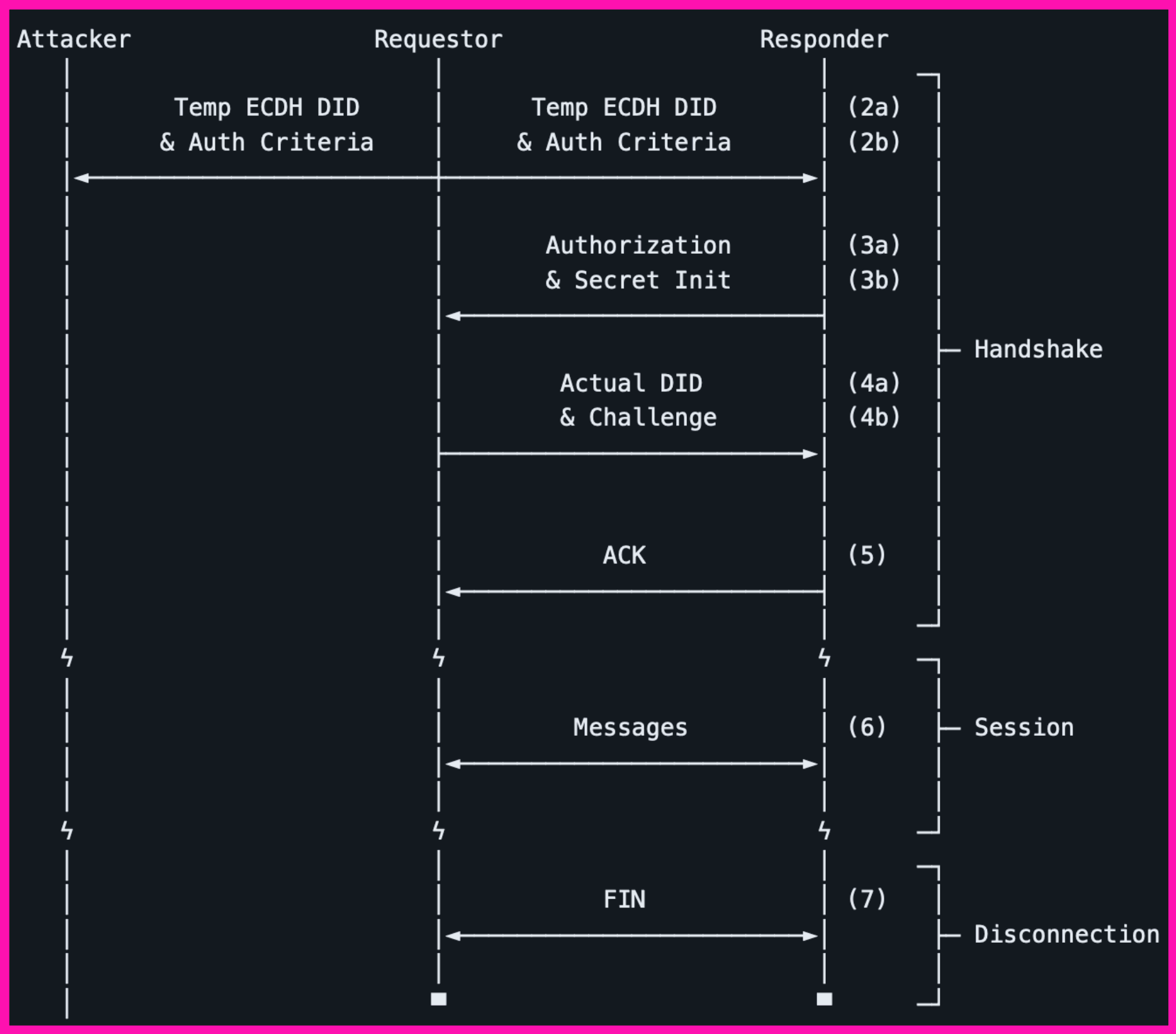
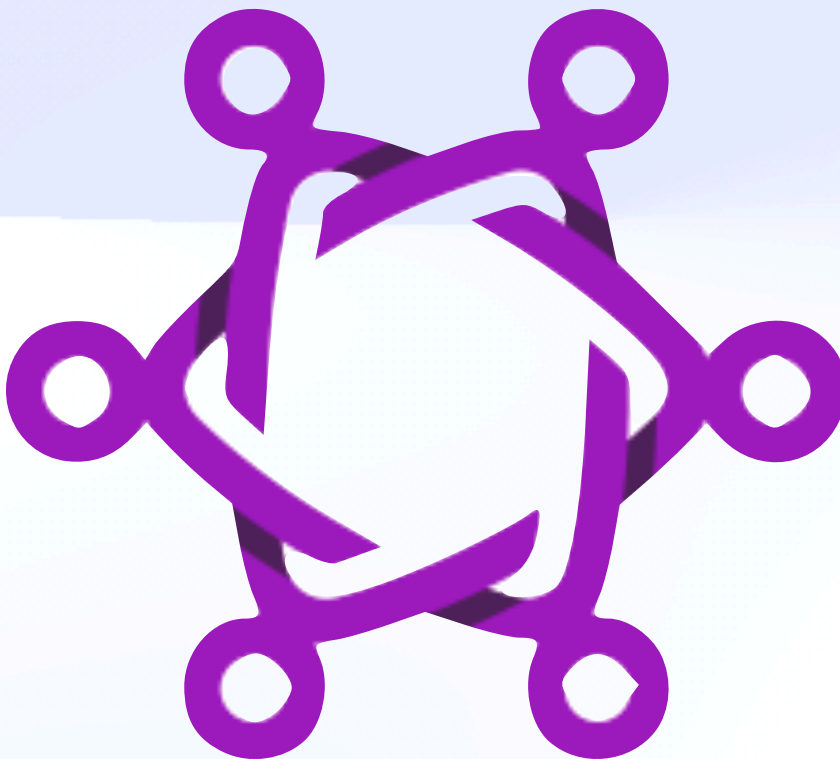
Solving the Case Study

AWAKE: Authorised Channels



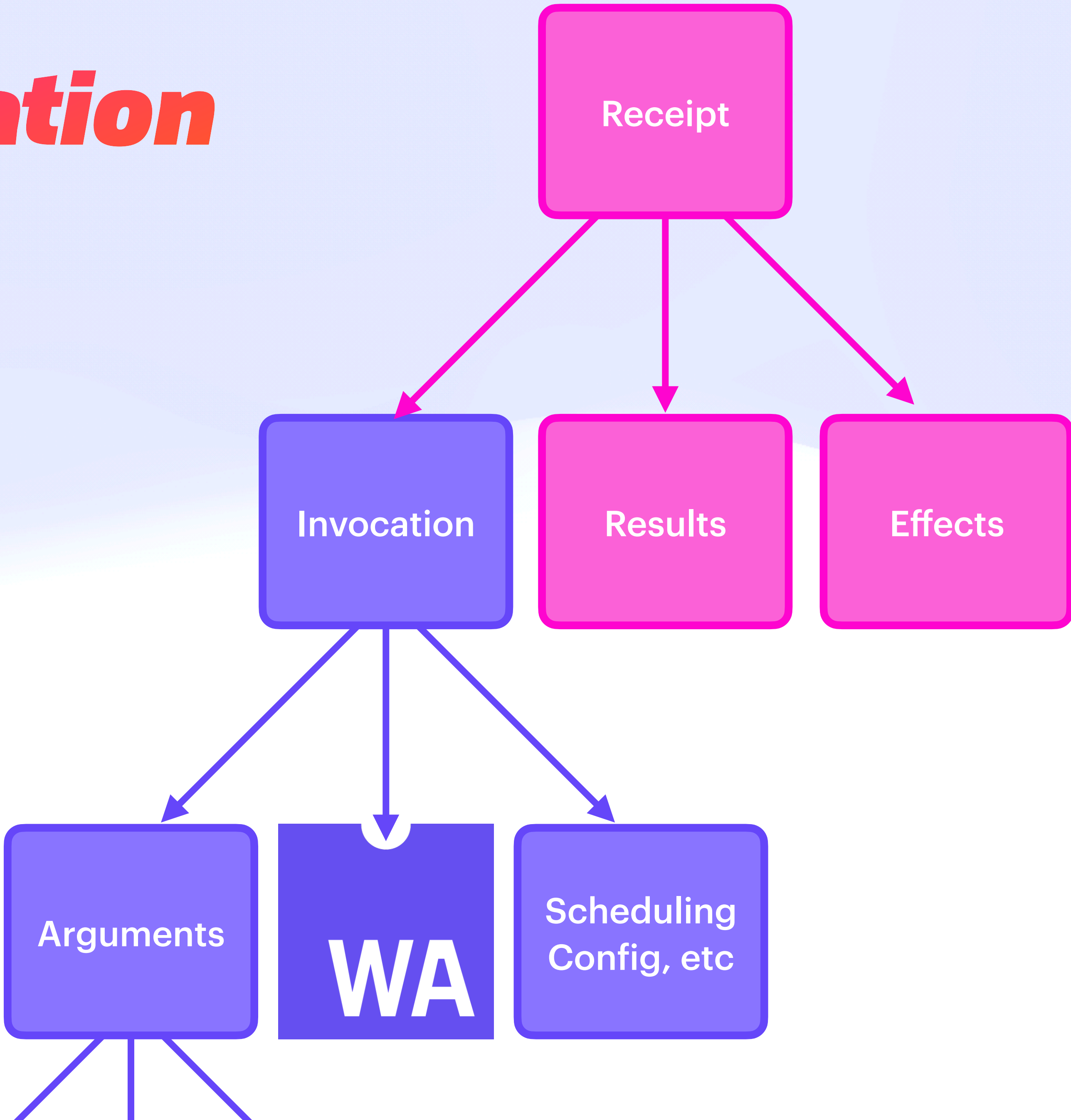
Solving the Case Study

AWAKE: Authorised Channels



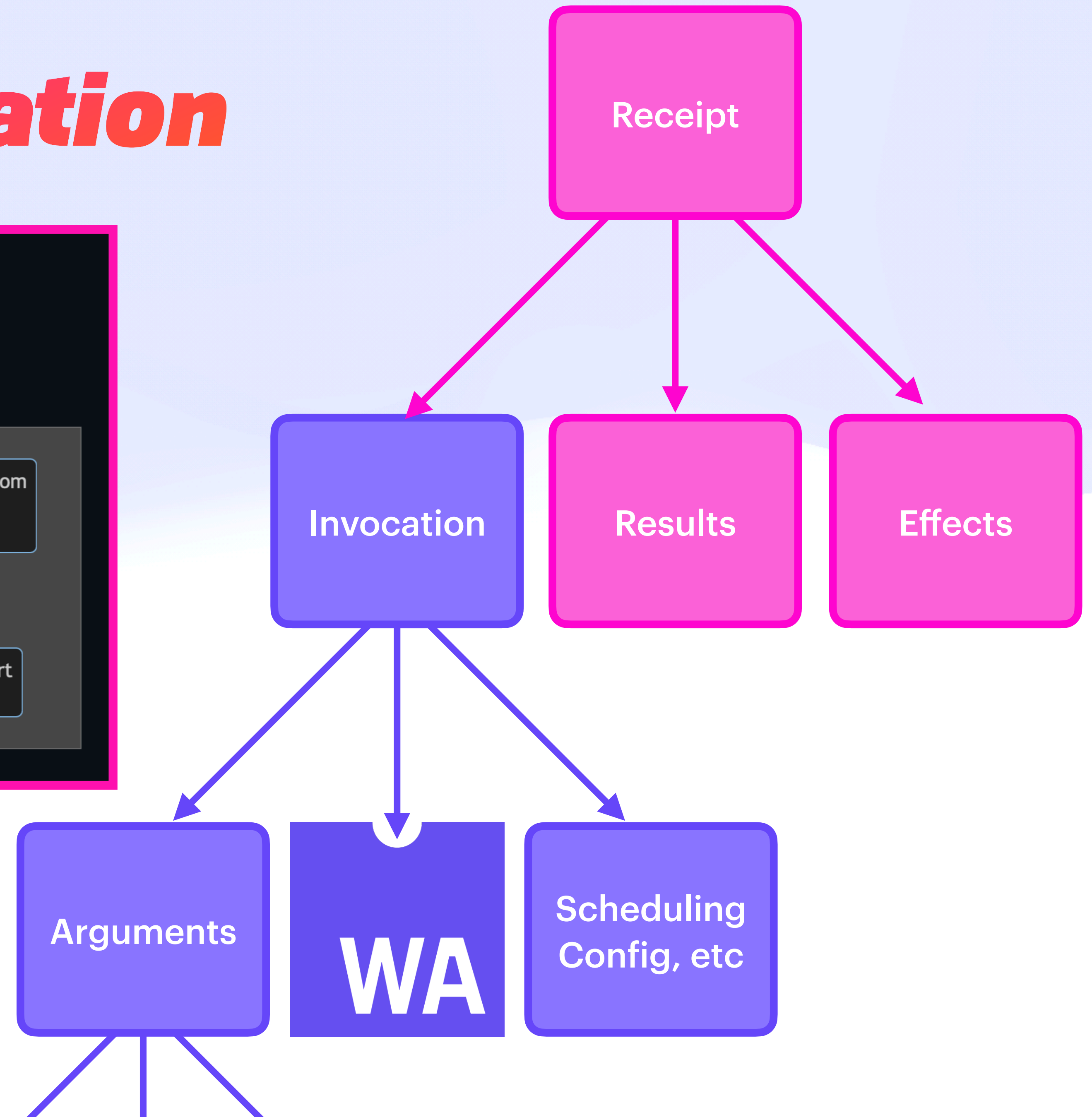
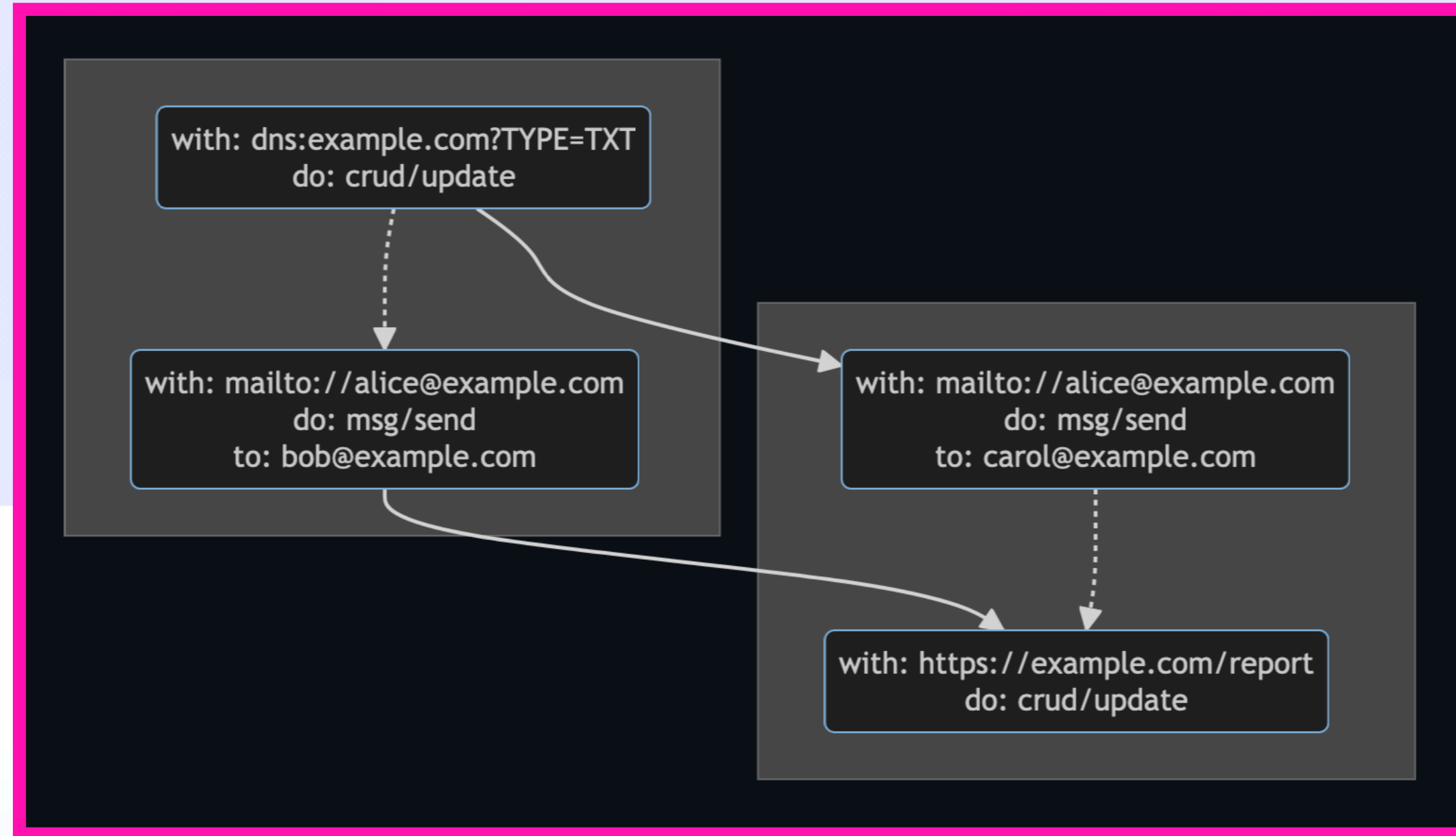
Solving the Case Study

Distributed Invocation



Solving the Case Study

Distributed Invocation



Resources



Resources 

Further Reading

Resources 

Further Reading

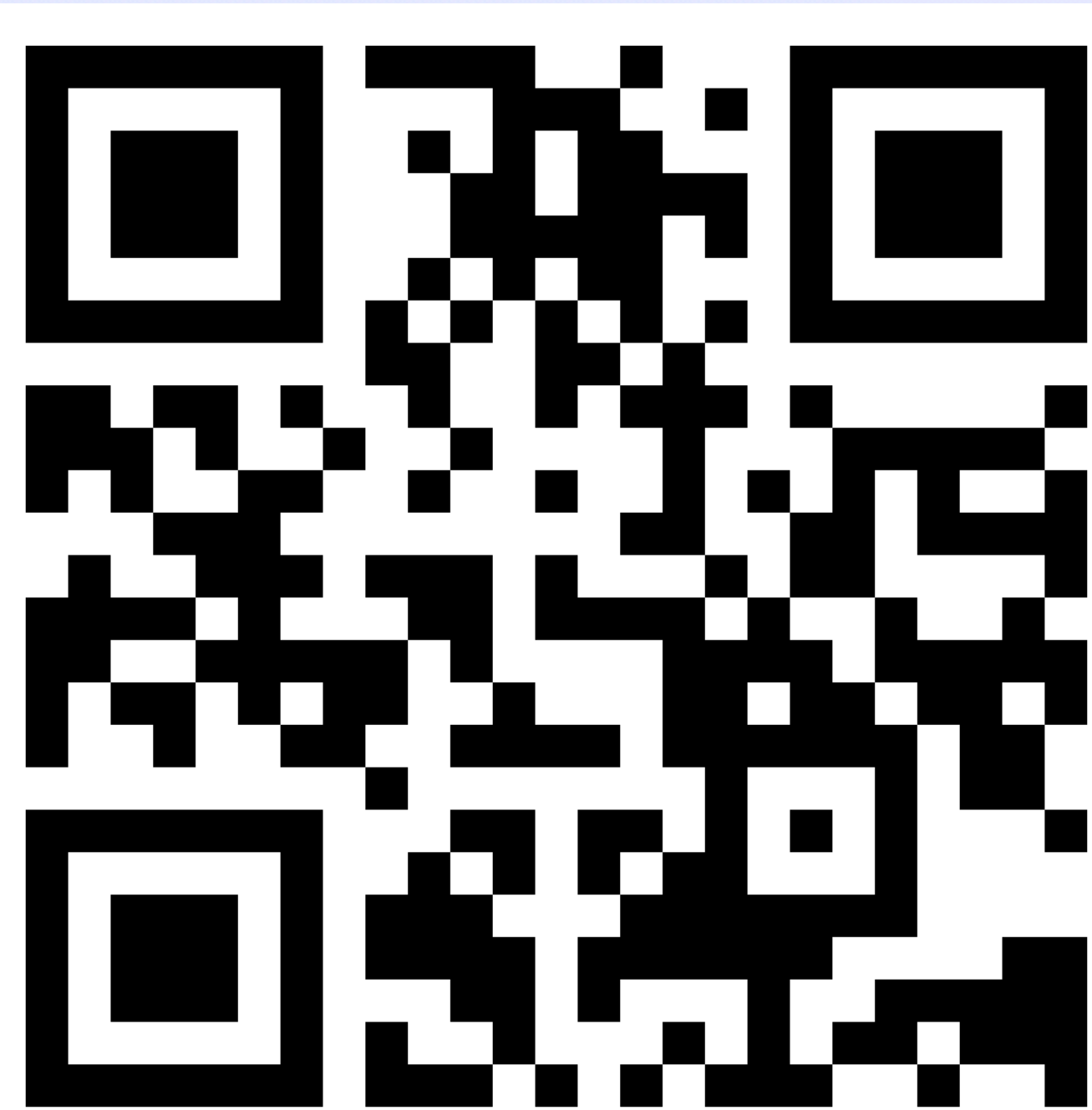
- ◆ **Community:** <https://github.com/ucan-wg>



Resources 

Further Reading

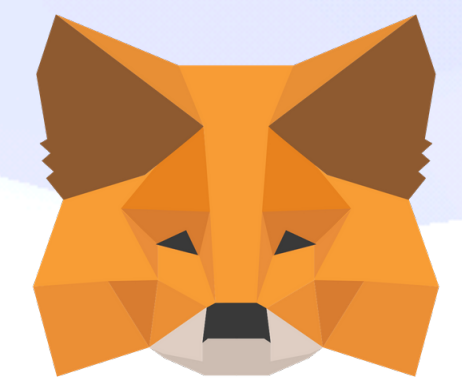
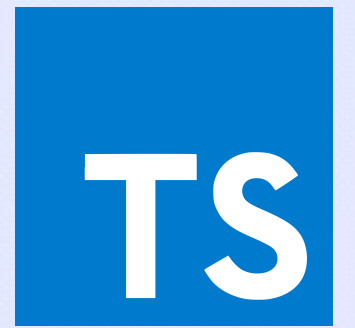
- ♦ **Community:** <https://github.com/ucan-wg>



Resources 

Further Reading

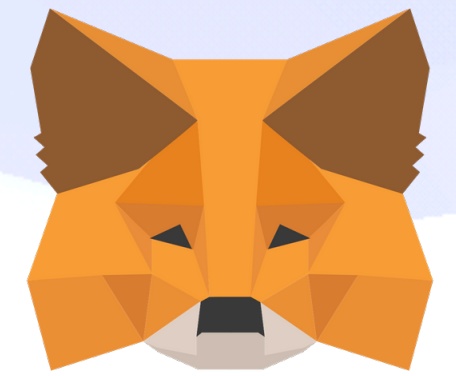
- ♦ **Community:** <https://github.com/ucan-wg>



Resources 

Further Reading

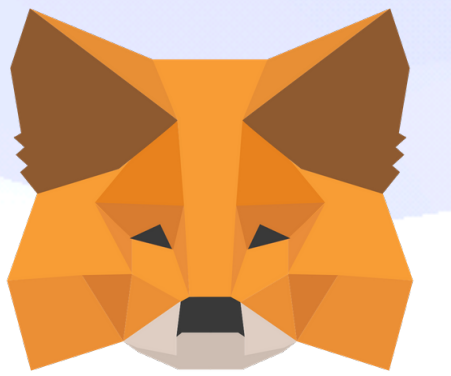
- Community: <https://github.com/ucan-wg>



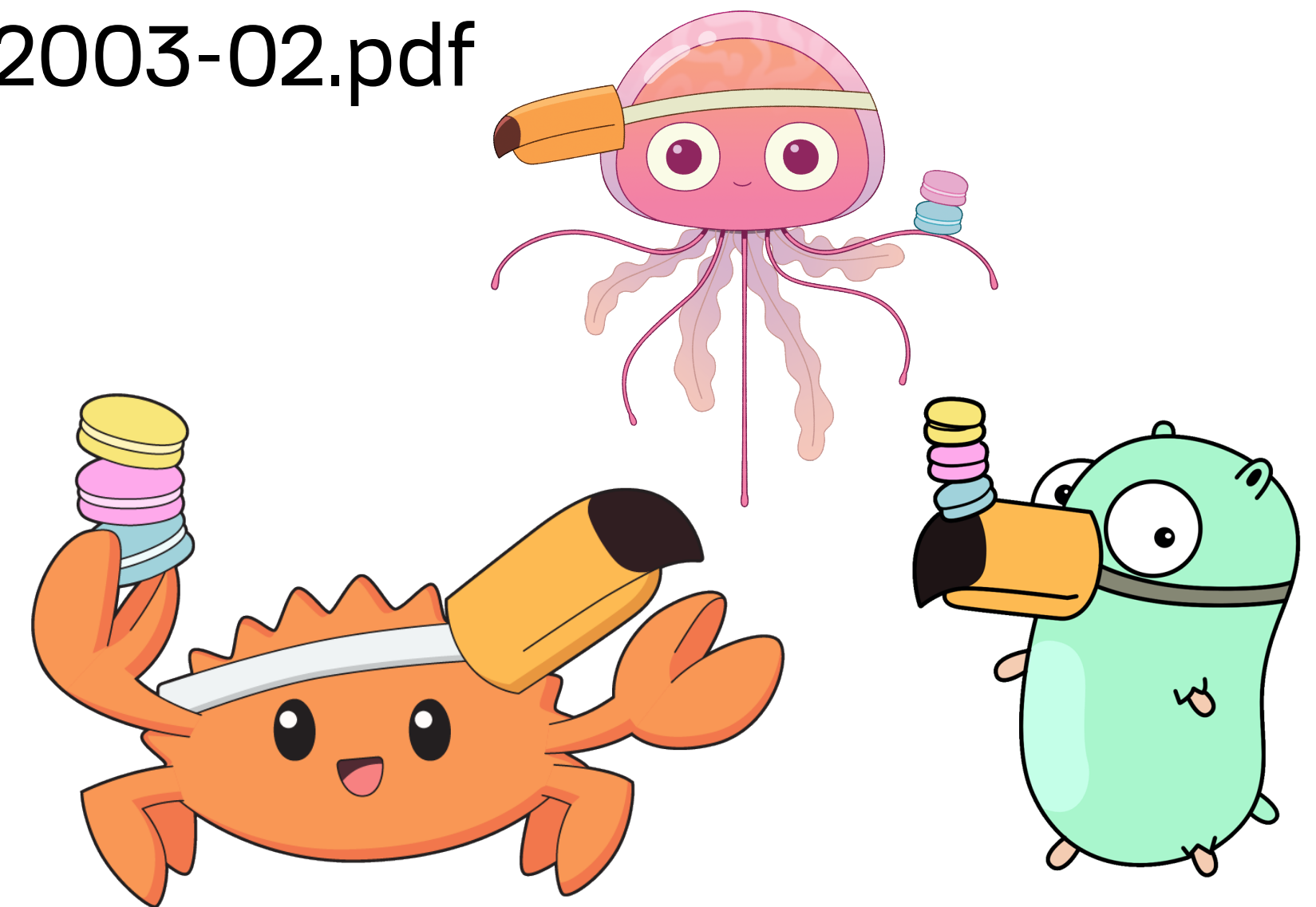
Resources 

Further Reading

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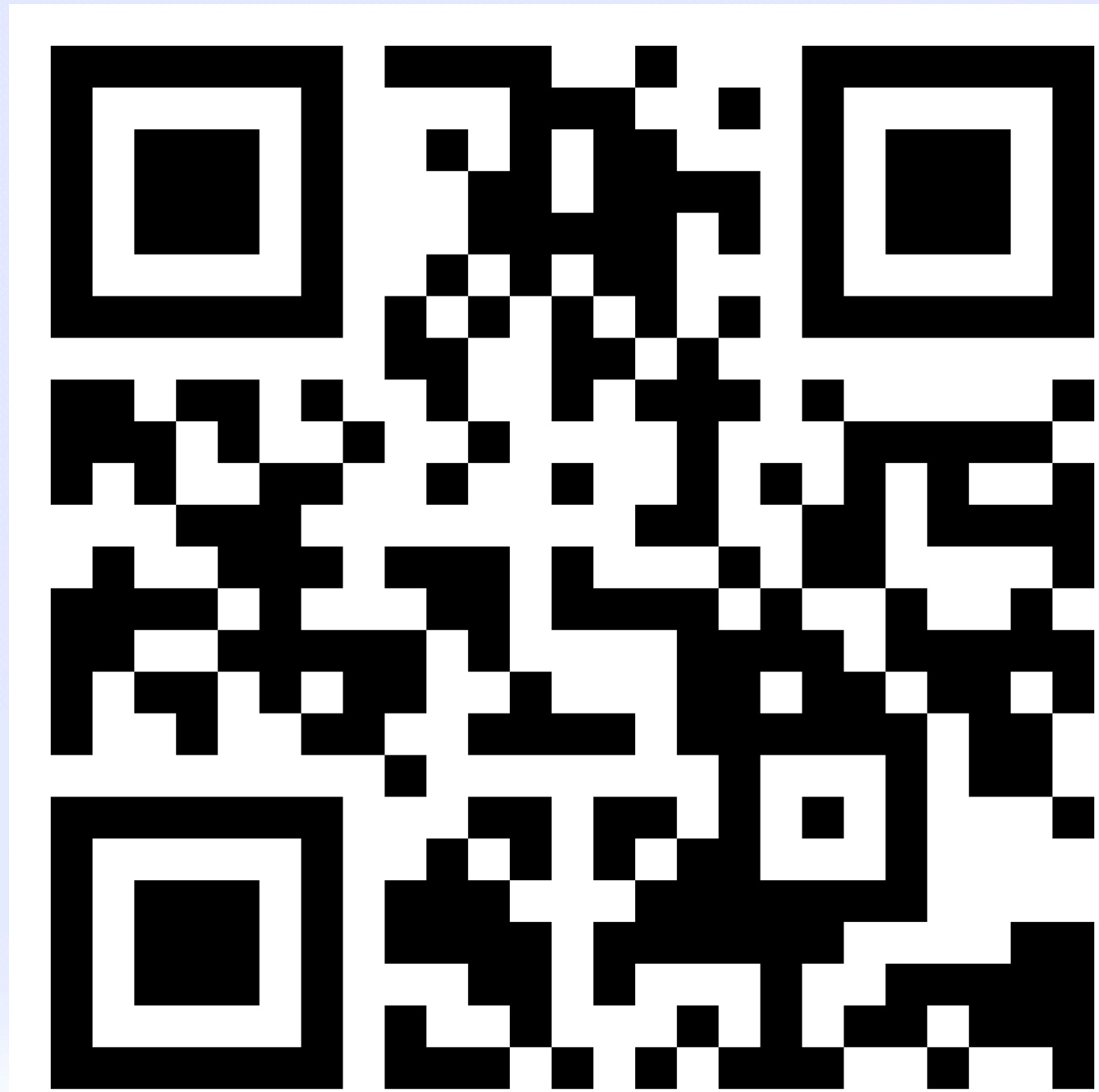
- ◆ **Capability Myths Demolished:** <https://srl.cs.jhu.edu/pubs/SRL2003-02.pdf>



Resources 

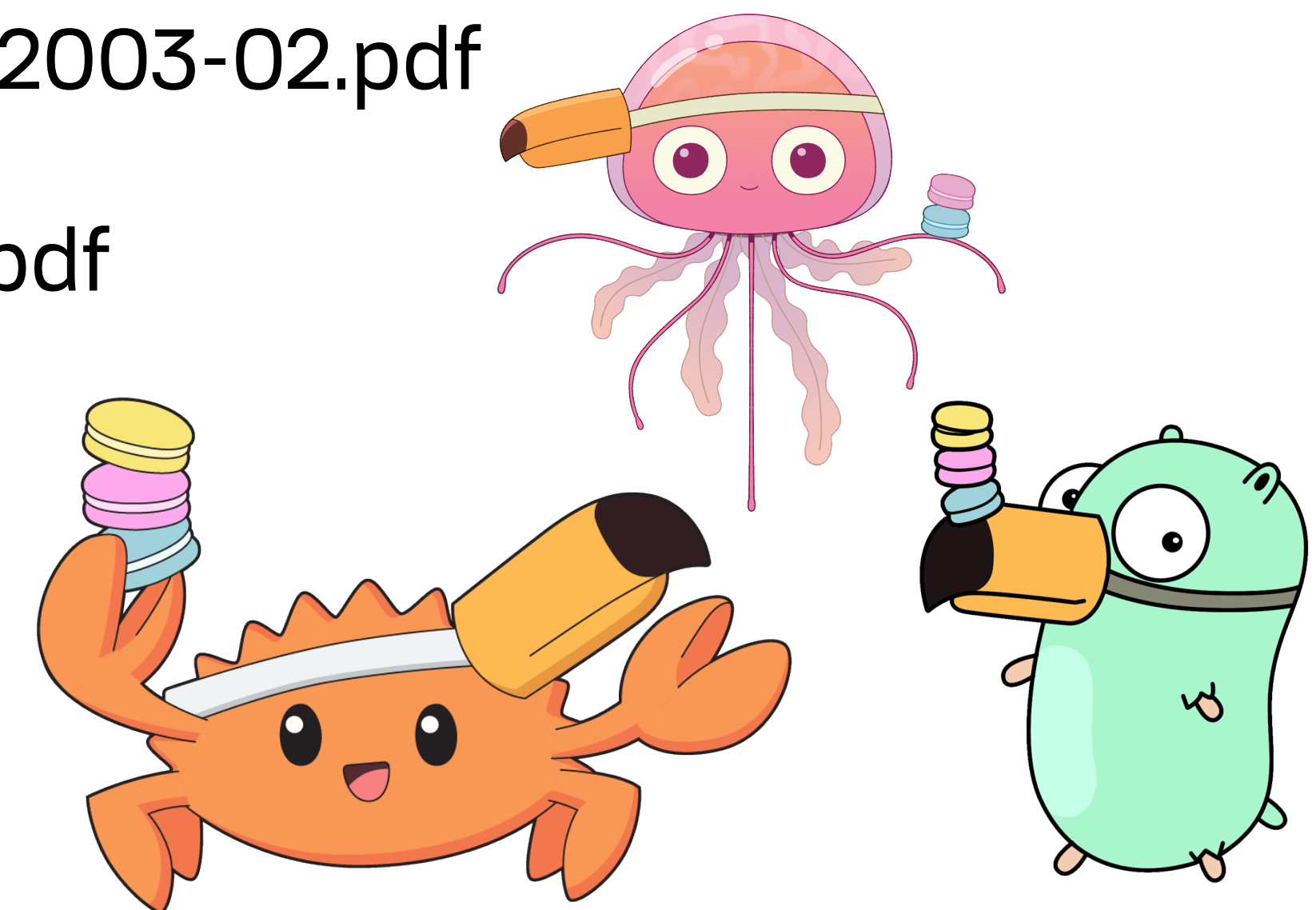
Further Reading

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- ◆ **Capability Myths Demolished:** <https://srl.cs.jhu.edu/pubs/SRL2003-02.pdf>

- ◆ **ACLs Don't:** <http://waterken.sourceforge.net/acldsont/current.pdf>



Resources 

Further Reading

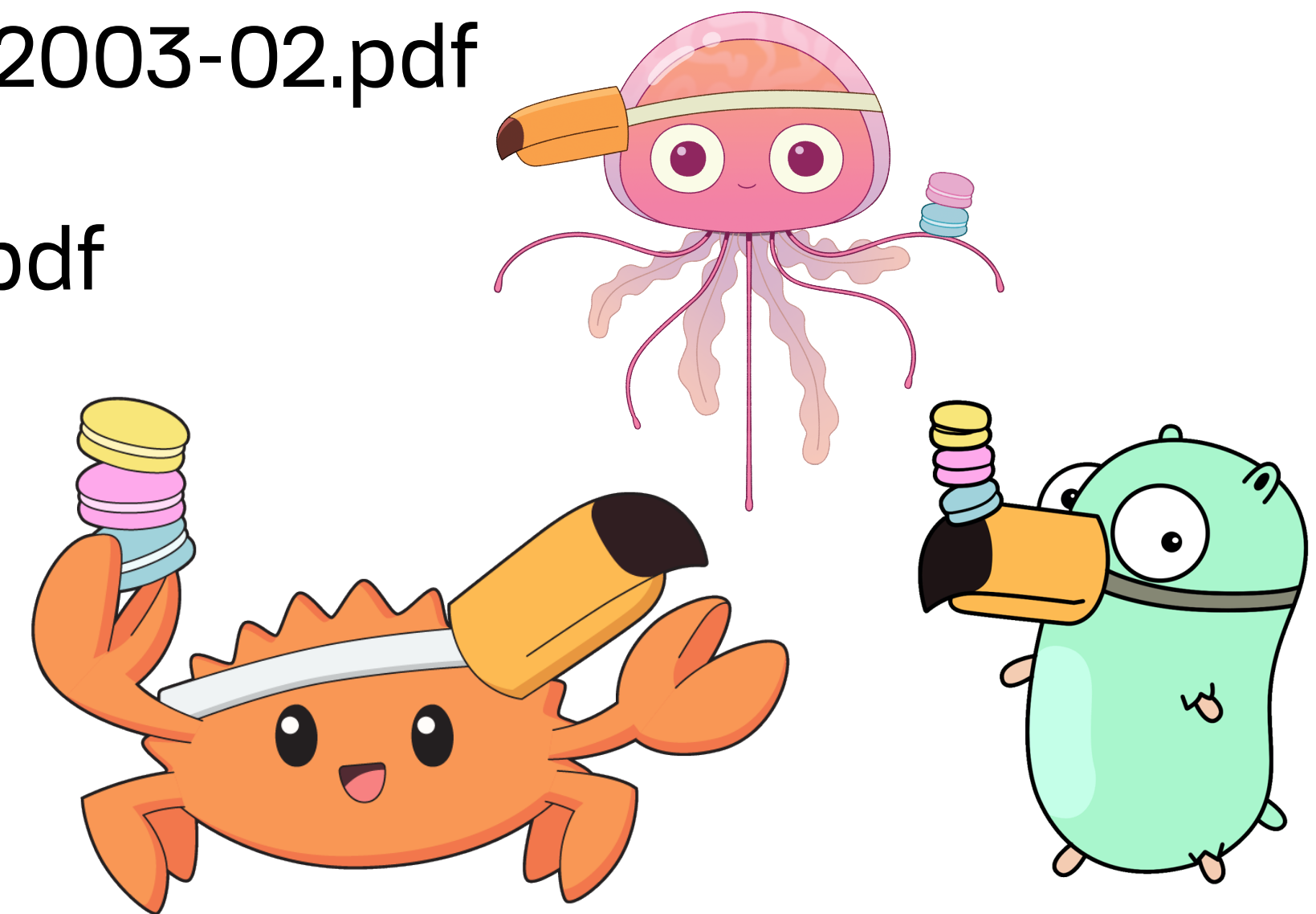
- ◆ **Community:** <https://github.com/ucan-wg>



- ◆ **Capability Myths Demolished:** <https://srl.cs.jhu.edu/pubs/SRL2003-02.pdf>

- ◆ **ACLs Don't:** <http://waterken.sourceforge.net/acldsont/current.pdf>

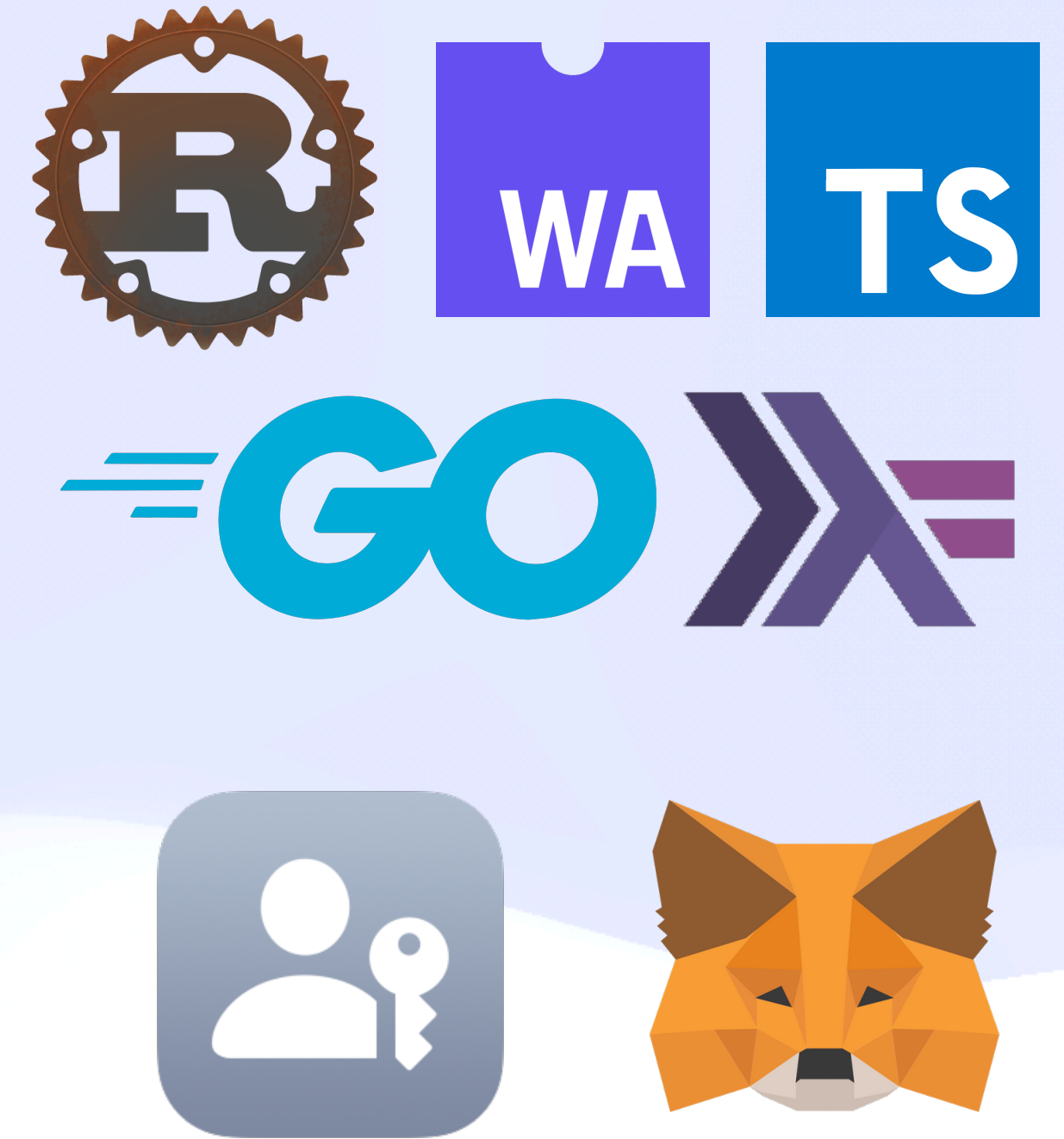
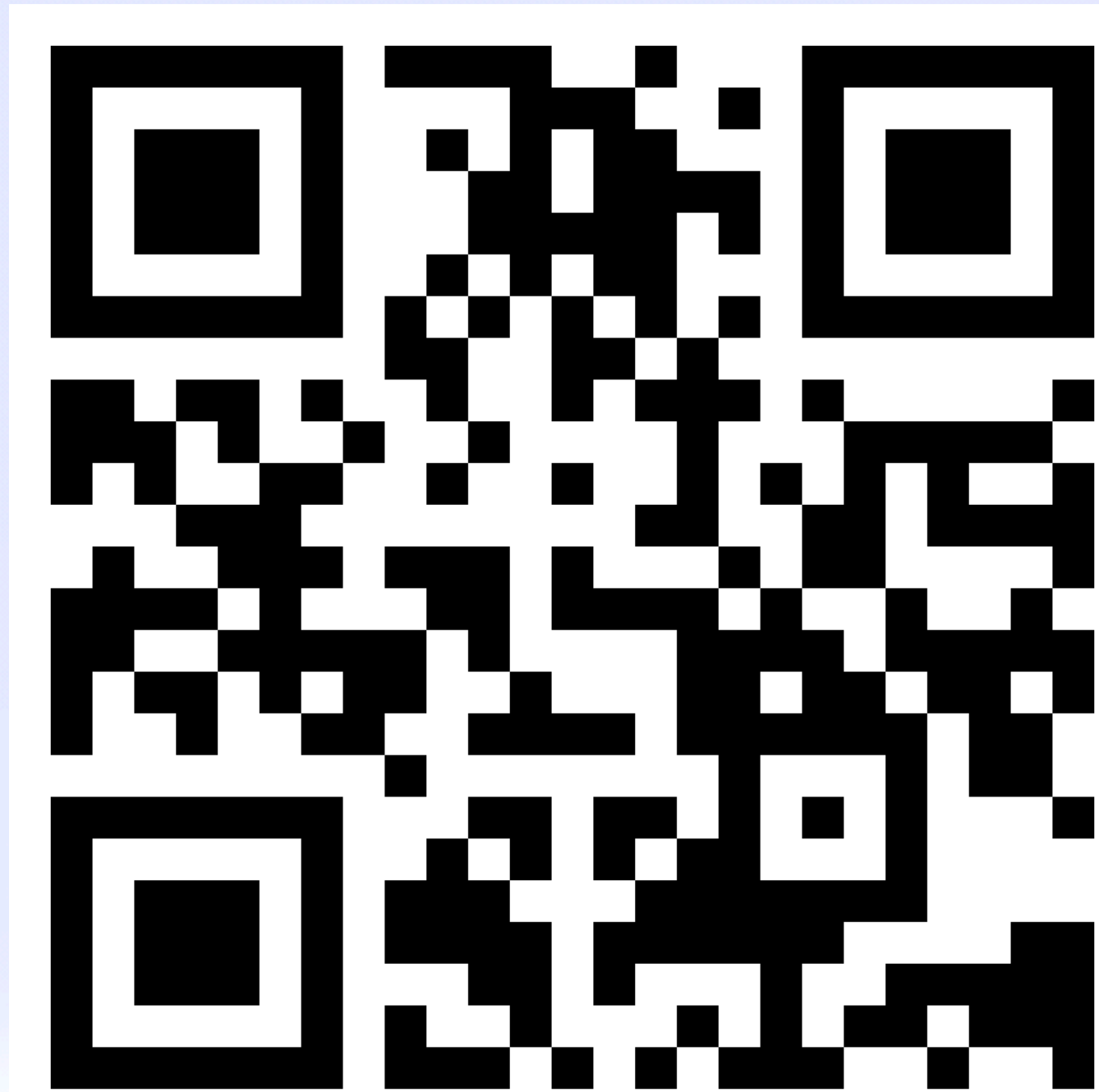
- ◆ **ERights:** <https://erights.org>



Resources 

Further Reading

- ◆ **Community:** <https://github.com/ucan-wg>

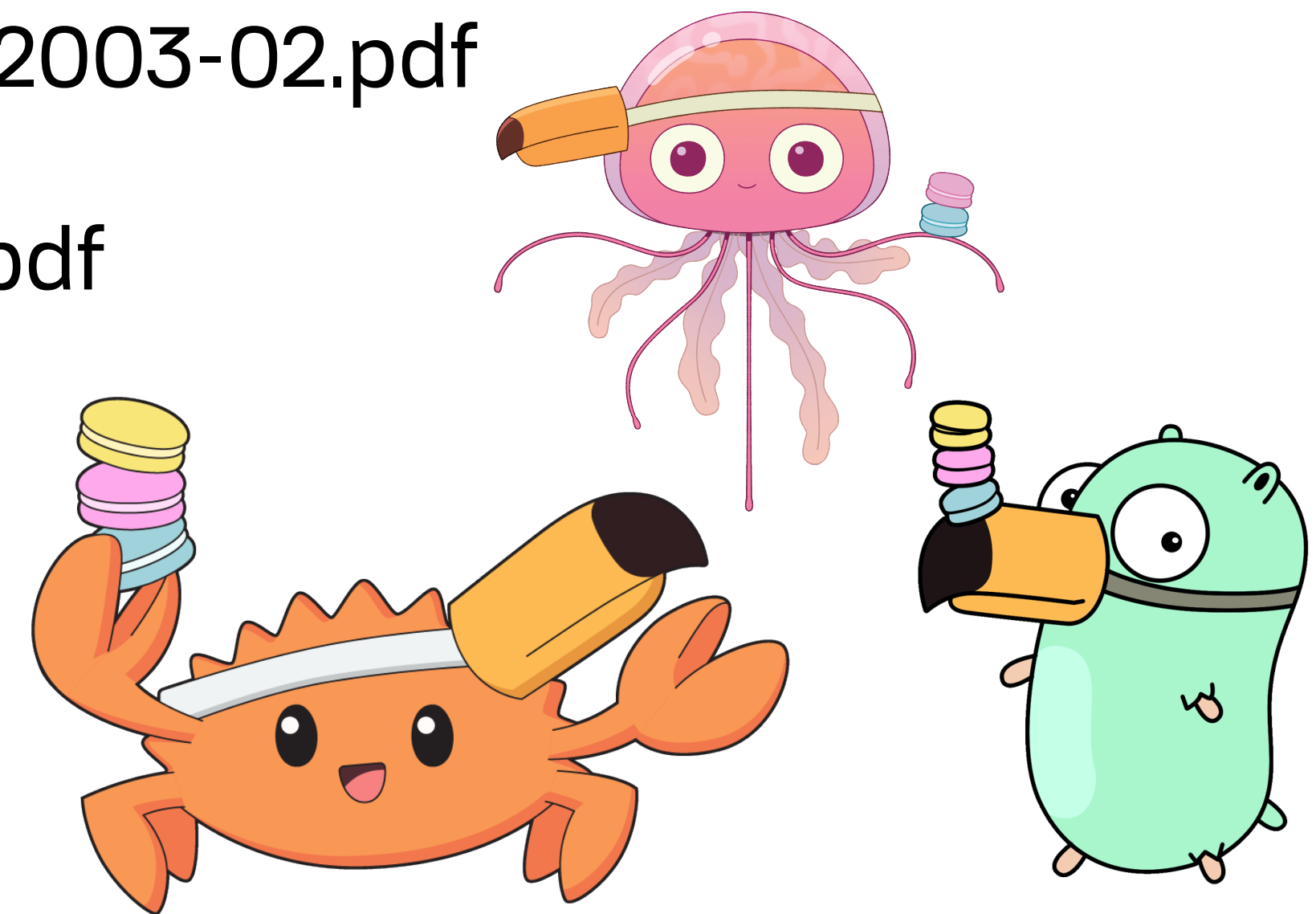


- ◆ **Capability Myths Demolished:** <https://srl.cs.jhu.edu/pubs/SRL2003-02.pdf>

- ◆ **ACLs Don't:** <http://waterken.sourceforge.net/acldsont/current.pdf>

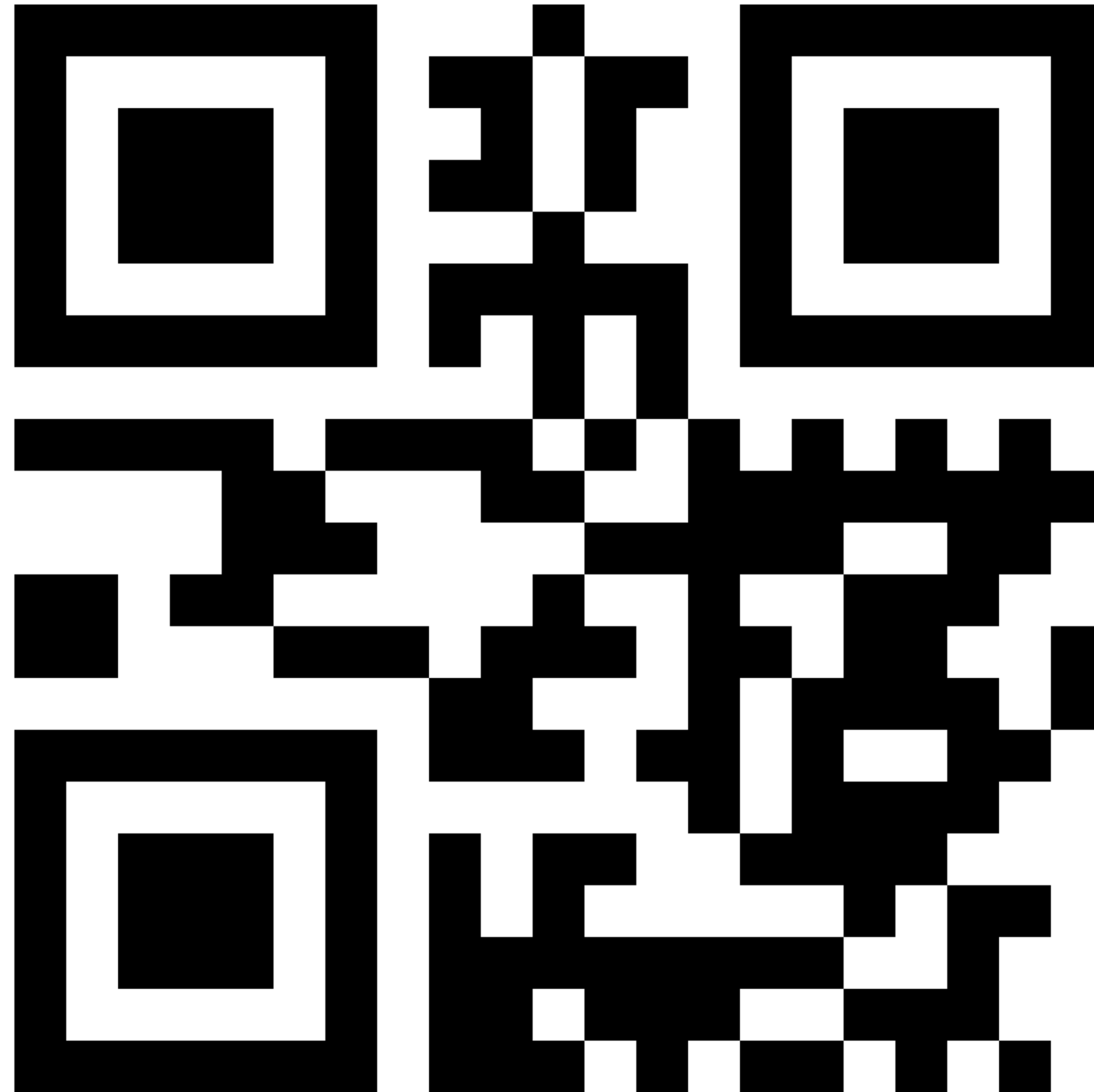
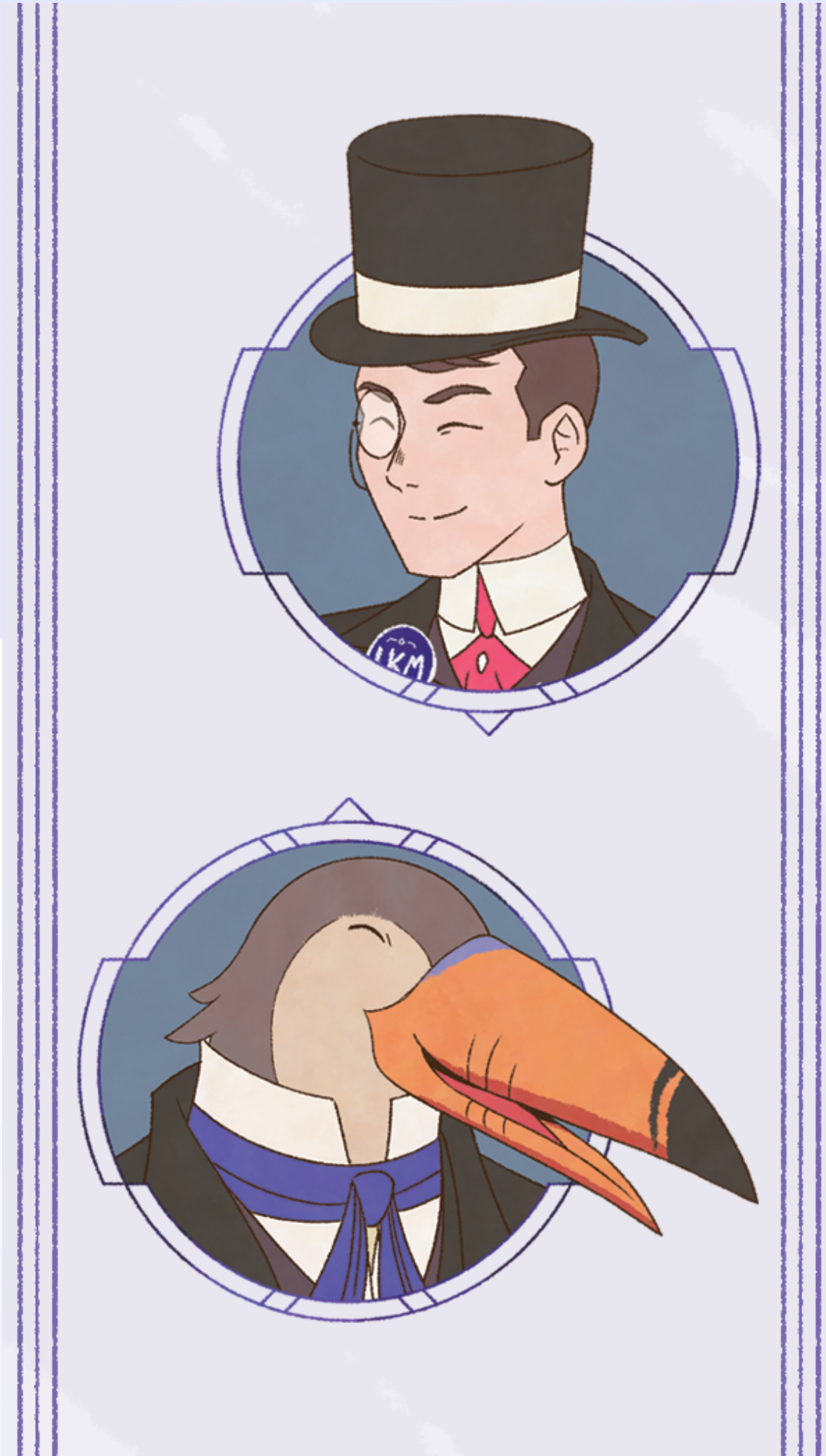
- ◆ **ERights:** <https://erights.org>

- ◆ **SPKI:** <https://theworld.com/~cme/html/spki.html>



Resources 

UCAN Adventure



Resources 

ucan.xyz — Online Explorer / Validator

ucan.xyz — Online Explorer / Validator

Hey there 🙋
You are using a preview version of UCAN Check. This version only supports the latest UCAN version. Try out the [UCAN library](#) to make some!

UCAN Check

Encoded

Paste an encoded UCAN

```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCIsInVudCI6IjAuNy4wLn0uY2h0WQp0IjkaWQ6a2V5Ondo2TWtZWFFCZkw4b3d6dFRDSiRlR2h0UmY2YjE4WXhYUHAzaTY2b0plbThMM1HSIsImF0dCI6W3sid25mcy16ImRlbW91c2VYLmZpc3Npb24ubmF1ZS9wdW3saWMvcGhvdG9zLyIsImNhcCI6Ikh9WRV3XUkiUR539XSwiZXBwIjo5MjU2OTM5NTA1LCJpc3MiOiJkaWQ6a2V5Ondo2TWtWNUVzejlzMK1Ic3FZdkxvY2N5SHdYVnVNeVpLcHE3OUd0NDVmRkdFWlI5OStSIm5iZi6MTYzOTYwODI5MywiczH3MjIjpbXX0.4TNhuHRrPG9aHo869HXlsNK8_FmIshQ5GzG4iHN2NKk-yKTbAMoFwTuptG0XFGNivHulPpIvZyYDvDexo76kAw
```

Decoded

Header

```
{ "alg": "EdDSA", "typ": "JWT", "ucv": "0.7.0" }
```

Payload

```
{ "aud": "did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ", "att": [ { "wnfs": "demouser.fission.name/public/photos/", "cap": "OVERWRITE" } ], "exp": 9256939505, "iss": "did:key:z6Mkp5Esz9s2MHsqYvLoccyHwX5SeyZKpq79Gt45fFGEZR99", "nbf": 1639608293, "prf": [] }
```

Signature

```
4TNhuHRrPG9aHo869HXlsNK8_FmIshQ5GzG4iHN2NKk-yKTbAMoFwTuptG0XFGNivHulPpIvZyYDvDexo76kAw
```

Payload

```
{ "aud": "did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ", "att": [ { "wnfs": "demouser.fission.name/public/photos/", "cap": "OVERWRITE" } ], "exp": 9256939505, "iss": "did:key:z6Mkp5Esz9s2MHsqYvLoccyHwX5SeyZKpq79Gt45fFGEZR99", "nbf": 1639608293, "prf": [] }
```

Delegate 1 Selected


Valid UCAN. The UCAN is valid and has not expired.

Explanation

Please see the [JWT RFC](#) and the [UCAN specification](#) for more details.

Field	Long Name	Value	Details
alg	Signature Algorithm	EdDSA	The algorithm used to sign the UCAN
typ	Type	JWT	UCANs are JWTs
ucv	UCAN Version	0.7.0	The UCAN version
iss	Issuer	did:key:z6Mkp5Esz9s2MHsqYvLoccyHwX5SeyZKpq79Gt45fFGEZR99	The DID of the issuer. The UCAN must be signed with the private key of the issuer to be valid.
aud	Audience	did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ	The DID of the audience
att	Attenuation	{ "wnfs": "demouser.fission.name/public/photos/", "cap": "OVERWRITE" }	Capabilities granted or delegated to the audience
exp	Expires At	9256939505	The UNIX time when the UCAN expires. This UCAN expires on May 5, 2263 at 5:05:05 AM PDT.
nbf	Not Before	1639608293	The UNIX time after which the UCAN is valid. This UCAN became valid on December 15, 2021 at 2:44:53 PM PST.

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UCAN Check

Encoded

Paste an encoded UCAN

```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9IjwiYm9keiJ9.eyJhdWQiOiJkaWQ6a2V5Ono2TWtZWFFCZkw4b3d6dFRDSiRlR2h0UmY2YjE4WXBhYUUAzaTY2b0plbThMM1IHS1sImF0dCI6I25mcy16ImRlbnW91c2VYLnZpc3Npb24ubmF1ZS9wdWJ3aWVmcGhvdG9zLyIsImNhcCI6Ij9WRVJ3XkUUR39XSz9XhWj05MjU2OTM5NTA1LCJpc3MiOiJkaWQ6a2V5Ono2TWtWNUVzejlzMK1Ic3FZdkxvY2N5SHdYVWVNeVpLcHE3OUd0NDVmRkdFWlI5OStlIm5iIjoiMTYzOTYwODI5MywvH3MjIjpbXX0.4TNhuHRzPG9aHo869HX1sNKB_Fm1ShQ5GzG4iN2NKK-ykTbAMoFwTuptG0XfGNIvHulPp1VzZYDvDexo76kAw
```

Decoded

Header

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{ "alg": "EdDSA", "typ": "JWT", "ucv": "0.7.0" }
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{ "aud": "did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ", "att": [ { "wnfs": "demouser.fission.name/public/photos/", "cap": "OVERWRITE" } ], "exp": 9256939505, "iss": "did:key:z6Mkp5Esz9s2MHsqYvLoccyHwX5SeyZKpq79Gt45fFGEZR99", "nbf": 1639608293, "prf": [] }
```

Signature

```
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```

✔ Valid UCAN. The UCAN is valid and has not expired. ✕

Explanation

Please see the [JWT RFC](#) and the [UCAN specification](#) for more details.

Field	Long Name	Value	Details
alg	Signature Algorithm	EdDSA	The algorithm used to sign the UCAN
typ	Type	JWT	UCANs are JWTs
ucv	UCAN Version	0.7.0	The UCAN version
iss	Issuer	did:key:z6Mkp5Esz9s2MHsqYvLoccyHwX5SeyZKpq79Gt45fFGEZR99	The DID of the issuer. The UCAN must be signed with the private key of the issuer to be valid.
aud	Audience	did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ	The DID of the audience
att	Attenuation	{ "wnfs": "demouser.fission.name/public/photos/", "cap": "OVERWRITE" }	Capabilities granted or delegated to the audience
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```

Valid	true
Issuer	did:key:z6Mkp5Esz9s2MHsqYvLoccyHwX5SeyZKpq79Gt45fFGEZR99
Audience	did:key:z6MksXQBfL8owztTCJTm7hNRf6b18YxXPp3i66oJHm8L3YGJ

✔ Valid UCAN. The UCAN is valid and has not expired. ✕

ucan.xyz
github.com/ucan-wg
lu.ma/wecan

 **thank you, IPFS ping** 

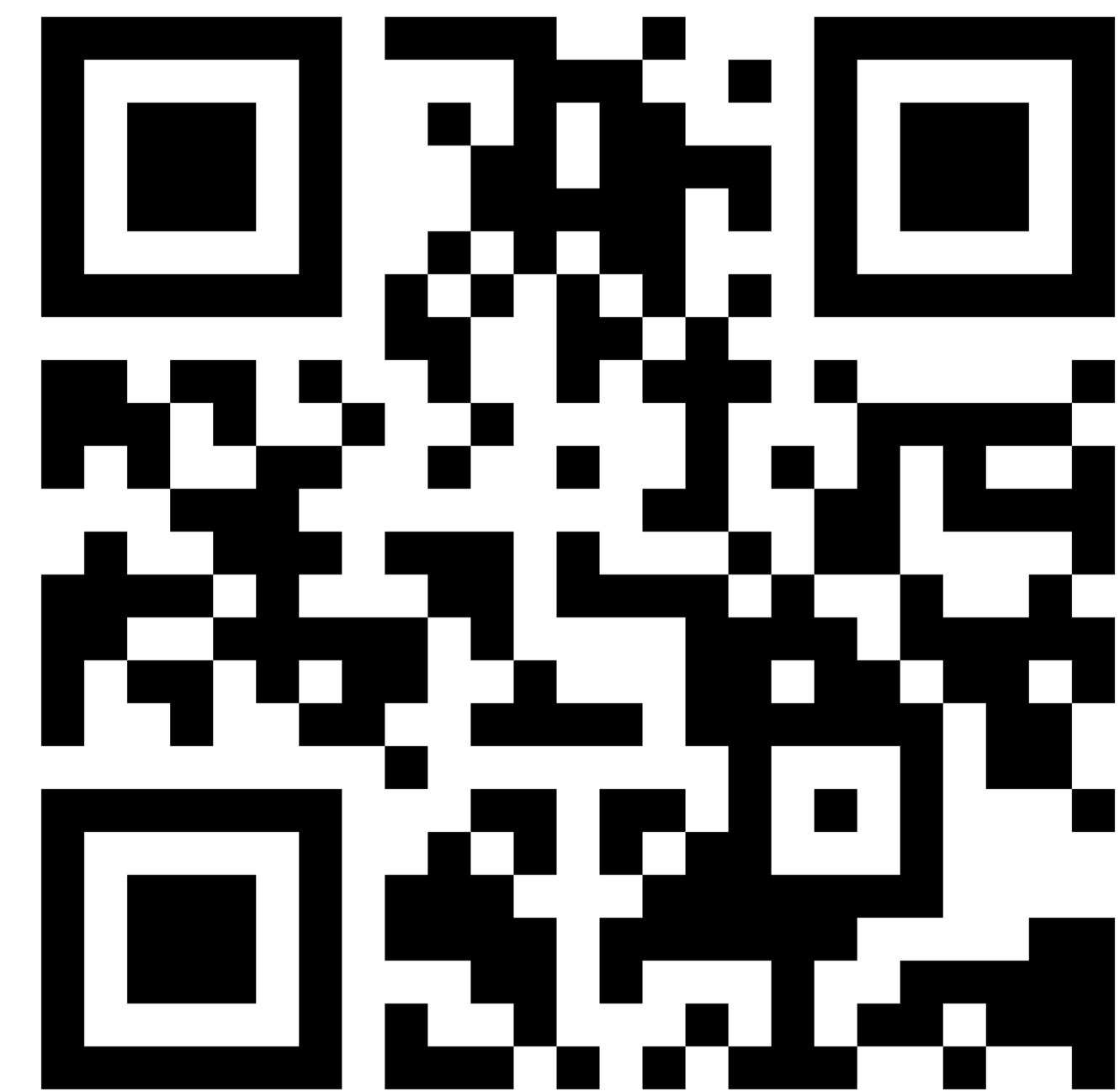
brooklyn@fission.codes
discord.gg/fissioncodes
github.com/expede

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 ***thank you, IPFS ping*** 

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github.com/expede



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I have stickers!



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github.com/expede

