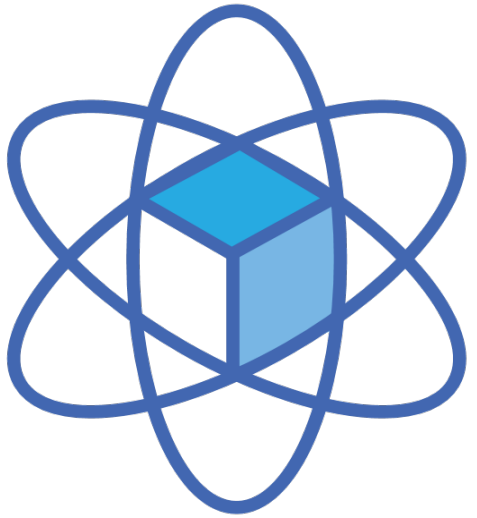
CS3 MESH4 EOSC

Connecting European Data

Modern Notification System for Sync & Share

Javier Ferrer (CERN) 2023

CS3MESH4EOSC has received funding from the European Union's Horizon 2020 Research and Innovation programme under **Grant Agreement No. 863353**.



- CERN's **Collaborative suite & EFSS**
- More than **37K users**
- Stores **over 20PB of data** using the underlying EOS infrastructure
- Recently released **2.0**: REVA + OwnCloud Next Generation Web

Occupational Health Service, Service Desk:

"I want to gather `{medical documents, passports}` *from users, so I shared a public link with them and I want to be notified every time somebody uploads a file"*

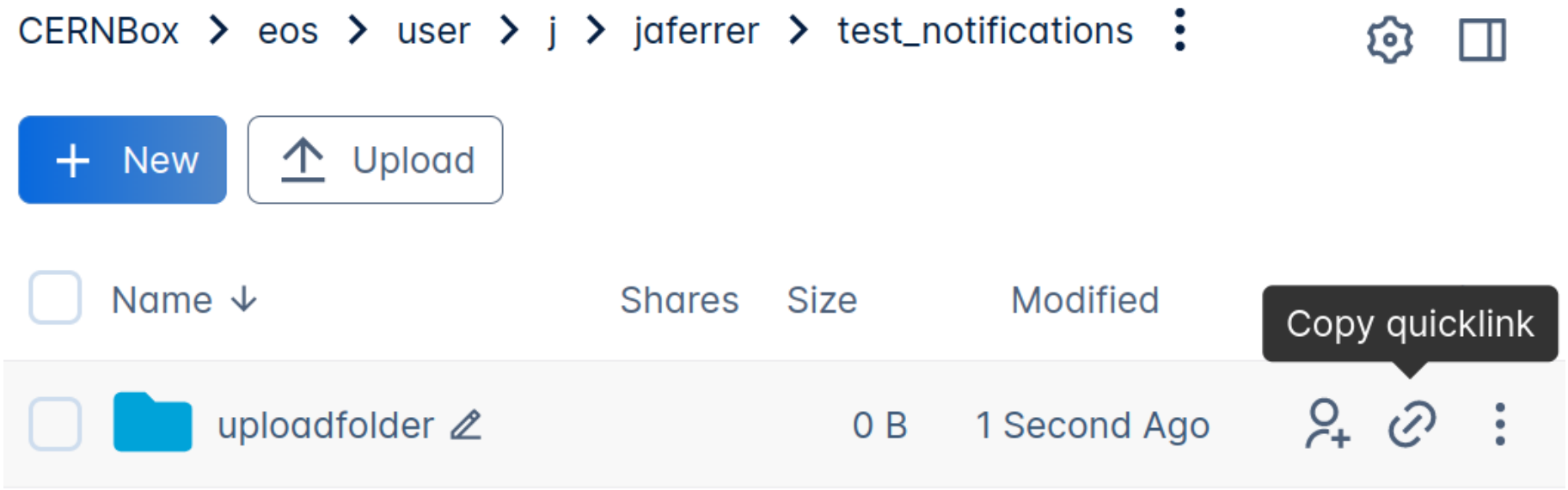
Everybody:

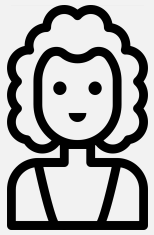
"I want CERNBox to send an email to the user I shared a file with"

Physicist:

"I automated some stuff and I want CERNBox to notify me by email when I run out of space!"

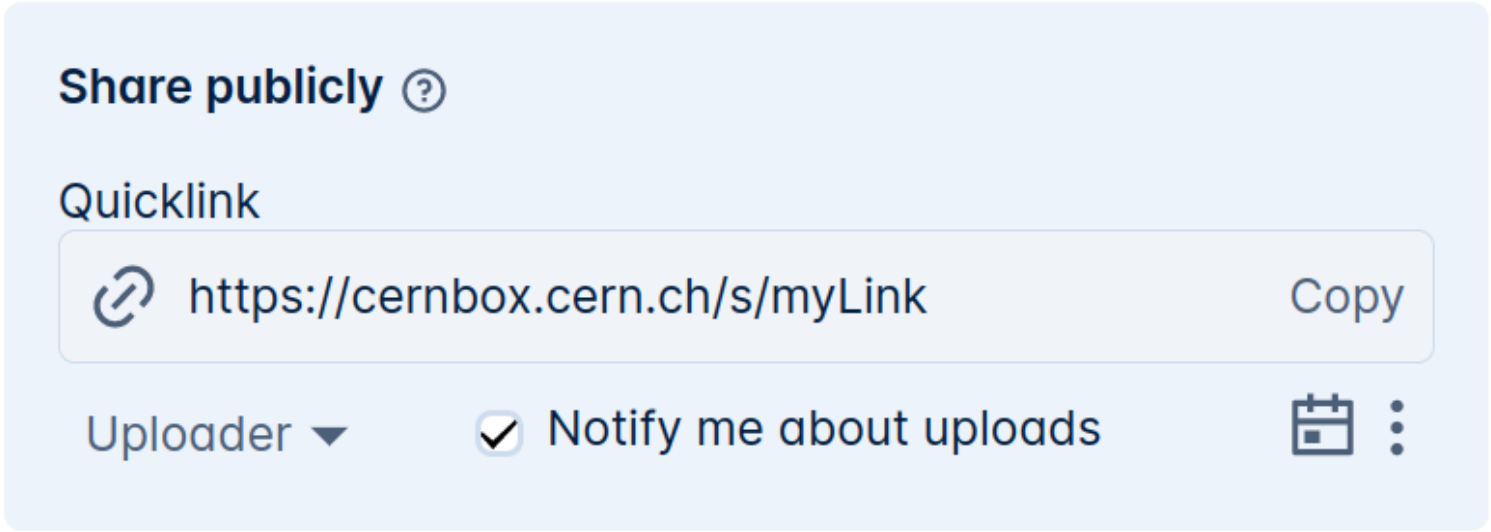
What I

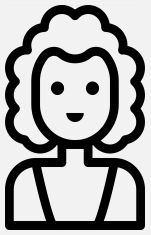




Alice creates a public link for a folder

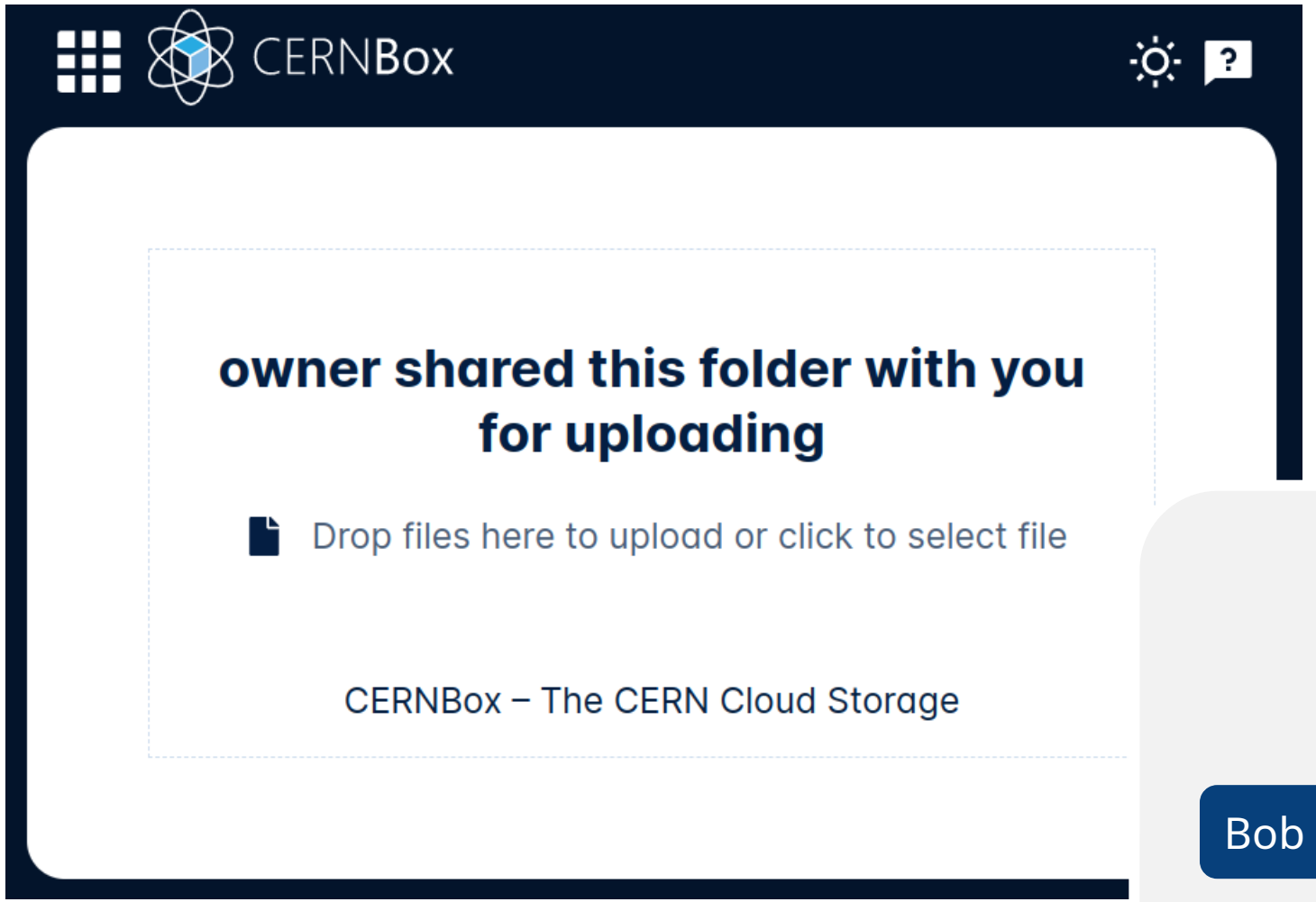
What I

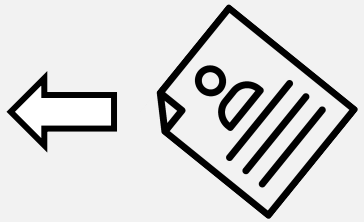




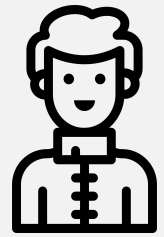
Alice sets uploader permissions and enables notifications

What I





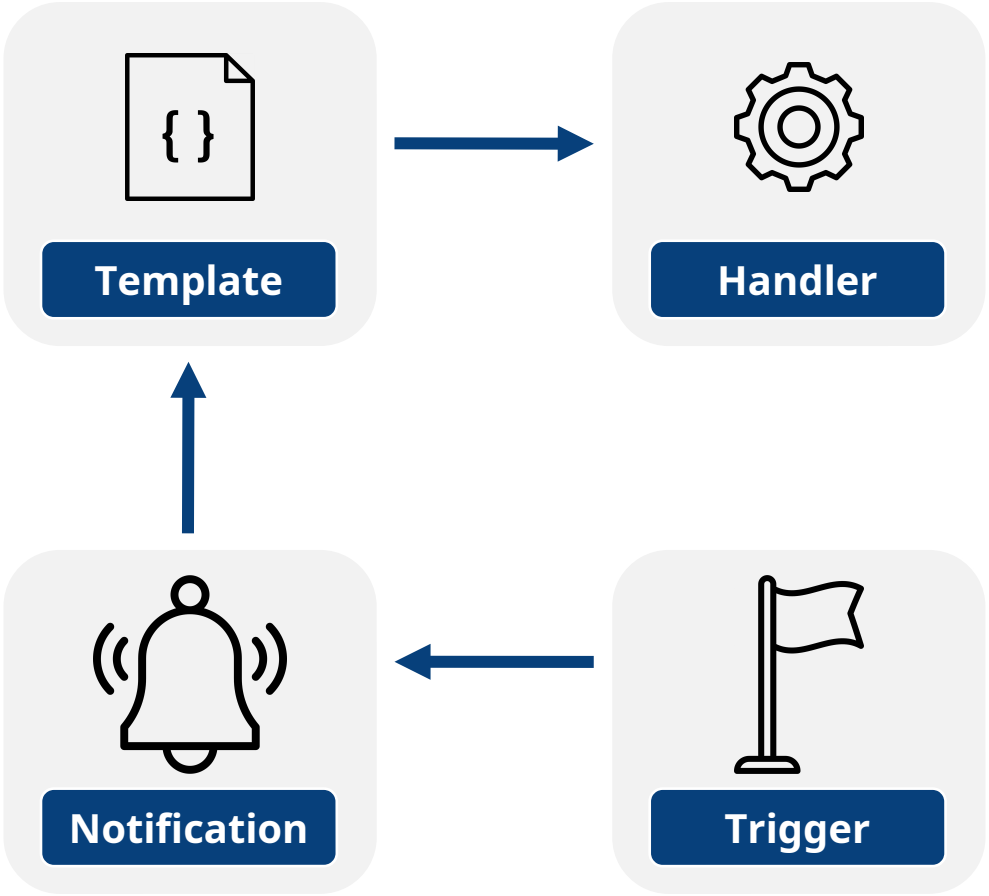
Bob uploads a file



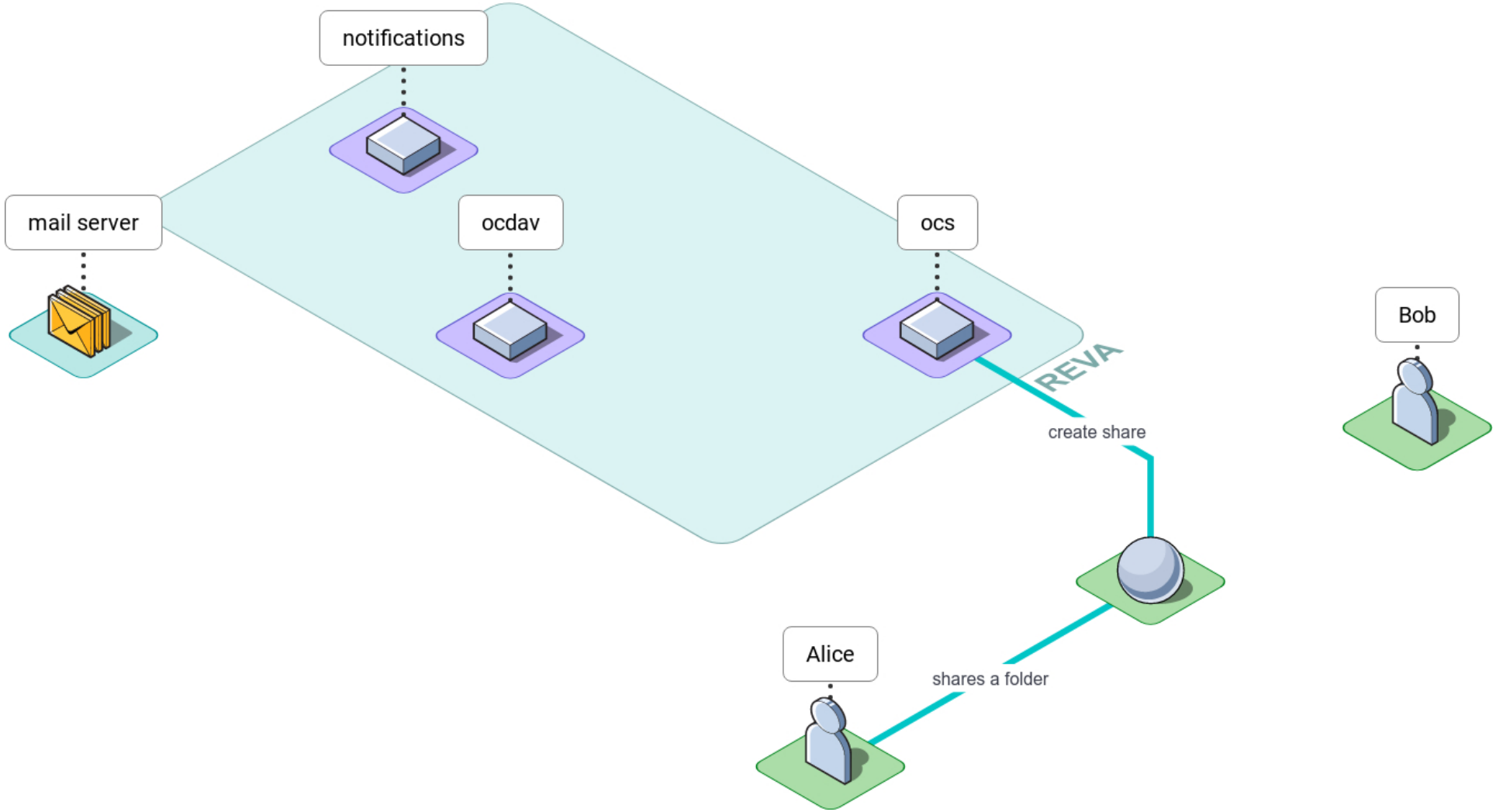
What I

Alice gets an email notification

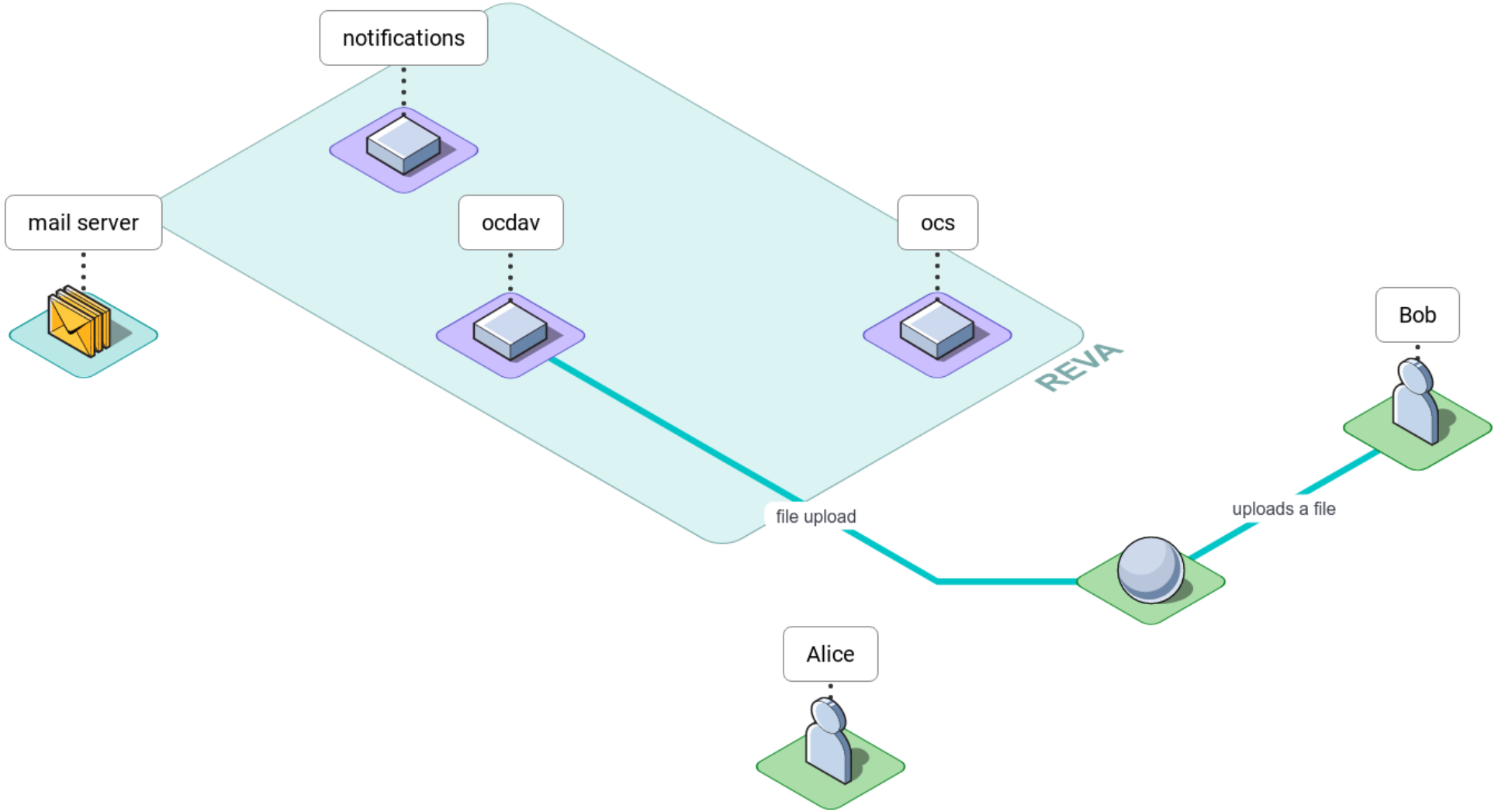
What II



How I


notifications
mail server
ocdav
ocs
REVA
Bob
create share
Alice
shares a folder

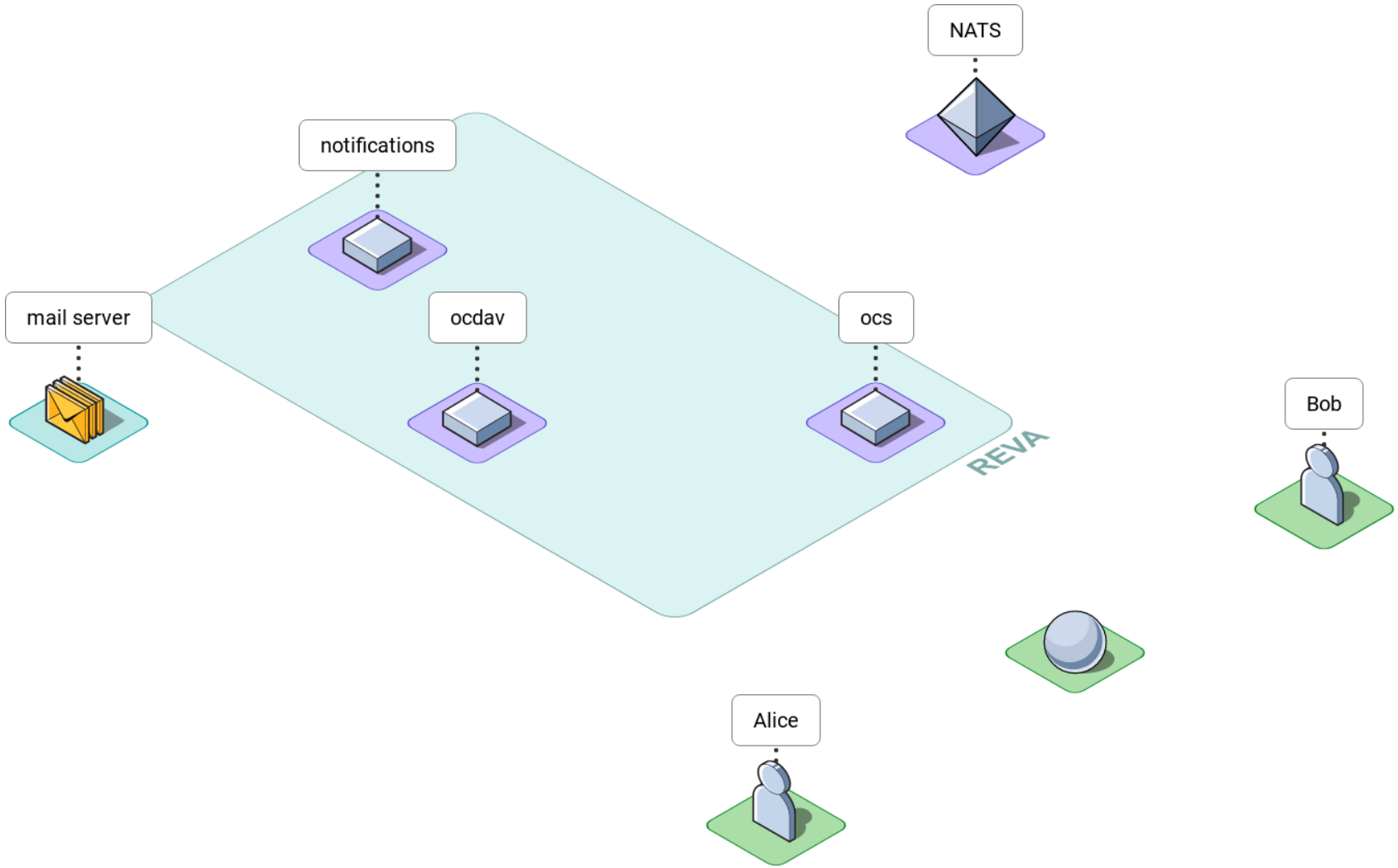
How I


notifications
mail server
ocdav
ocs
REVA
Bob
file upload
uploads a file
Alice

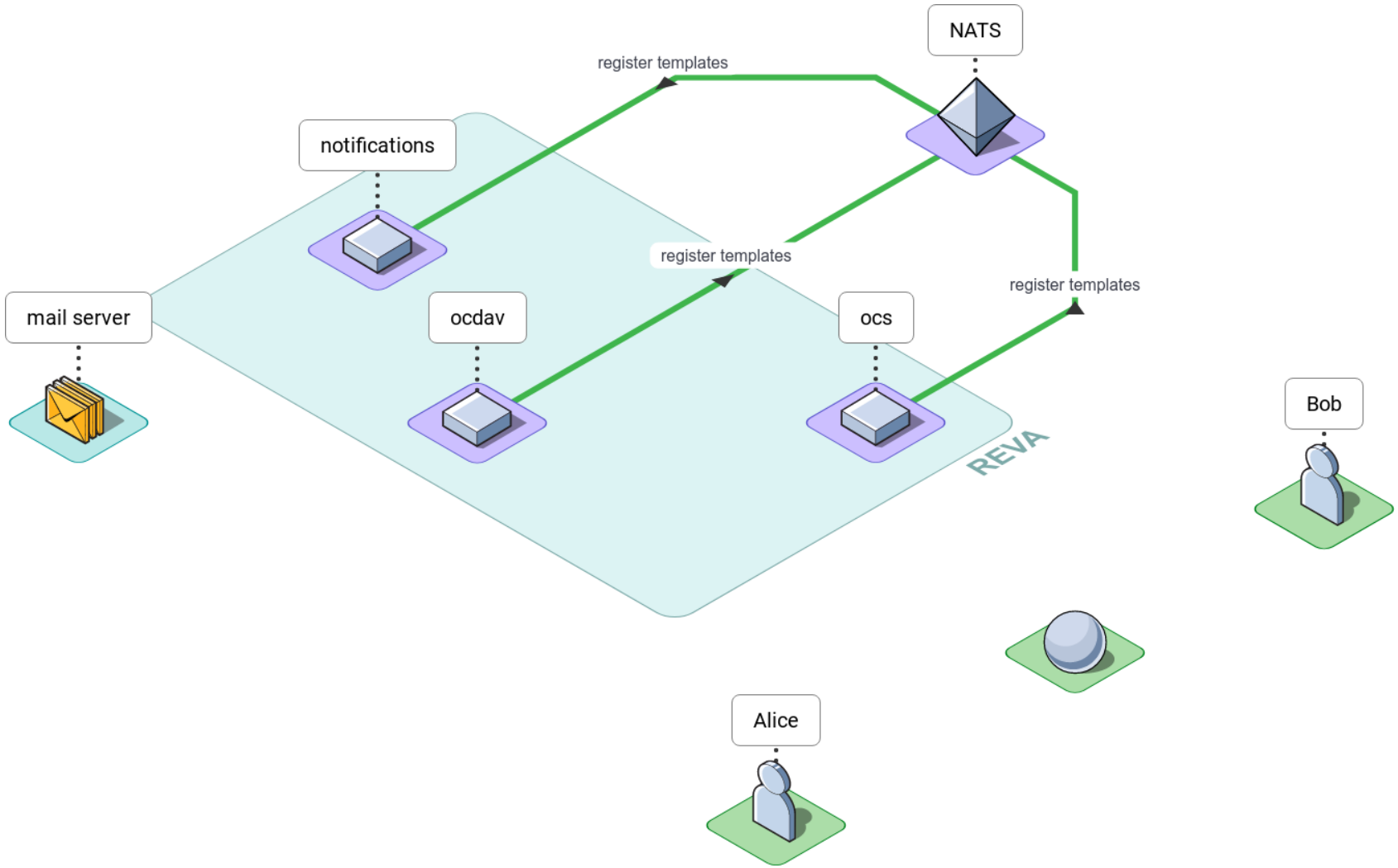
How II

- Go client
- Extremely lightweight and fast
- Very easy to get started with
- Guaranteed exactly-once delivery
- Key/Value store construct
- Security features

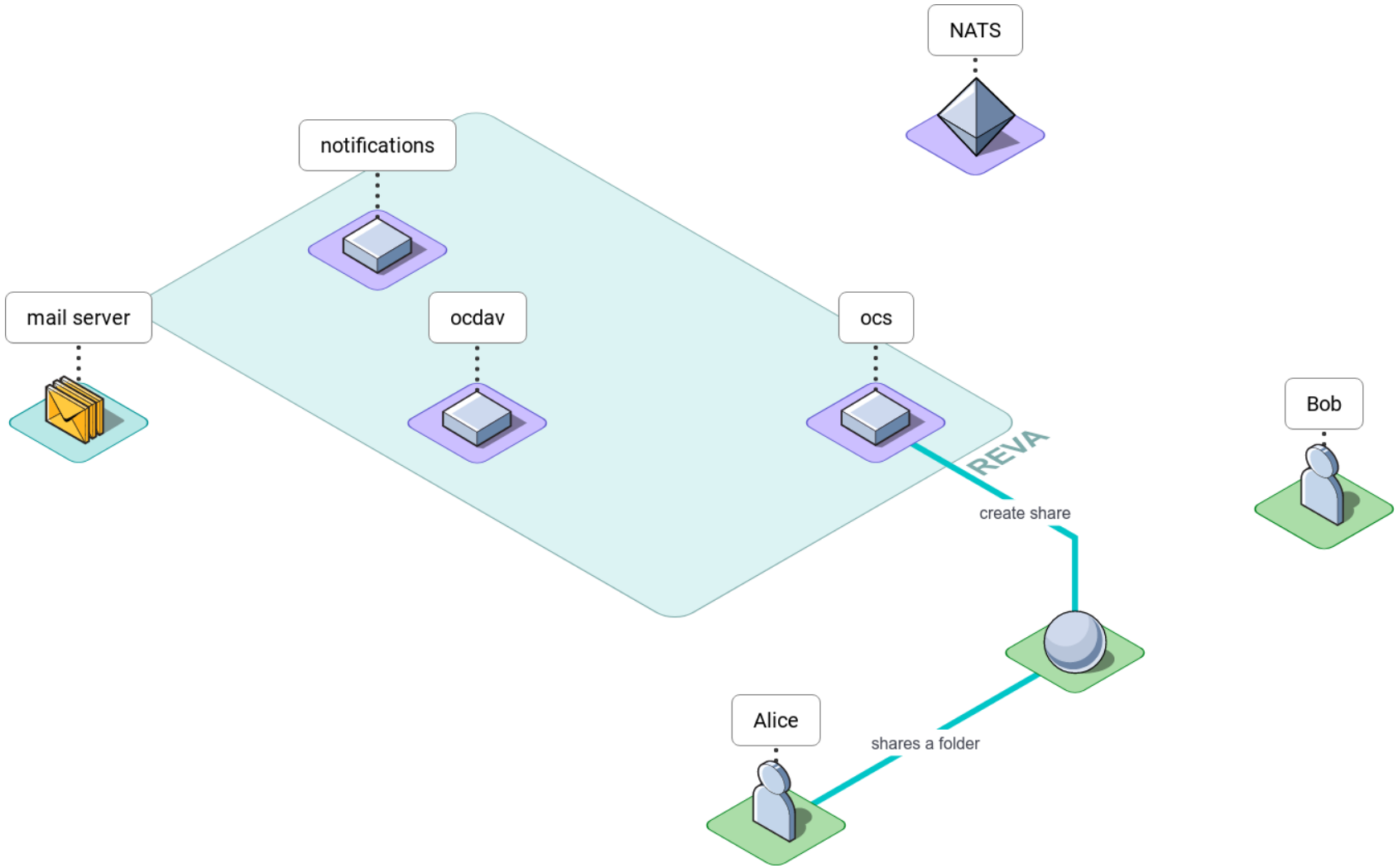
How I



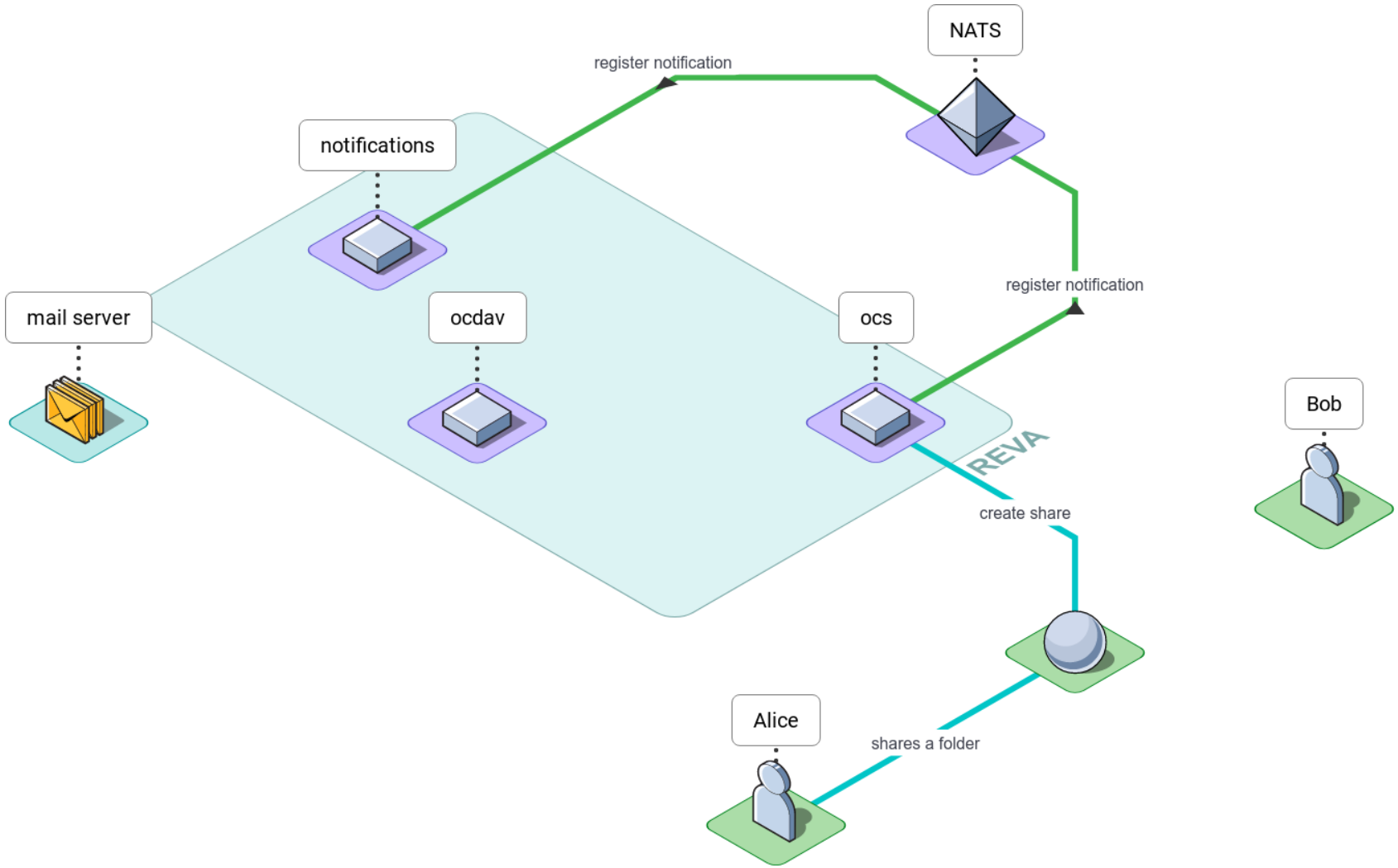
How I


NATS
register templates
notifications
register templates
register templates
mail server
ocdav
ocs
REVA
Bob
Alice

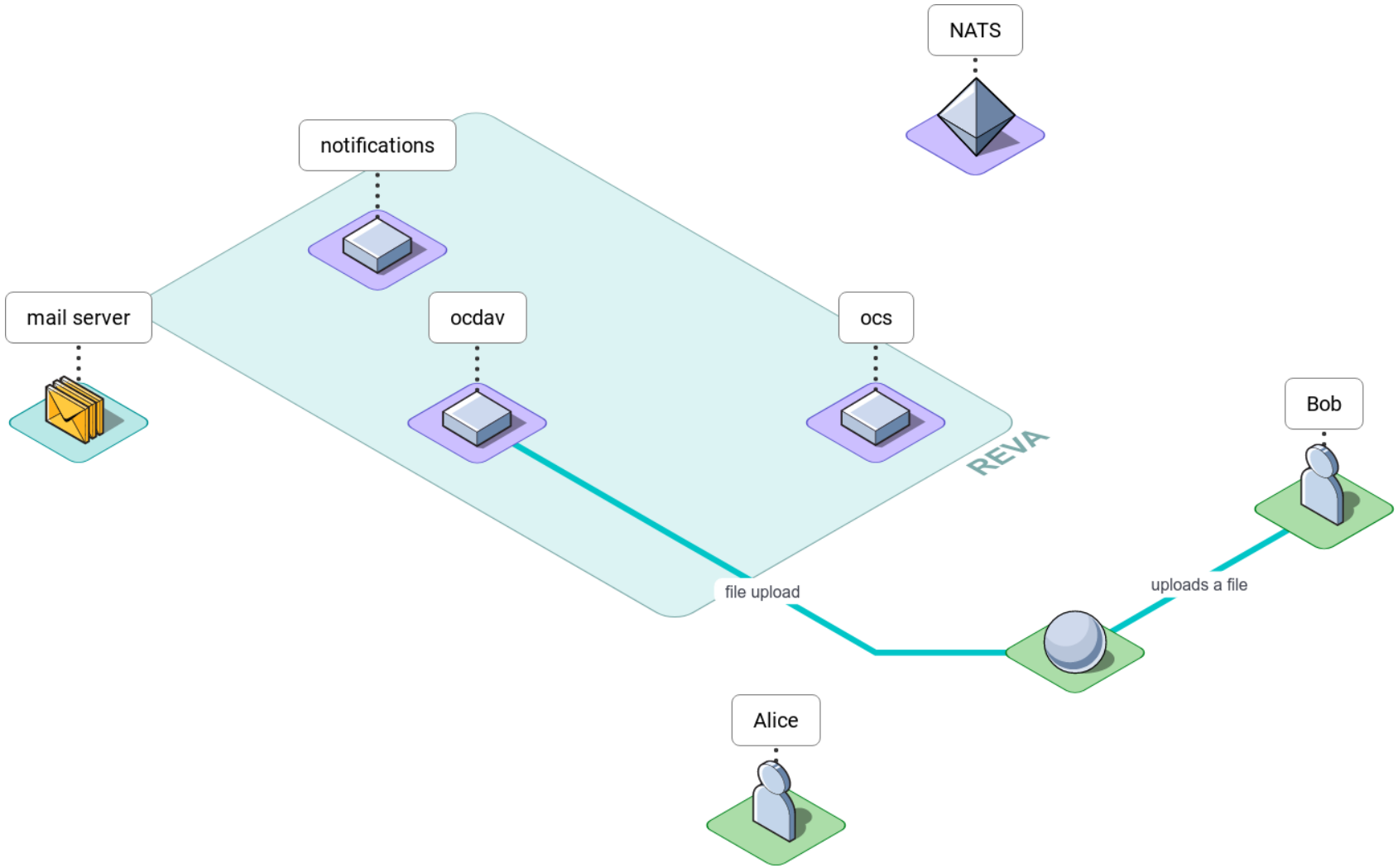
How I


NATS
notifications
mail server
ocdav
ocs
REVA
Bob
create share
Alice
shares a folder

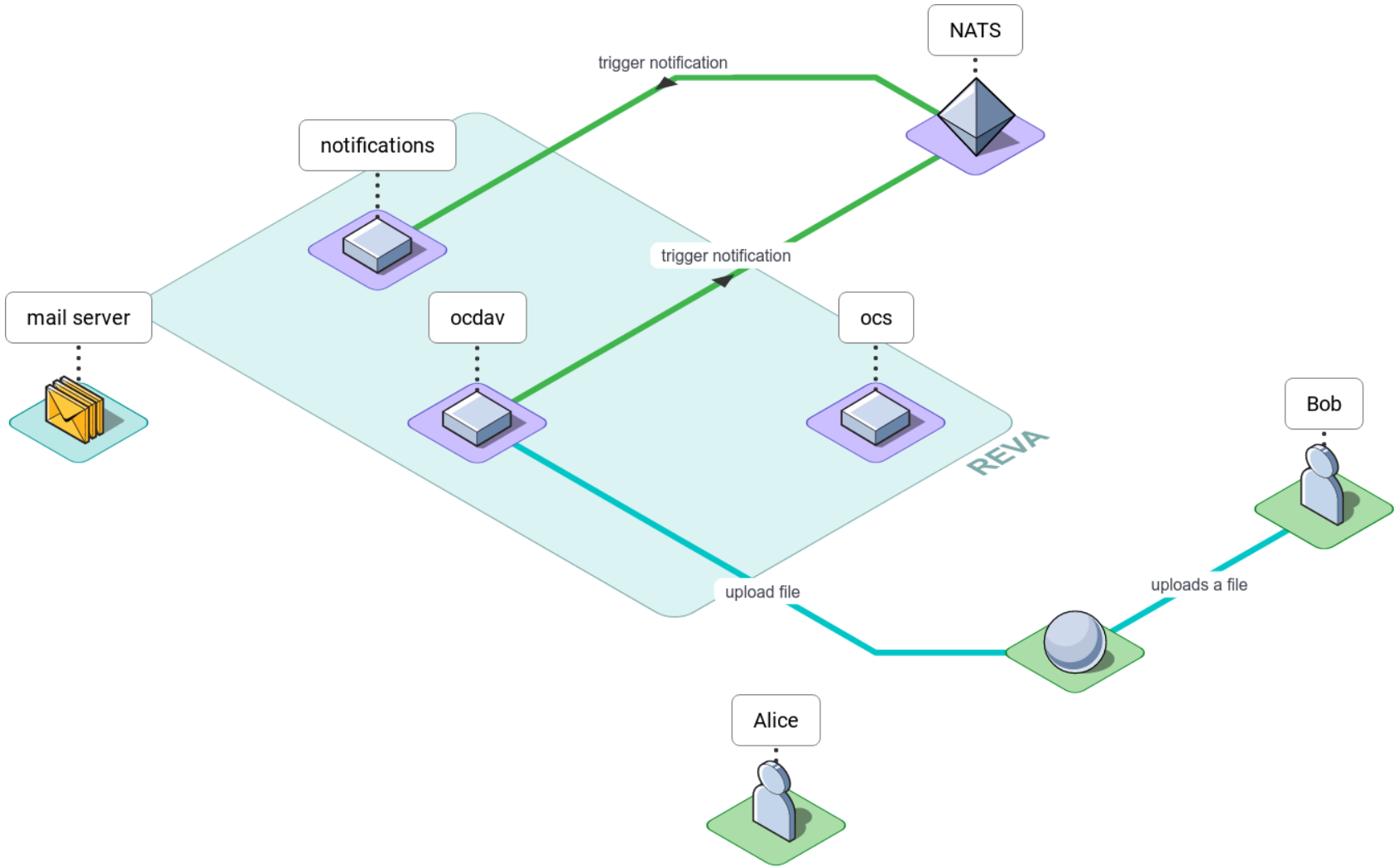
How I


NATS
register notification
notifications
register notification
mail server
ocdav
ocs
REVA
Bob
create share
Alice
shares a folder

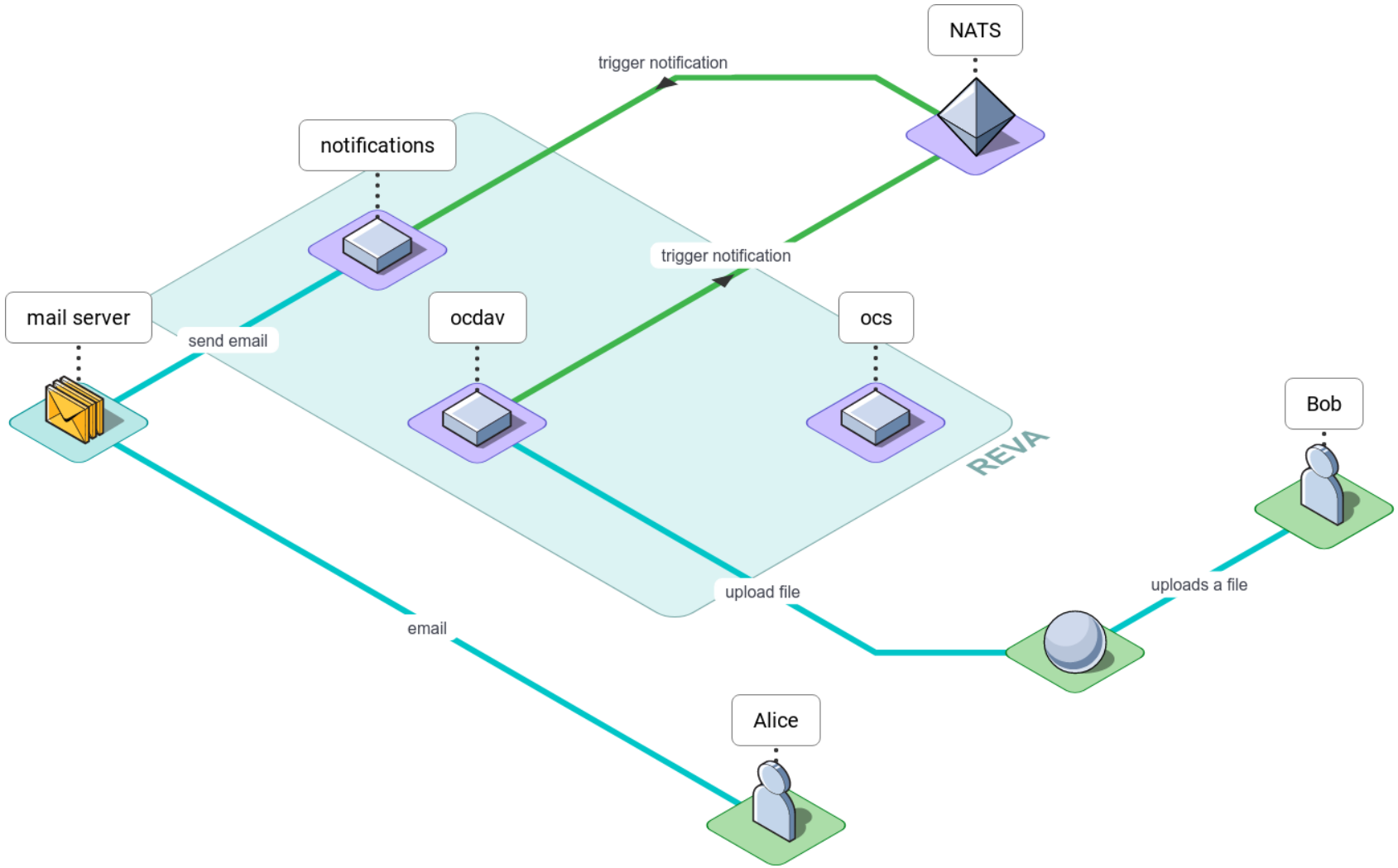
How I


NATS
notifications
mail server
ocdav
ocs
REVA
Bob
file upload
uploads a file
Alice

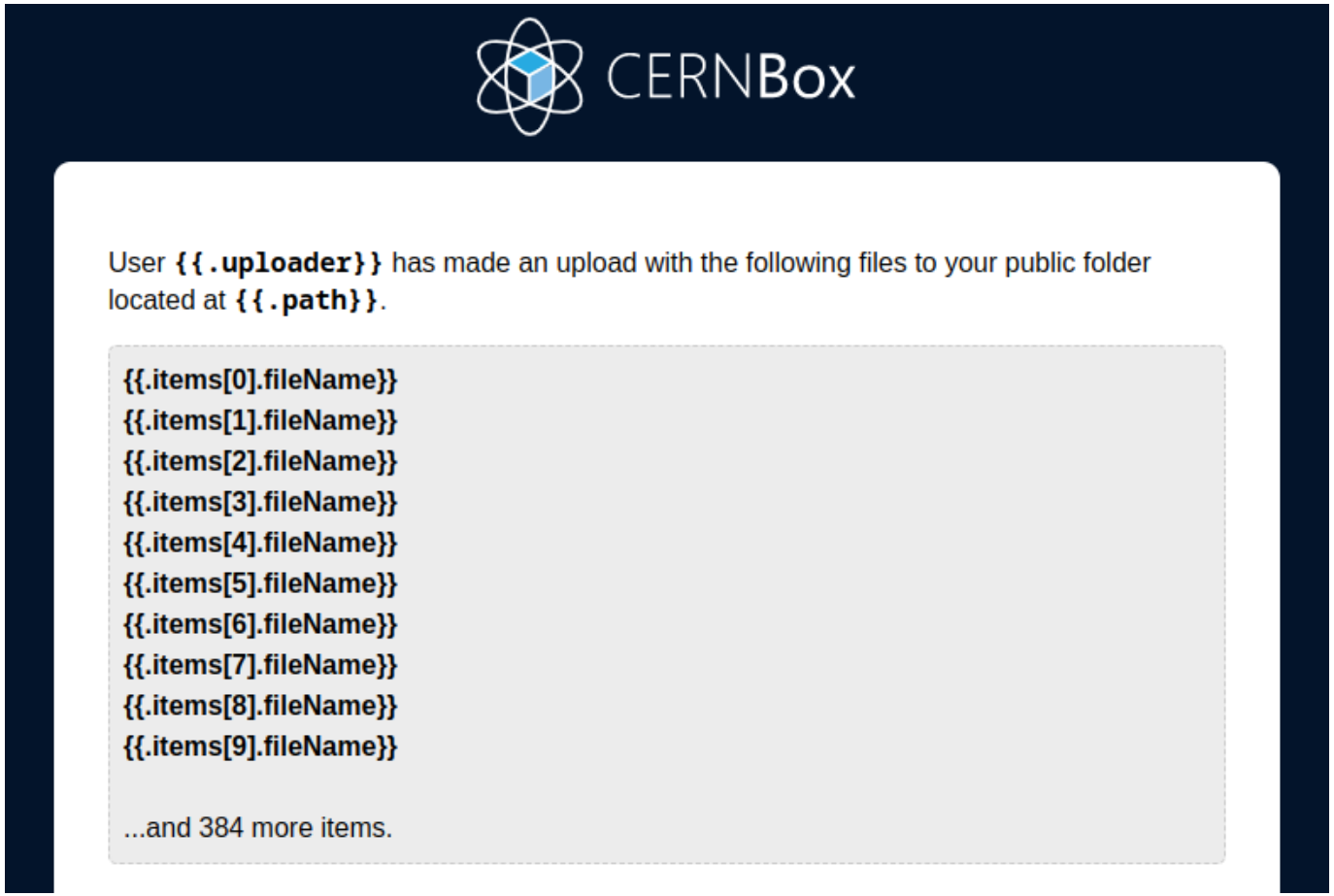
How I


NATS
trigger notification
notifications
trigger notification
mail server
ocdav
ocs
REVA
Bob
upload file
uploads a file
Alice

How I


NATS
trigger notification
notifications
trigger notification
mail server
send email
ocdav
ocs
REVA
Bob
upload file
uploads a file
email
Alice

What if somebody uploads a lot of files in one go?

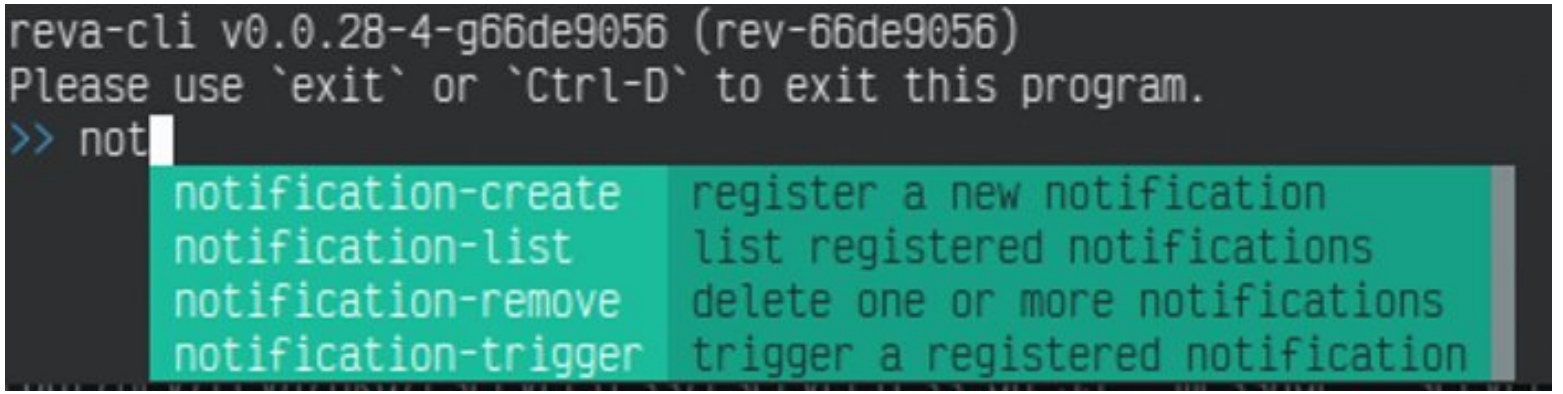


How do I debug this system if something happens?

```
"message":"serverless service enabled: notifications"}
cations/handler/registry/registry.go:57","message":"1 handlers initialized"}
fications/notifications.go:90","message":"connecting to nats server at cbox-nats-01.cern.ch:4222"}
ications/notifications.go:203","message":"template notification-test registered"}
ications/notifications.go:95","message":"notification service ready"}
ications/notifications.go:229","message":"notification 334011 registered"}
ications/notifications.go:263","message":"notification trigger 334011 received"}
fications/notifications.go:243","message":"created new accumulator for trigger 334011"}
ications/notifications.go:285","message":"callback triggered with [{{notification-test {notification-test 0xc0
0xc00010f770]"}
ications/notifications.go:290","message":"sending single notification for trigger 334011"}
fications/handler/emailhandler/emailhandler.go:68","message":"mail sent to recipient
```

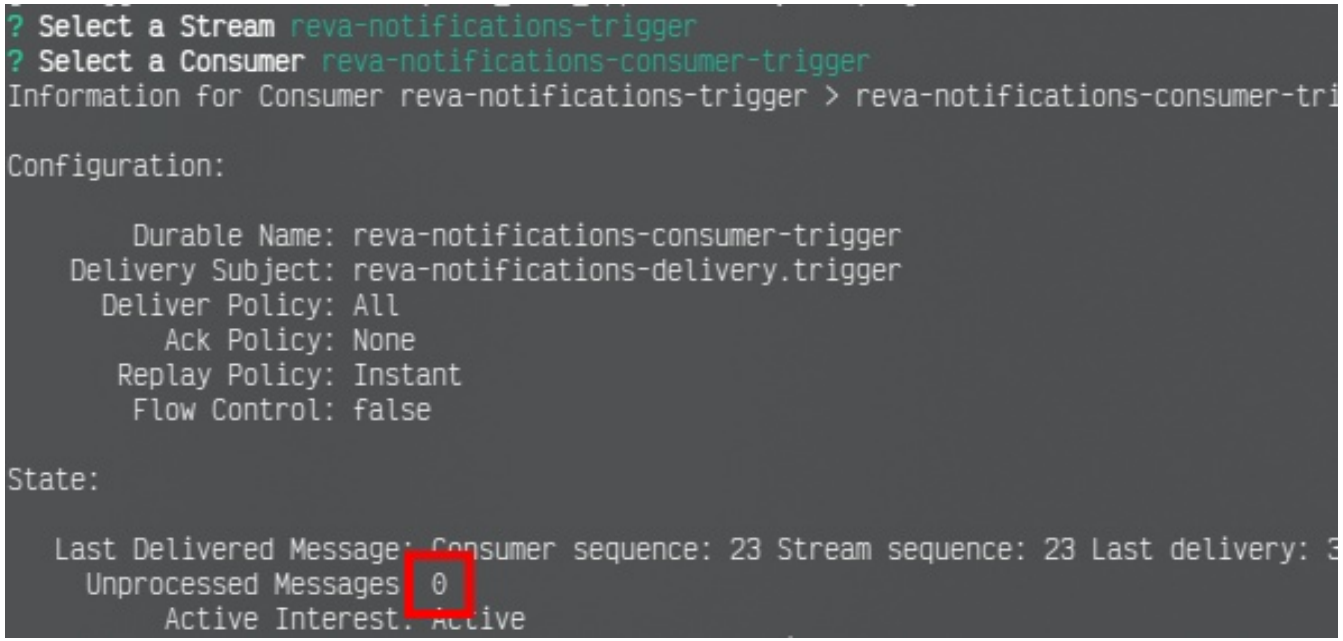
LOGS

How do I debug this system if something happens?



REVA CLI (with cool autocomplete!)

How do I debug this system if something happens?



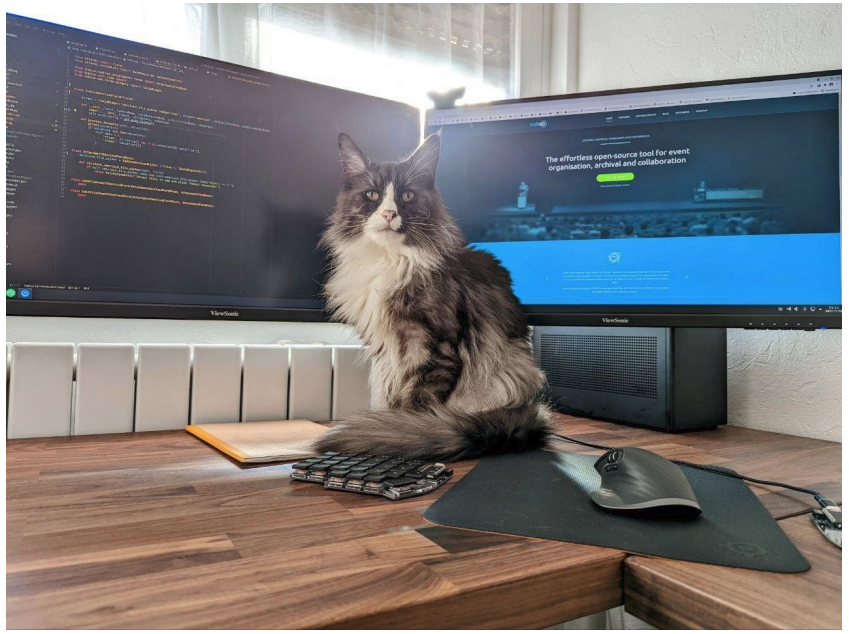
NATS CLI

Future work

- Publish notifications API to CS3APIs Anybody up for it?
- More notification ***handlers***
  - Sync Client
  - Mattermost
  - SMS
- Full-fledged **Web Notifications Center** (GSoC student incoming!)

Acknowledgments

- Icons by VectorStall from NounProject.com
- Ichiro the cat for enduring >7k uploads of his pic while testing



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Thank you!

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