



**CS³
MESH⁴
EOSC**

Connecting European Data

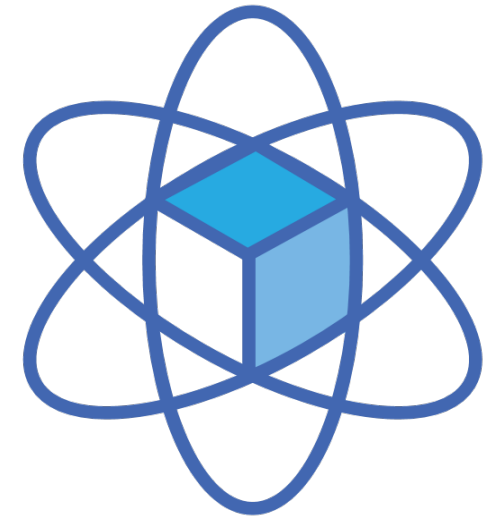


Modern Notification System for Sync & Share

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!"

CERNBox > eos > user > j > jaferer > test_notifications ⋮



[+ New](#) [Upload](#)


| <input type="checkbox"/> | Name ↓ | Shares | Size | Modified | |
|--------------------------|--|--------|------|--------------|---|
| <input type="checkbox"/> |  uploadfolder  | | 0 B | 1 Second Ago |    |

Copy quicklink


1 item with 0 B in total (0 files, 1 folder)



Alice creates a public link for a folder

Share publicly 

Quicklink

 <https://cernbox.cern.ch/s/myLink>

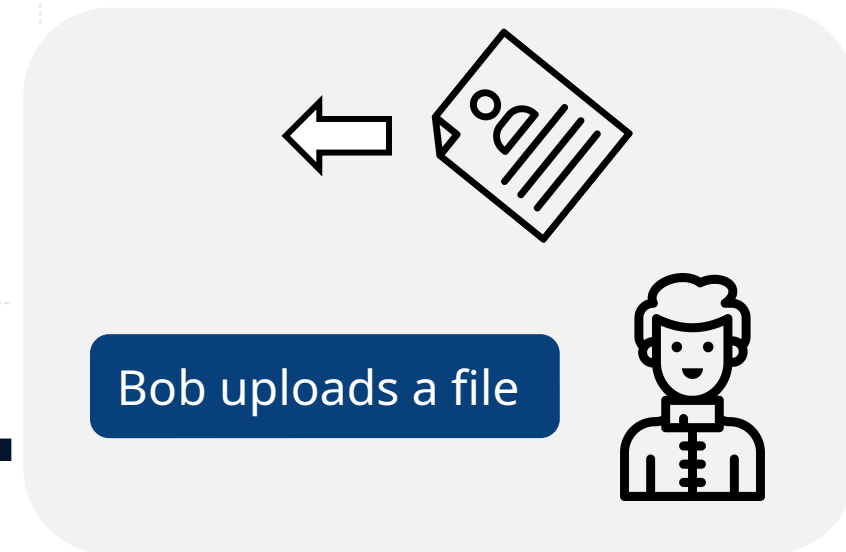
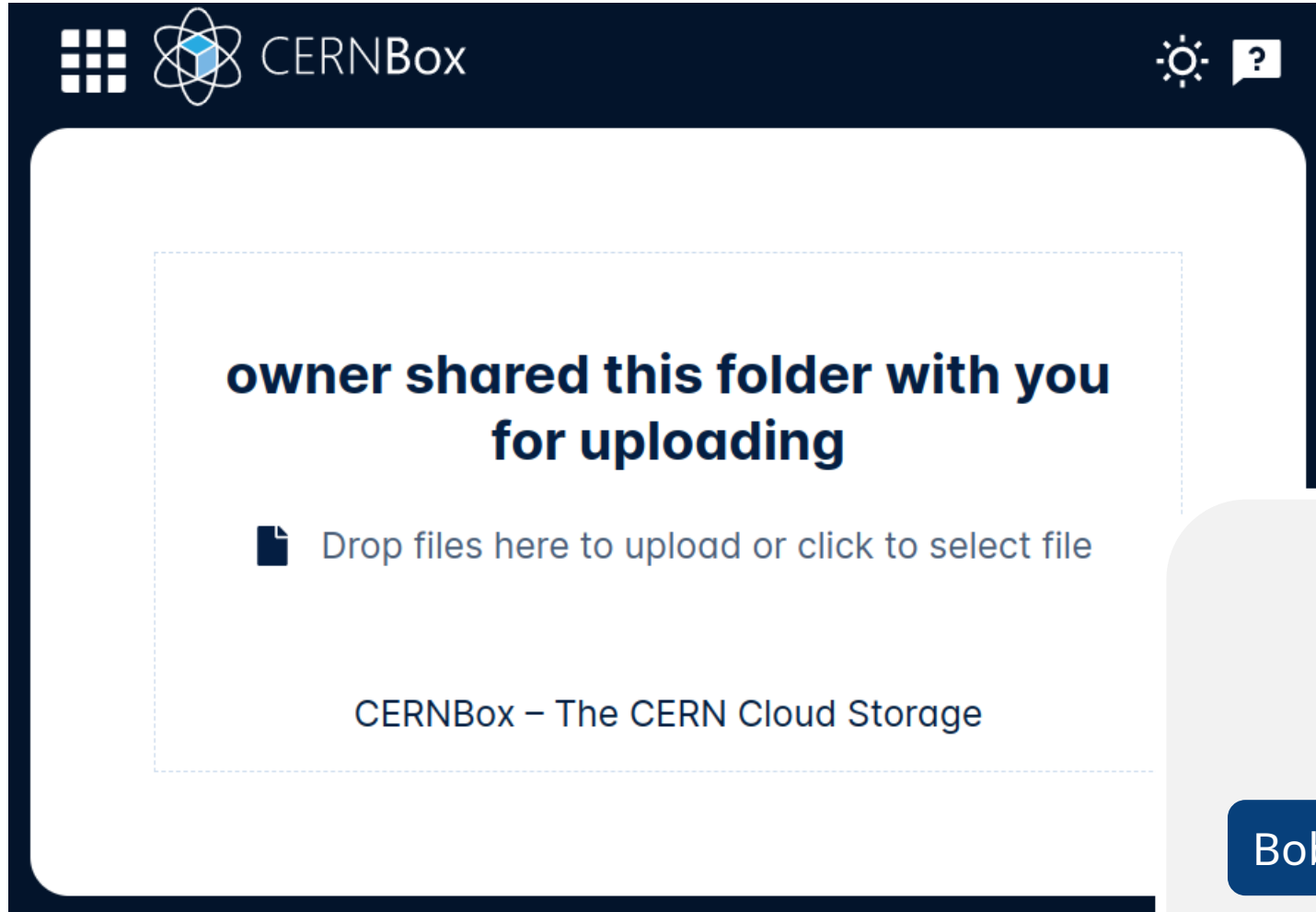
Copy

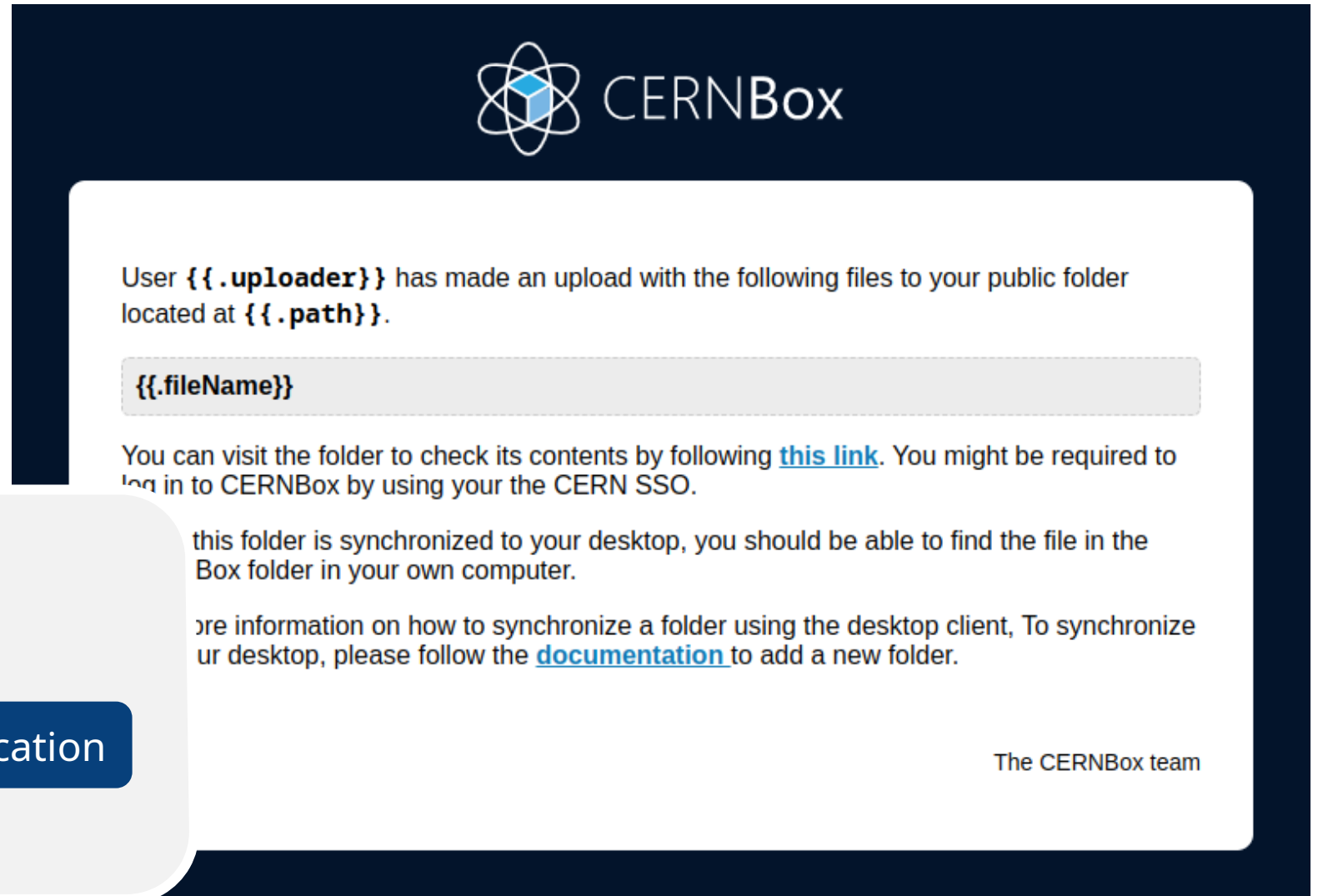
Uploader ▼

Notify me about uploads




Alice sets uploader permissions and enables notifications

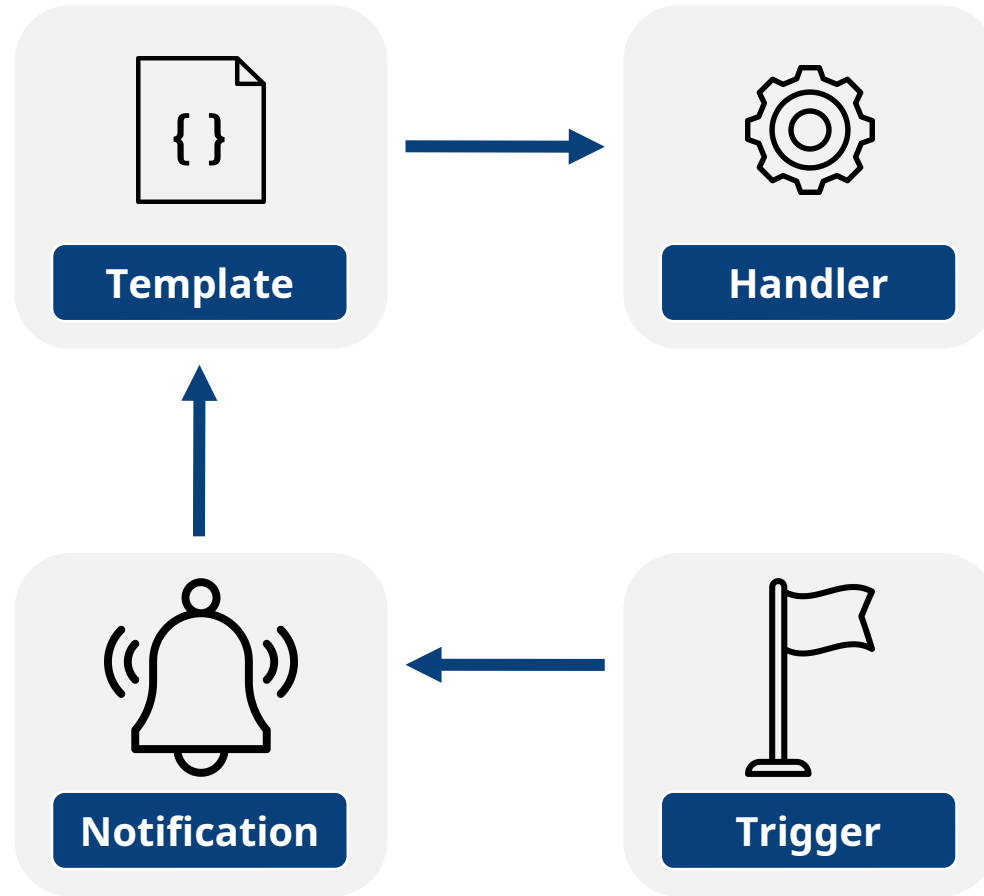


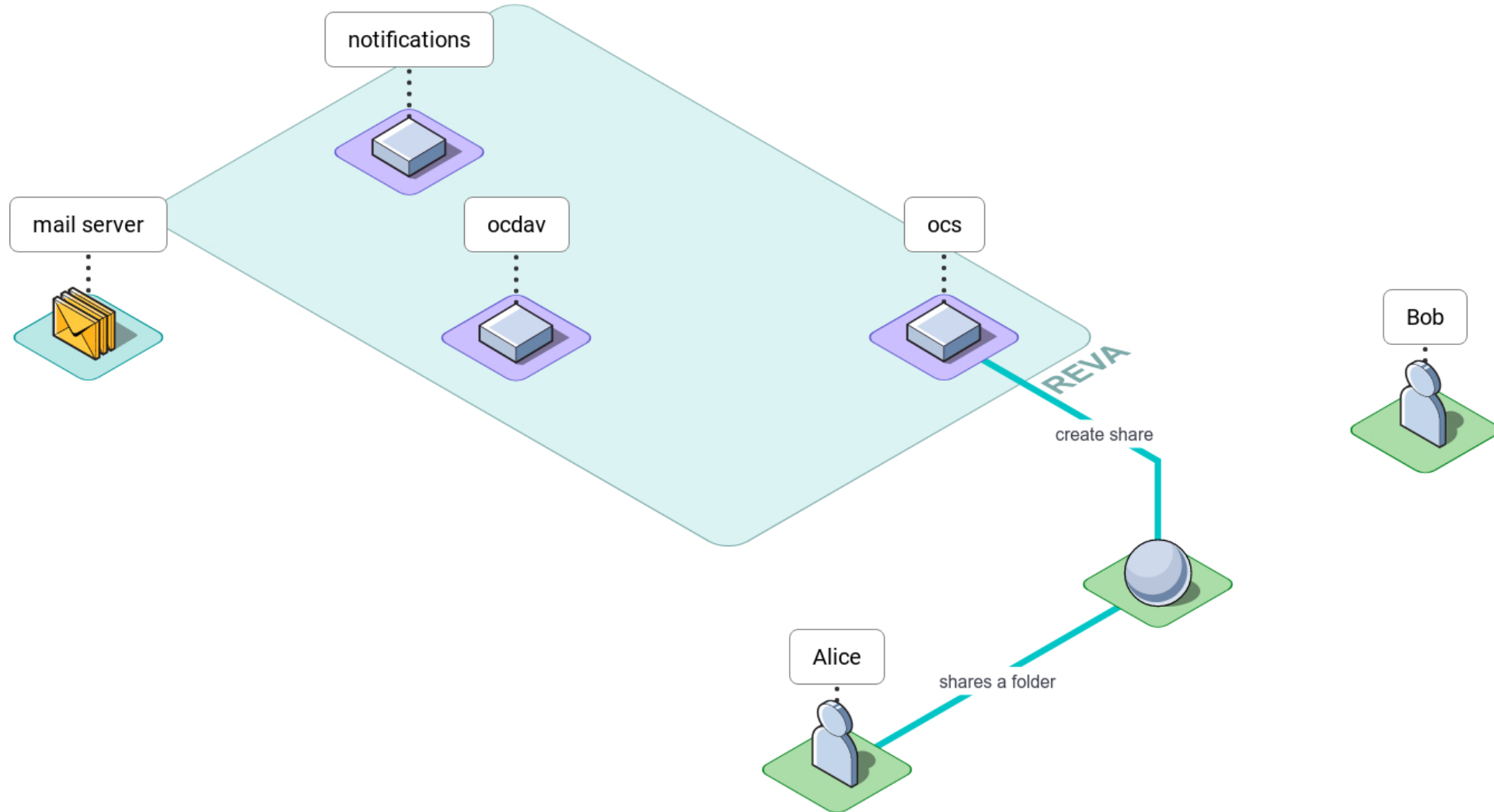


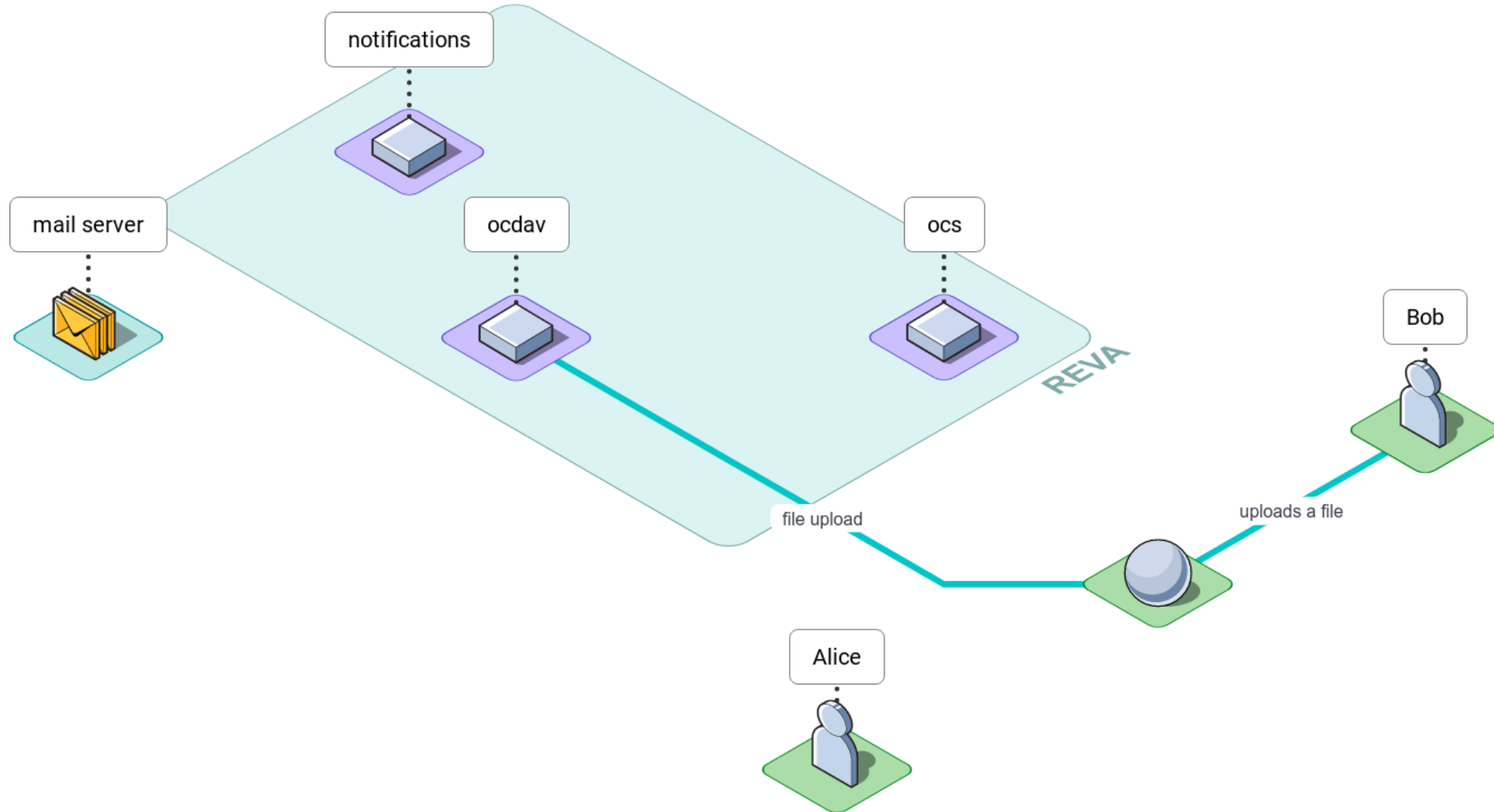
The screenshot shows an email notification from CERNBox. At the top is the CERNBox logo. The main text reads: "User `{{ .uploader }}` has made an upload with the following files to your public folder located at `{{ .path }}`." Below this is a dashed box containing the placeholder `{{.fileName}}`. The text continues: "You can visit the folder to check its contents by following [this link](#). You might be required to log in to CERNBox by using your the CERN SSO." A second paragraph states: "If this folder is synchronized to your desktop, you should be able to find the file in the Box folder in your own computer." A third paragraph provides more information: "For more information on how to synchronize a folder using the desktop client, To synchronize your desktop, please follow the [documentation](#) to add a new folder." The email is signed off by "The CERNBox team".



Alice gets an email notification

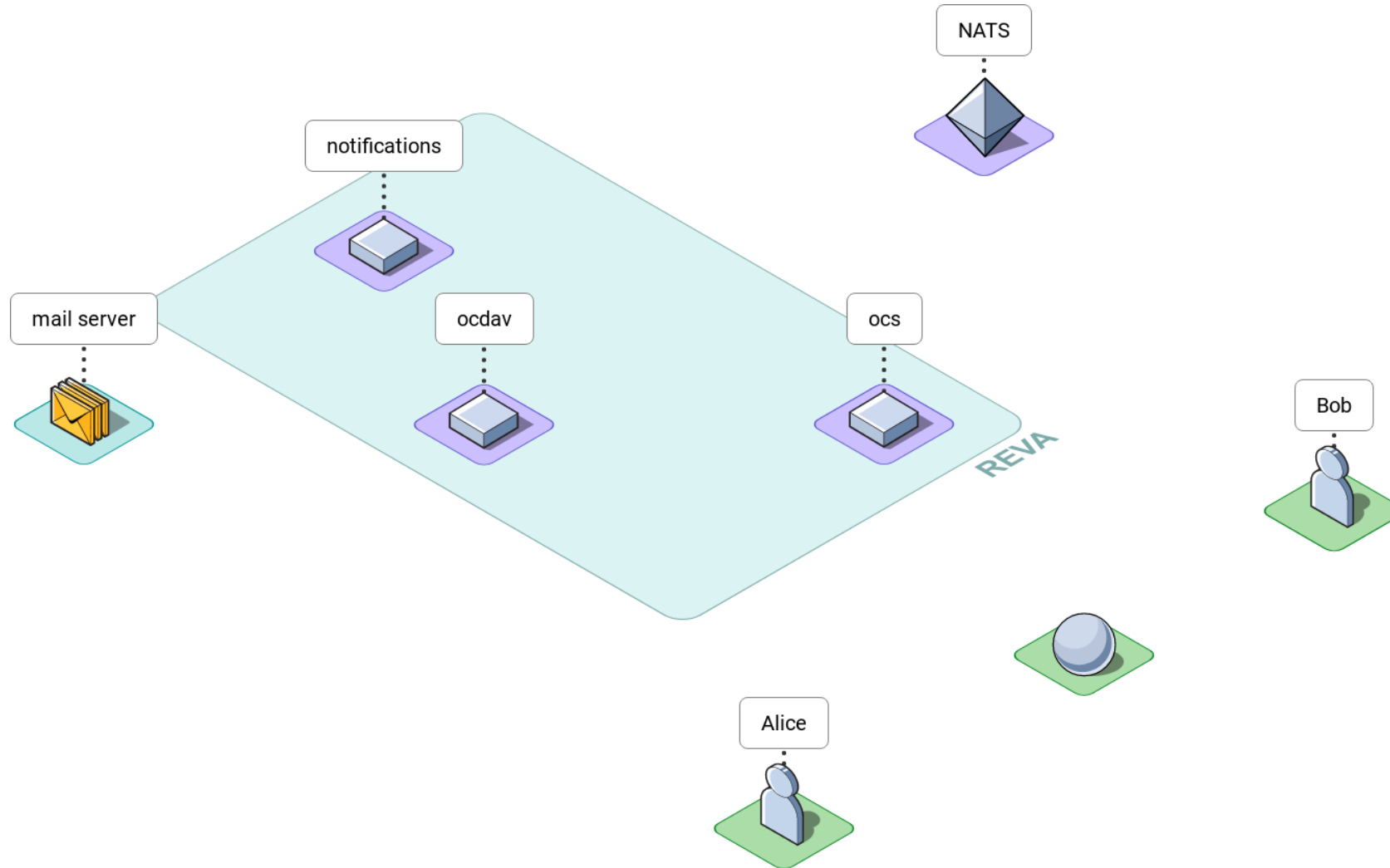


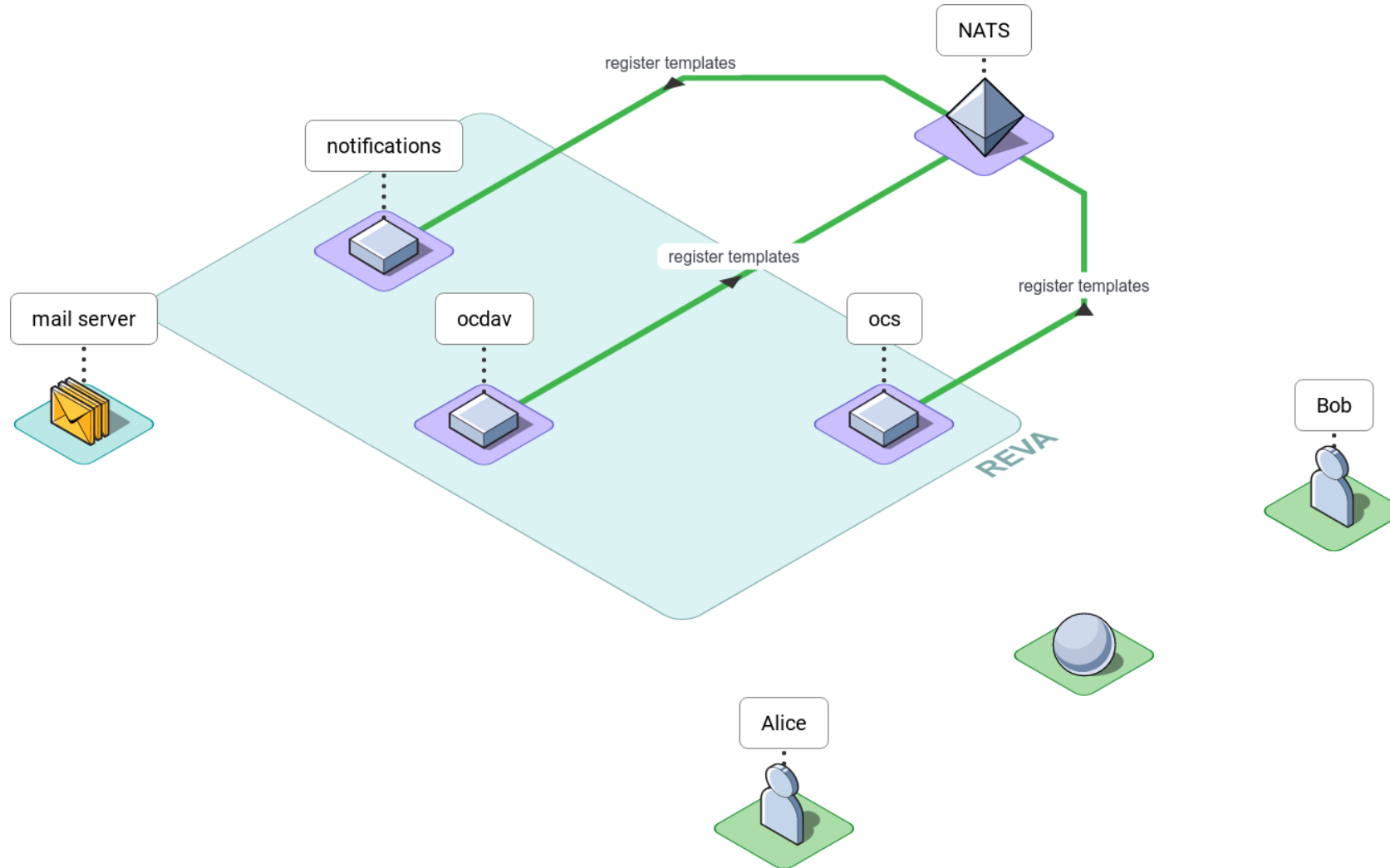


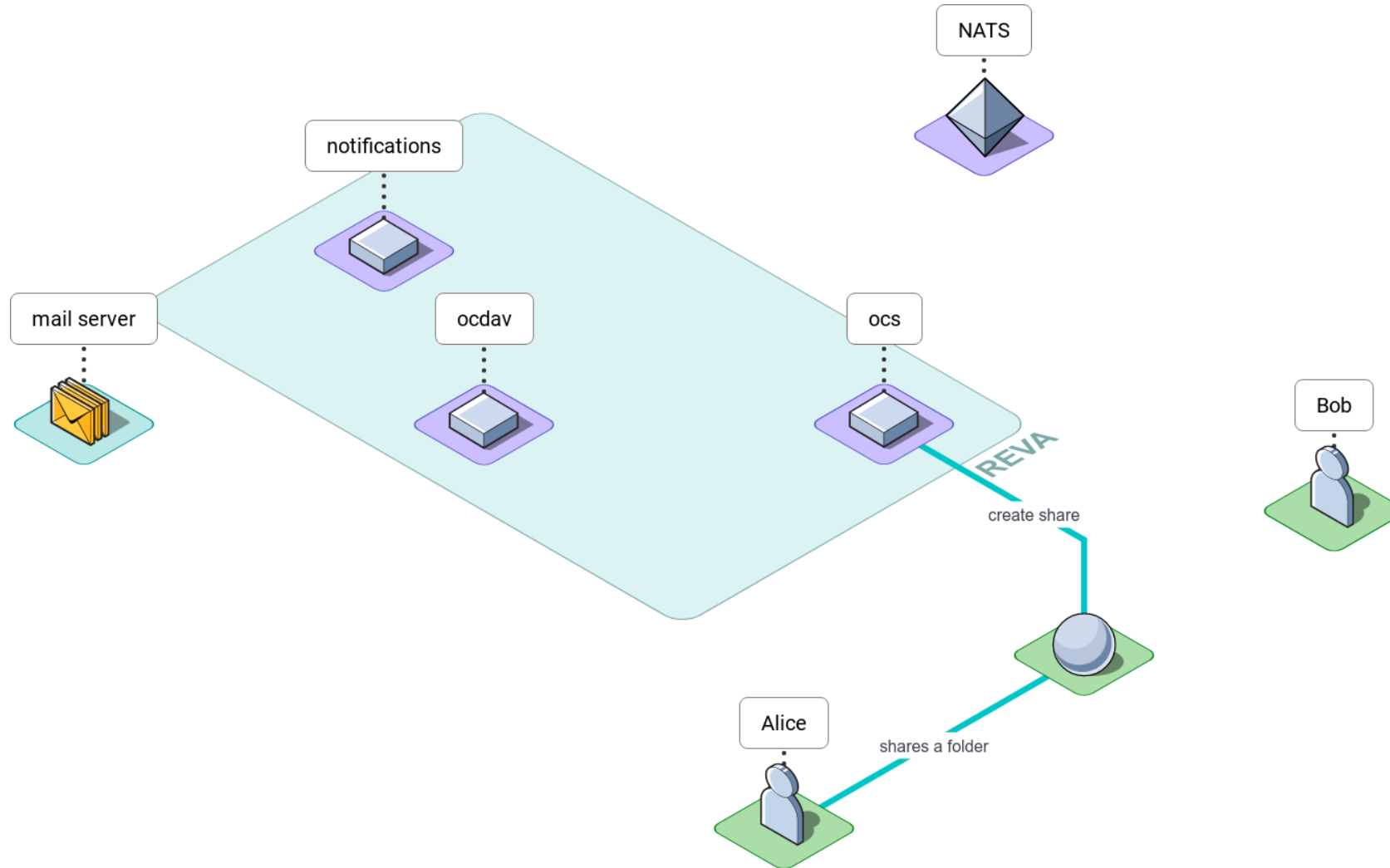


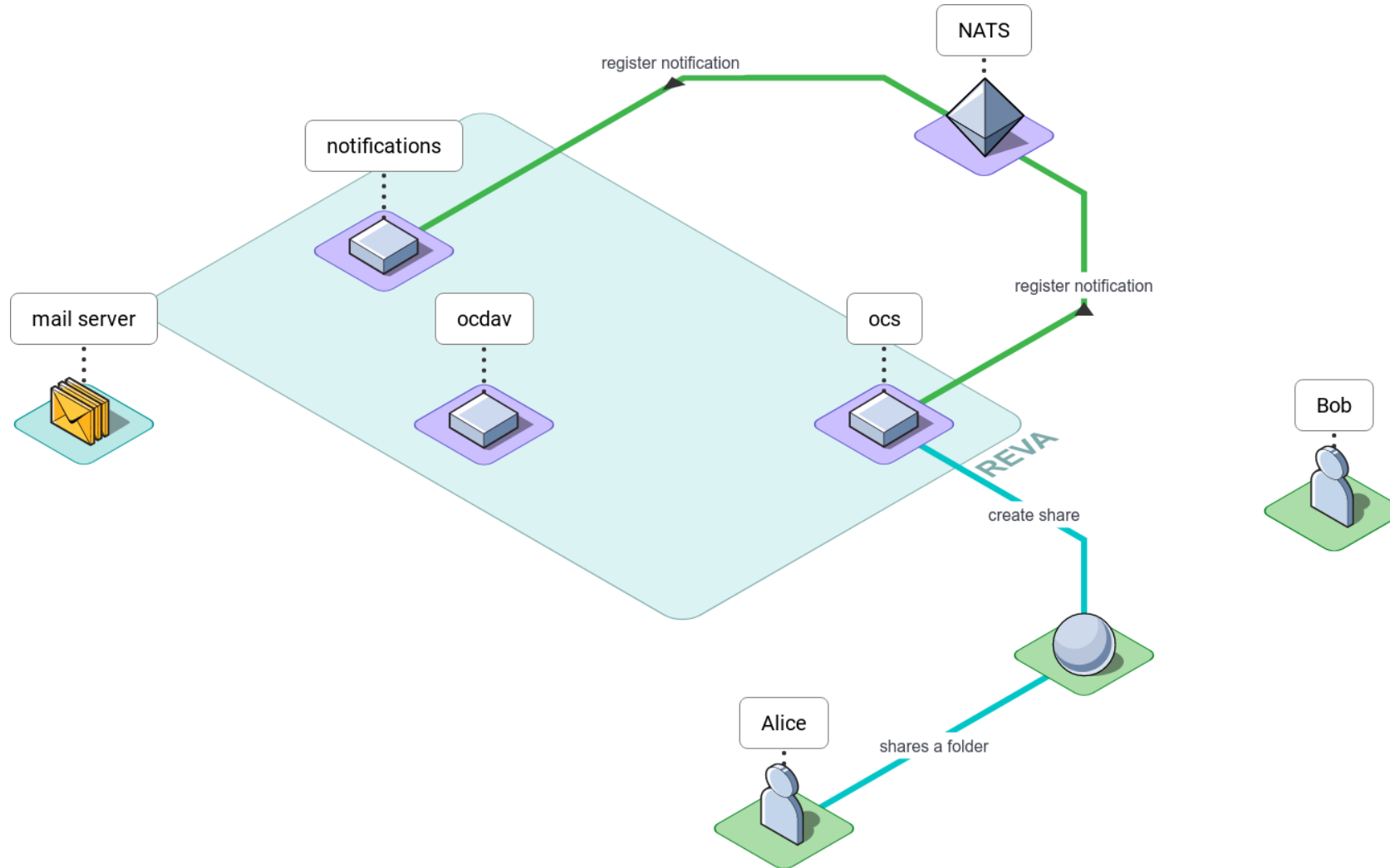


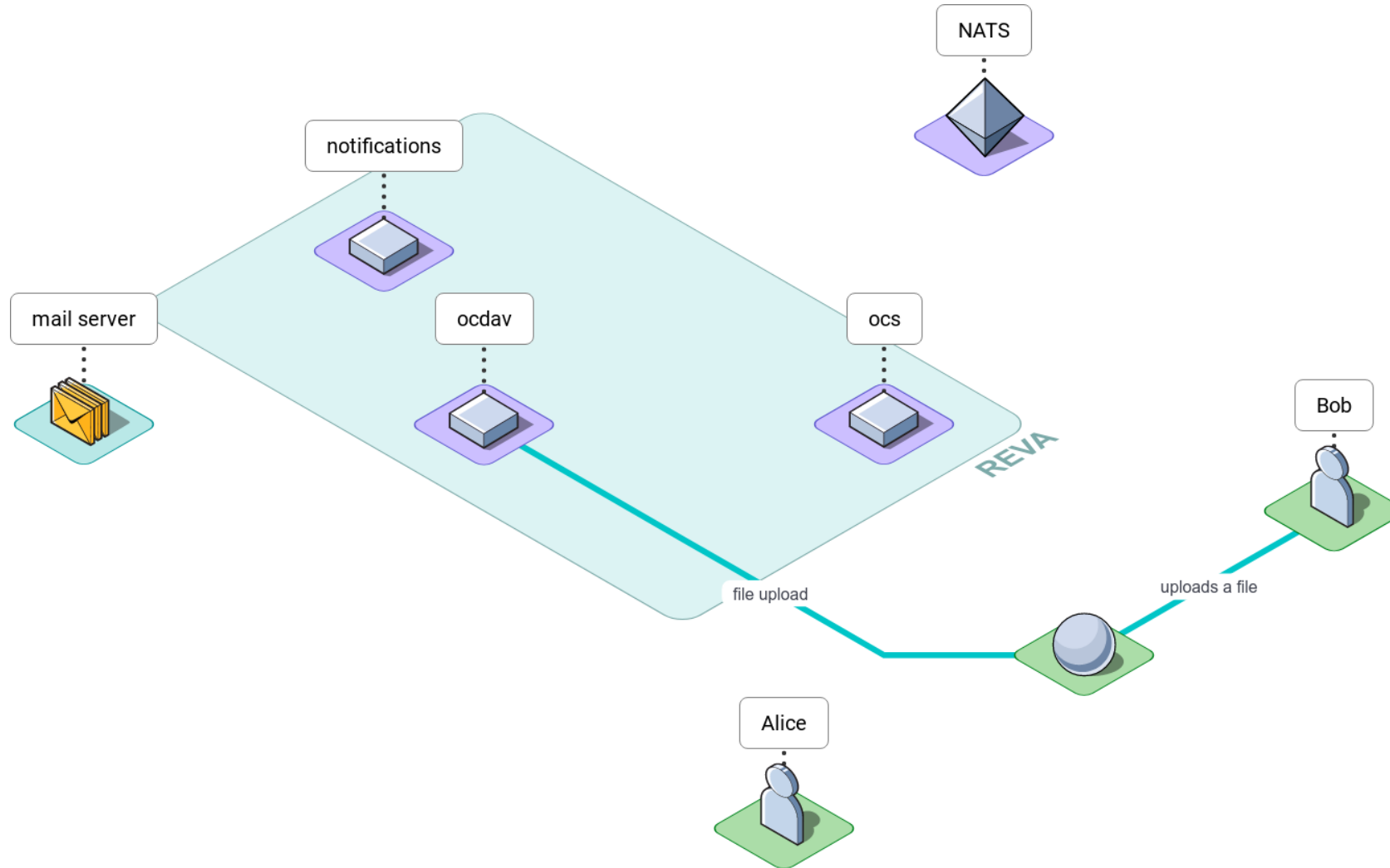
- Go client
- Extremely lightweight and fast
- Very easy to get started with
- Guaranteed exactly-once delivery
- Key/Value store construct
- Security features

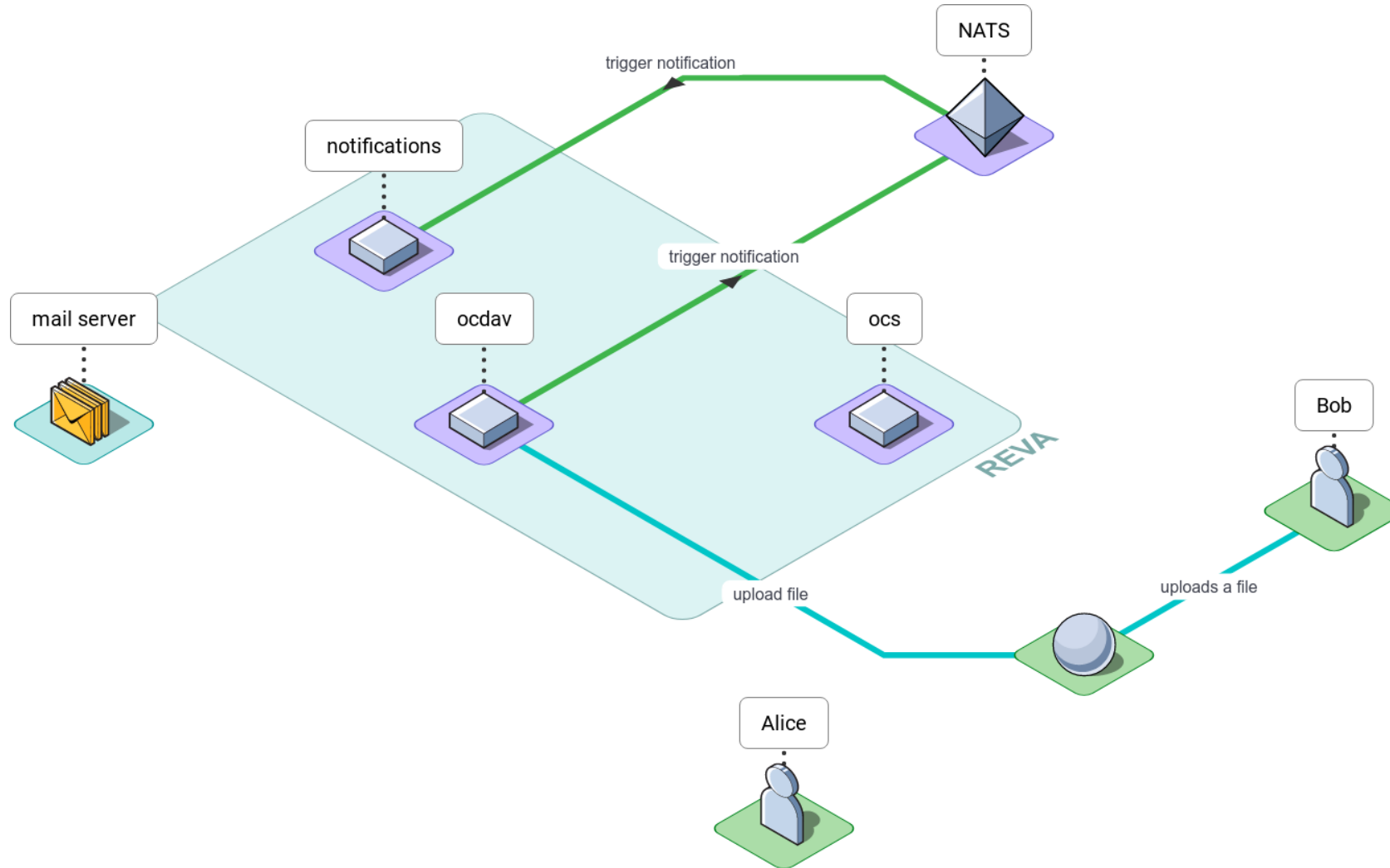


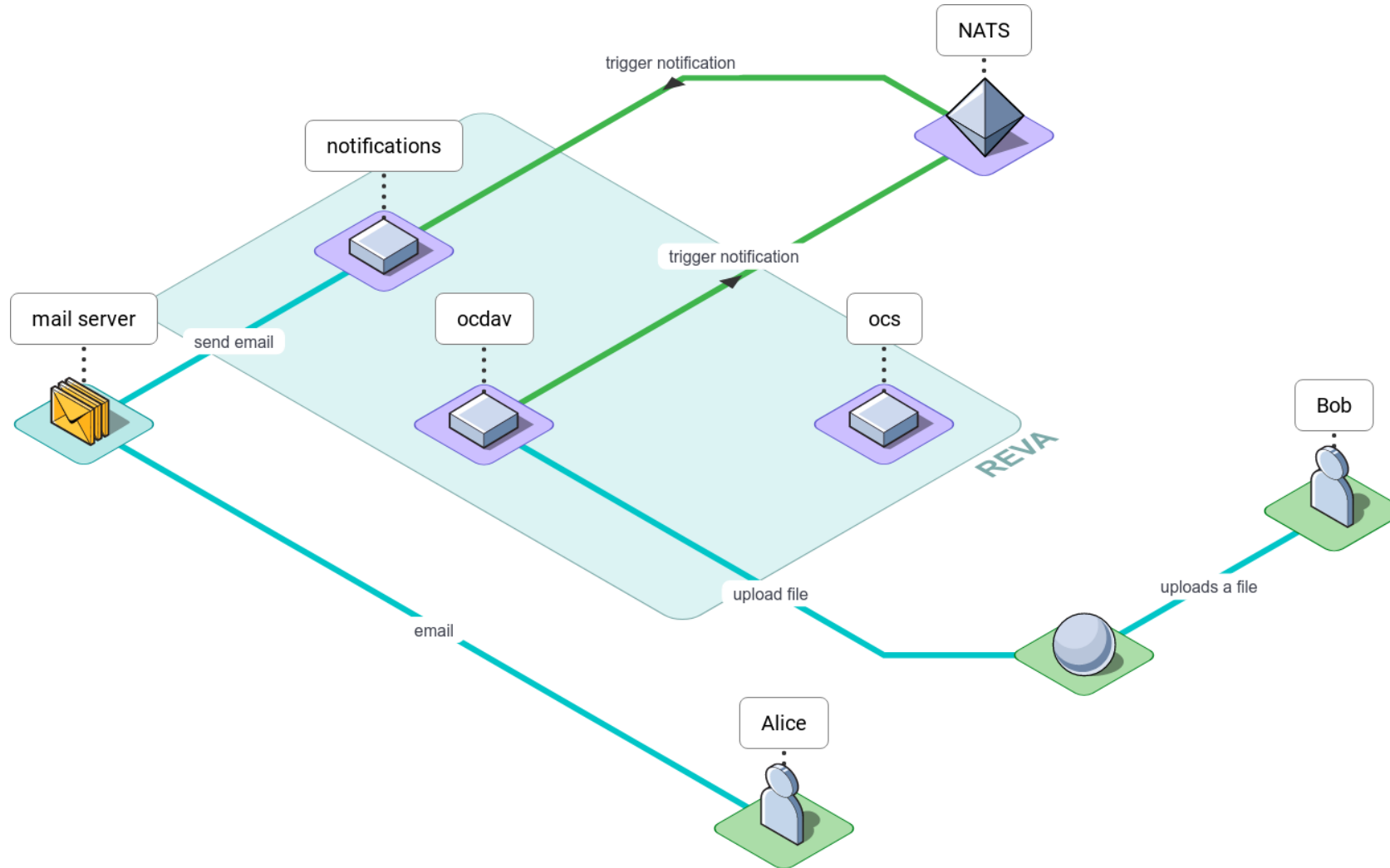




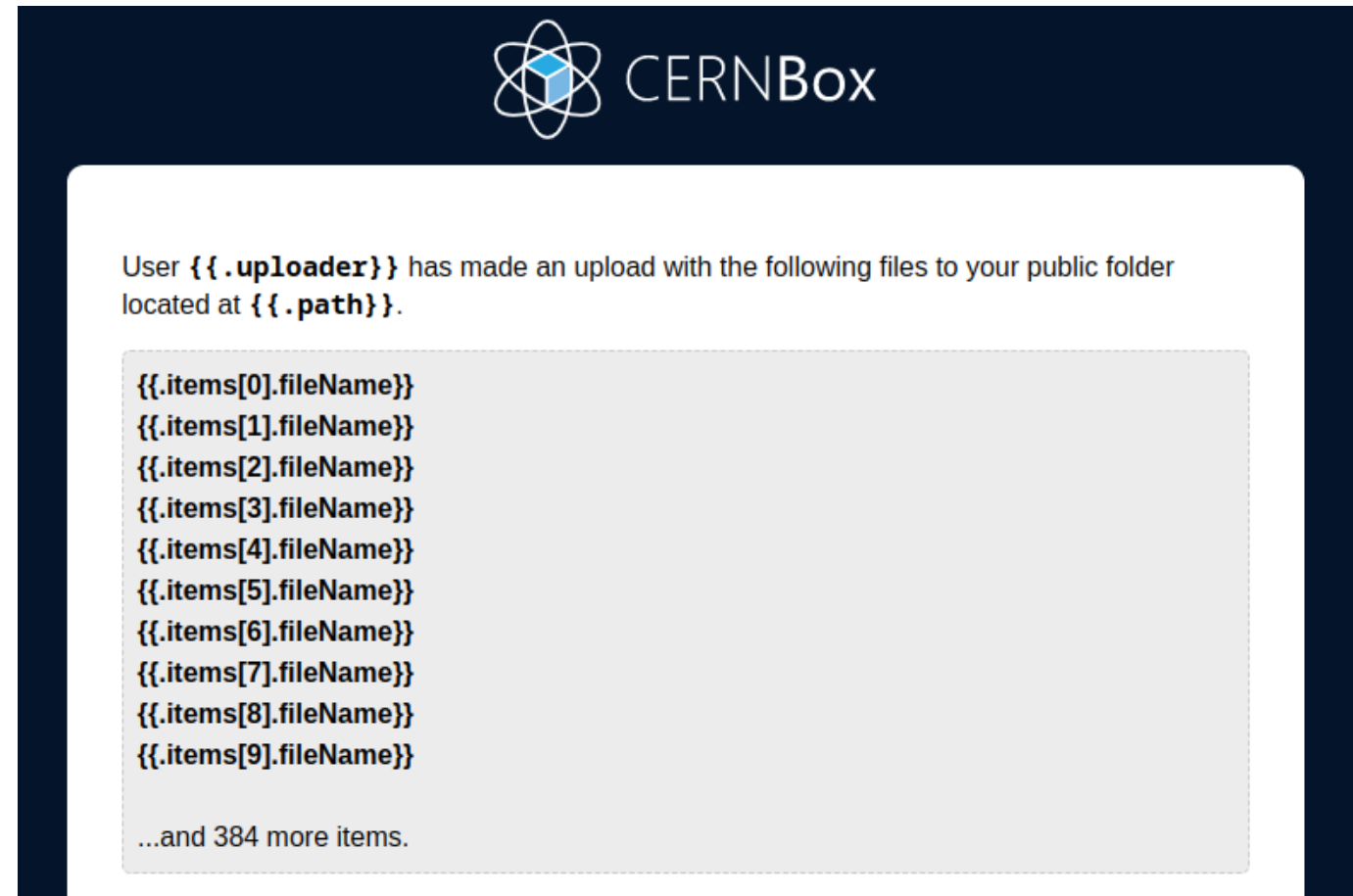








What if somebody uploads a lot of files in one go?



How do I debug this system if something happens?

```
"message":"serverless service enabled: notifications"}
ications/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 v0.0.28-4-g66de9056 (rev-66de9056)
Please use `exit` or `Ctrl-D` to exit this program.
>> not
notification-create register a new notification
notification-list list registered notifications
notification-remove delete one or more notifications
notification-trigger trigger a registered notification
```

REVA CLI (with cool autocomplete!)

How do I debug this system if something happens?

```
? Select a Stream reva-notifications-trigger
? Select a Consumer reva-notifications-consumer-trigger
Information for Consumer reva-notifications-trigger > reva-notifications-consumer-tri

Configuration:

    Durable Name: reva-notifications-consumer-trigger
    Delivery Subject: reva-notifications-delivery.trigger
    Deliver Policy: All
    Ack Policy: None
    Replay Policy: Instant
    Flow Control: false

State:

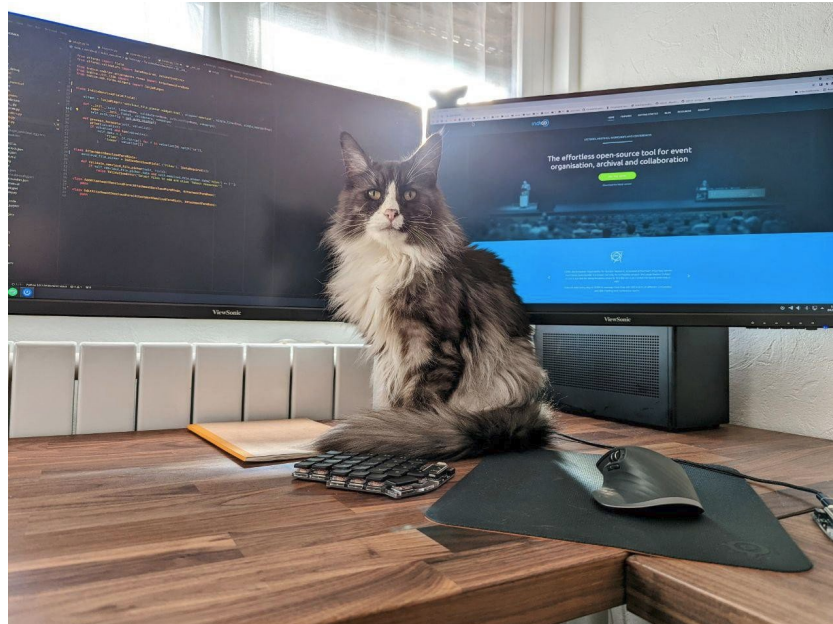
    Last Delivered Message: Consumer sequence: 23 Stream sequence: 23 Last delivery: 3
    Unprocessed Messages: 0
    Active Interest: Active
```

NATS CLI

- 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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