Intro

- DevOps does:
  - The website (furality.org)
  - The F.O.X. Portal (furality.online)
  - The API powering the convention
  - Servers for serving the above
  - Managing streaming infrastructure

Team
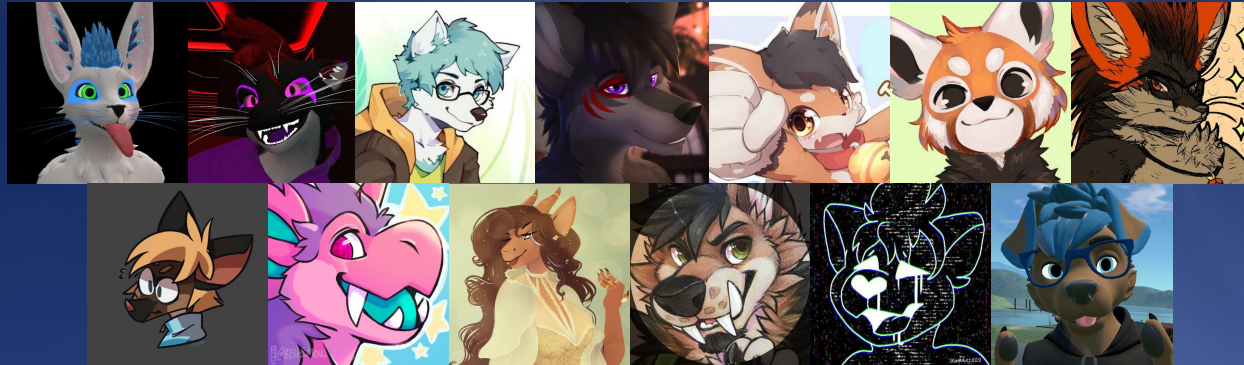
- 13 members across 3 teams
  - Backend
  - Frontend
  - Infrastructure

Backend

- What exactly is Backend?
  - Build and create the behind the scenes systems that run the convention, from joining instances to the party system.
- Services and Tools:
  - F.O.X. API
  - F.O.X. Socks
  - F.O.X. Paws
  - Status
  - W.U.L.F.
  - G.O.O.S.E.

Backend - F.O.X. API

- Handles all Attendee requests
  - Quick Join Requests
  - Invites
- Dealers Den API
  - Favorites and Location Tracking
- Convention Administration
  - Event Status Updates
  - Instance Creation and Tainting
- Role Based Access Control

Backend

- F.O.X. Paws
  - Instance Automation
  - Invites
  - RSVP and Auto Join System
  - Auto Scaling and Instance Cycling
  - Asynchronous Services (Discord, Airtable)
  - Attendee Location System
    - Party and Friends use this!

Backend

- F.O.X. Socks
  - Portal wide notification system
    - Invite Sent Notifications
    - Party Notifications
  - Live Instance Player Counts
  - Live Instance Statuses (Closing and Opening)
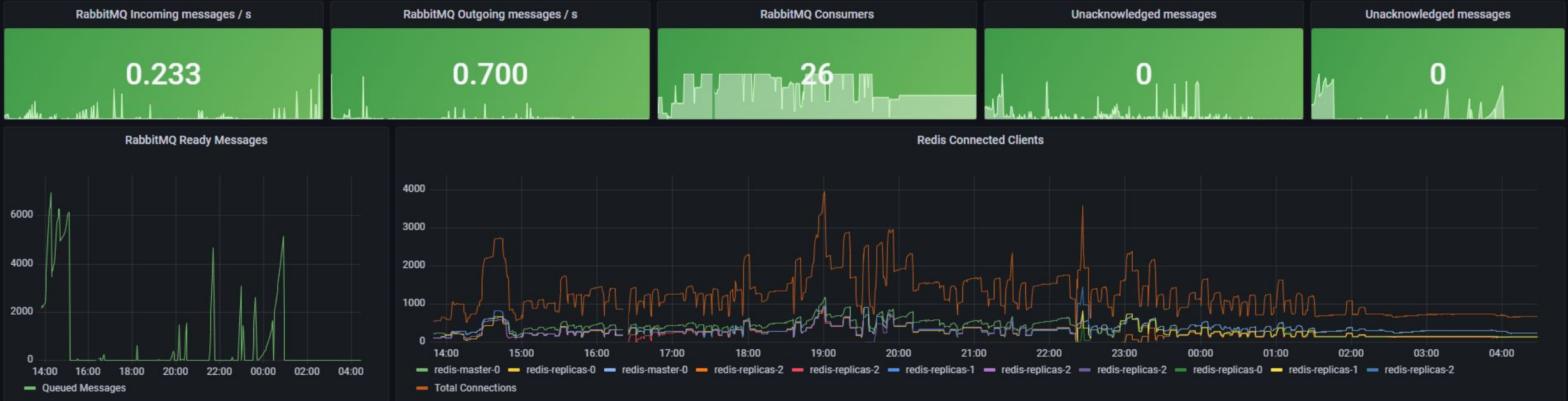
Backend - Status (Grafana)

- Tracking F.O.X. API and Paws status
  - Requests per second
- Convention Administration Metrics
  - Registered Attendee Count
  - Attendee Location Heatmap
  - Event Status Tracker
- Alerts
  - Is everything on fire?

Backend - Grafana

Backend - Grafana

Backend - W.U.L.F.

What you lookin for? (W.U.L.F.)

Primarily used out of convention or on our team page!

- Out of Convention
  - Up to date Team Page
  - HR Automation
  - Volunteer Page

Backend - G.O.O.S.E.

General Observer of Suspicious Entities (G.O.O.S.E)

Primarily used during Convention for Administrative Actions.

Provides real-time, critical stats about attendees and the Furality worlds, to help our Attendee Services teams support the convention and attendees.

UX

- What is UX?
  - User Experience Design
  - Also called Human-Centered Design, User-Centered Design
  - Designing solutions to people's problems
  - Making things easier to use
- What does a UX designer do?
  - Gather/process user feedback
  - Help determine which problems to solve
  - Design a solution to those problems
 - Test those solutions to get feedback (limited)

UX

- UX at Furality
  - 2 UX Engineers (Shallie, Kayze)
  - Joined team recently
  - Focused on F.O.X. Portal design
  - Iterative feedback
- Problems to solve
  - Make Portal feel "cohesive", better navigation
  - Make it easier to join worlds (clarify Quick Join)
  - Finding events "happening now", less scrolling
  - Better integrate the Schedule view
  - Show "presence", show where people are
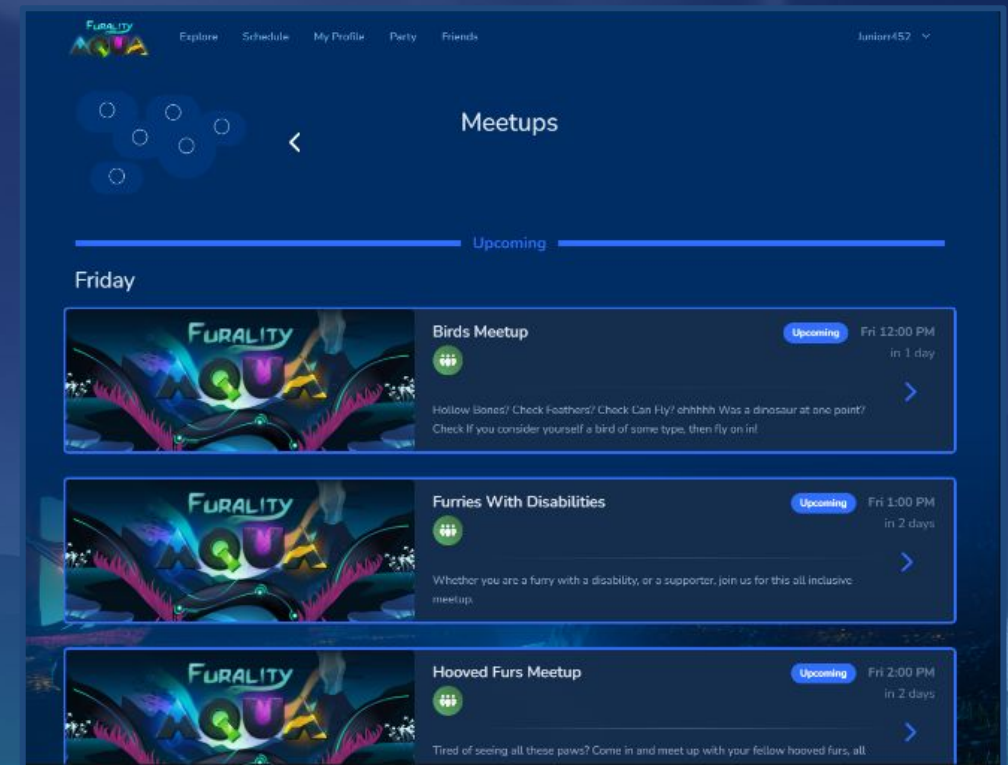 - Improve registration process (Mostly handled by devs)

UX

Prototype V1
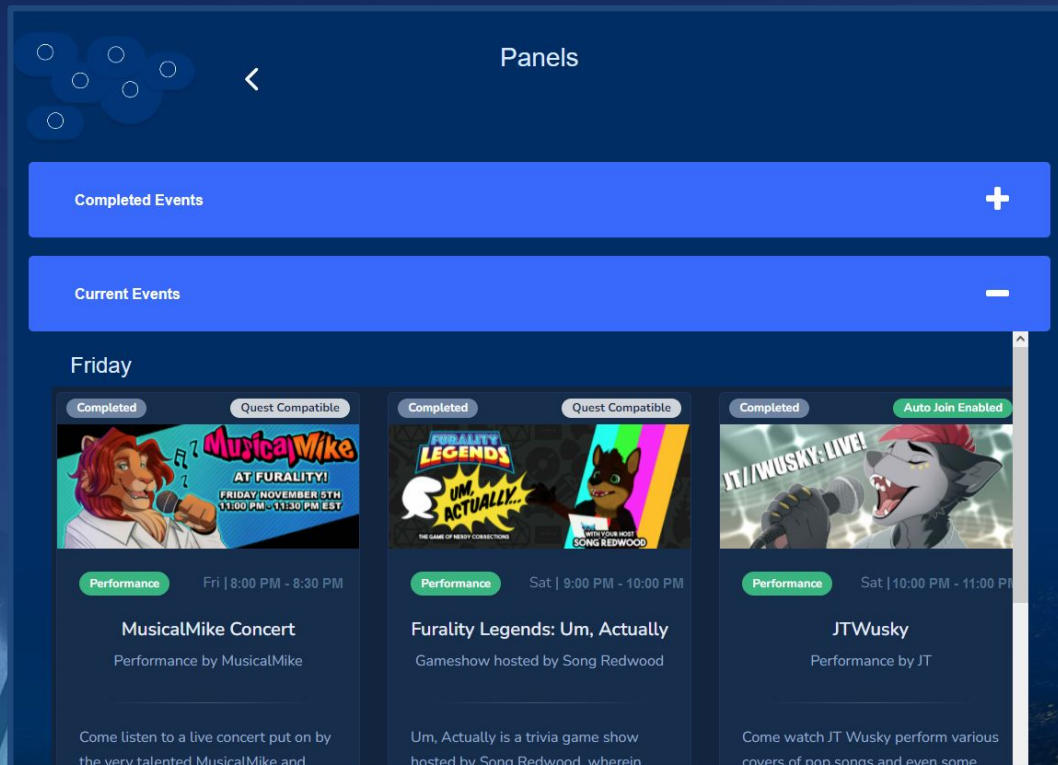
Final Version

Furality Devops

Frontend
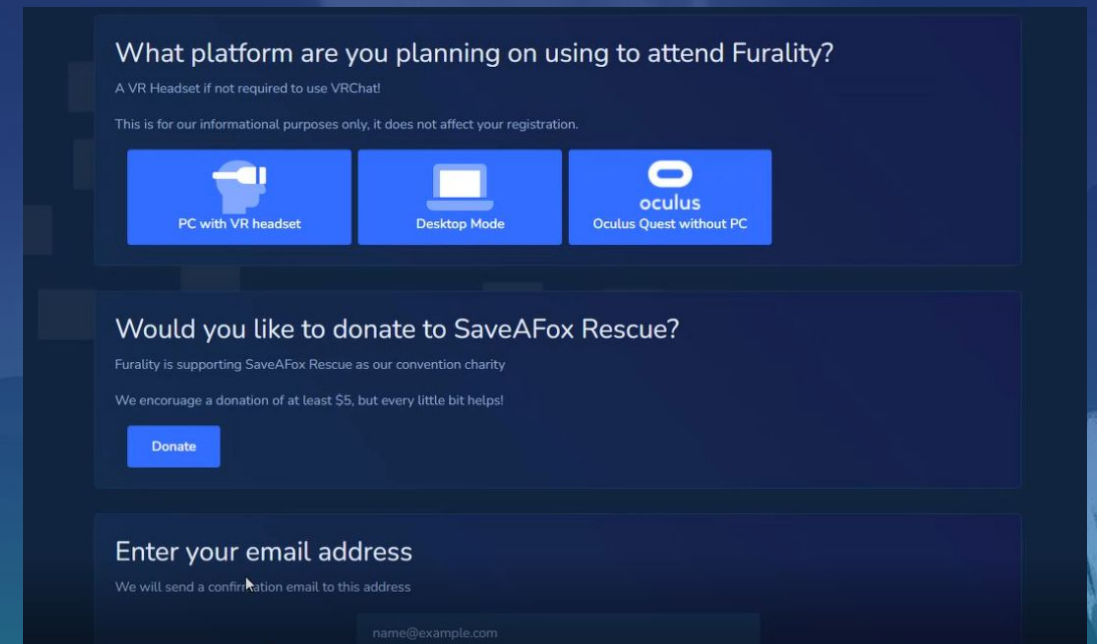
Frontend

- What is the Front End?
  - ○ Everything you interact with the F.O.X. Portal is considered the Frontend (Buttons, Text, Instance Lists, Maps, .ect)
  - ○ We utilize React and NextJS to dynamically display data on the Frontend
- What is React?
  - ○ A popular Javascript Library for writing seamless web apps, with features and tools to display dynamic data to the users.

Frontend - Registration!

- Before Furality Aqua, registration was done via to Typeform (similar to google forms), which means there were multiple steps

- We have unified registration into the F.O.X. Portal, powered by React and the API server. This give us far better control to the UX and Forms, while keeping it all in one unified flow.

Frontend - Internationalization

- We wanted to make the F.O.X. Portal feel like home for Attendees around the world, so we internationalized the portal into different languages

- This will be useful, especially within the Japanese VR Community attending Furality Aqua
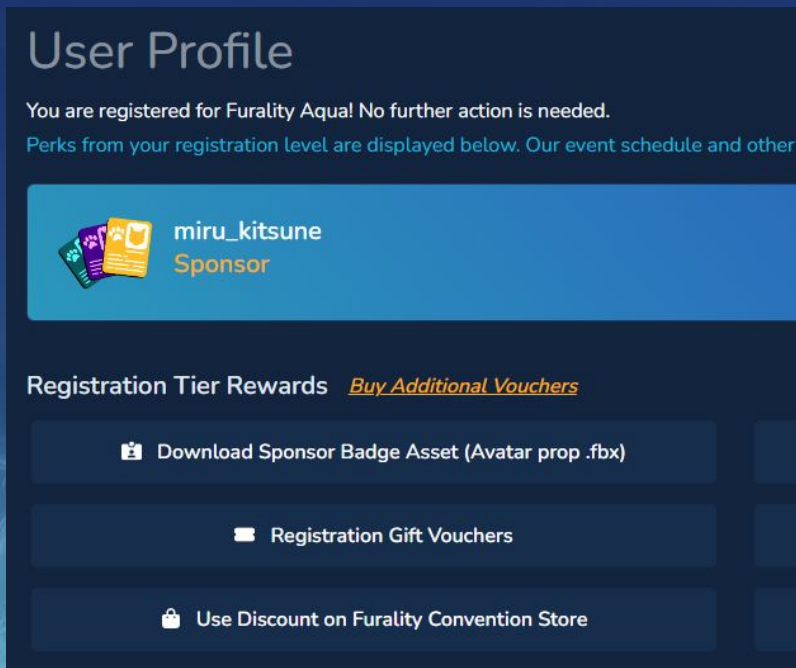
Frontend - Serverless!

- Before, the portal was hosted on a PHP server that processed all the requests in one unit (data processing, html files, assets. ect). This can be very expensive to run, and sometimes slow during heavy loads of traffic!

- Now, the Frontend F.O.X. portal is hosted on a serverless platform! Meaning the server only carries the javascript code to run the client, which means the F.O.X. Portal is fast to navigate, even when thousands of attendees are utilizing it!

Infrastructure
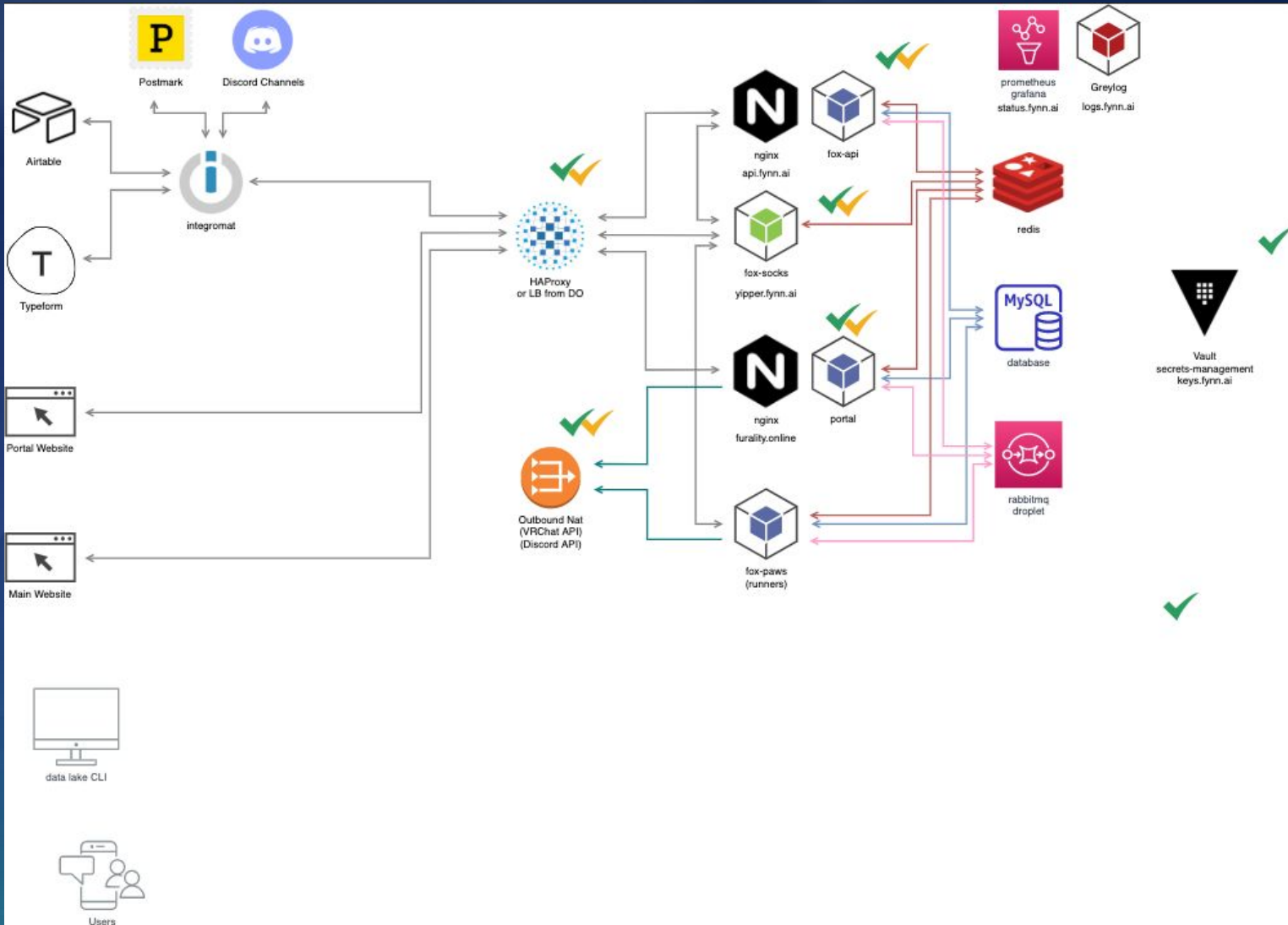
Furality Legends

Ansible + Terraform

Infrastructure

Furality Aqua

Terraform +
Kubernetes
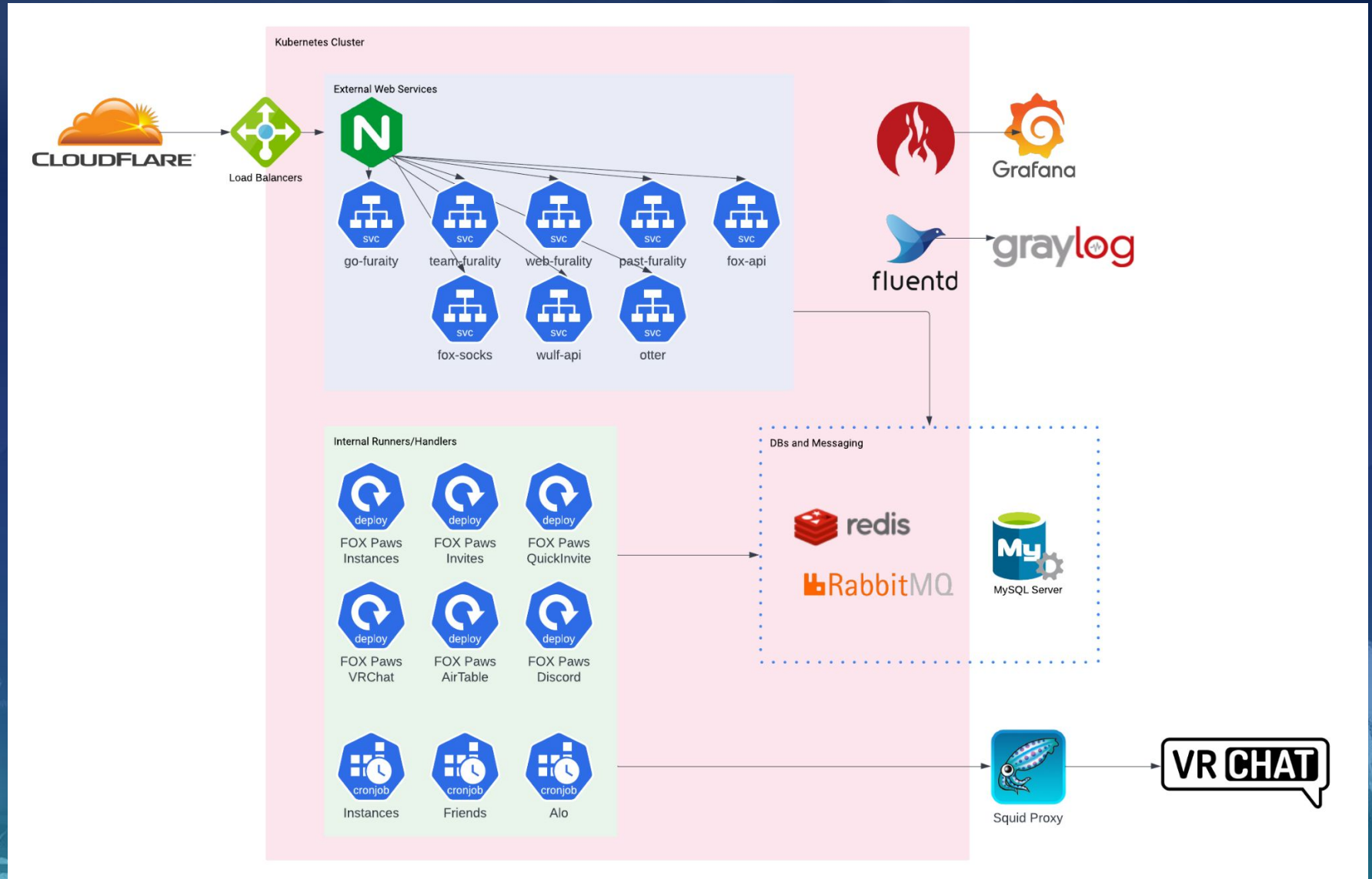
Infrastructure

```
───────────────────── Deployments(production)[18] ─────────────────────
NAME↑                           READY         UP-TO-DATE        AVAILABLE AGE
fox-api                          3/3               3                3 74d
fox-paw-airtable                 1/1               1                1 47d
fox-paw-discord                  2/2               2                2 47d
fox-paw-instance                 8/8               8                8 47d
fox-paw-invite                   8/8               8                8 2d13h
fox-paw-quickinvite              4/4               4                4 2d13h
fox-paw-vrchat                   2/2               2                2 3d14h
fox-socks                        4/4               4                4 21d
fulfillment-furality             1/1               1                1 115d
gearbot                          1/1               1                1 129d
go-furality                      1/1               1                1 98d
otter                            1/1               1                1 123d
past-furality                    1/1               1                1 119d
team-furality                    1/1               1                1 119d
web-furality                     1/1               1                1 98d
wulf-api                         1/1               1                1 65d
yagpdb                           1/1               1                1 128d
```

Infrastructure

- Deploying (and creating!) tools for supporting development work
  - Otter
    - ensuring we stay declarative while shipping
  - Dutchie
    - private, always up to date API documentation
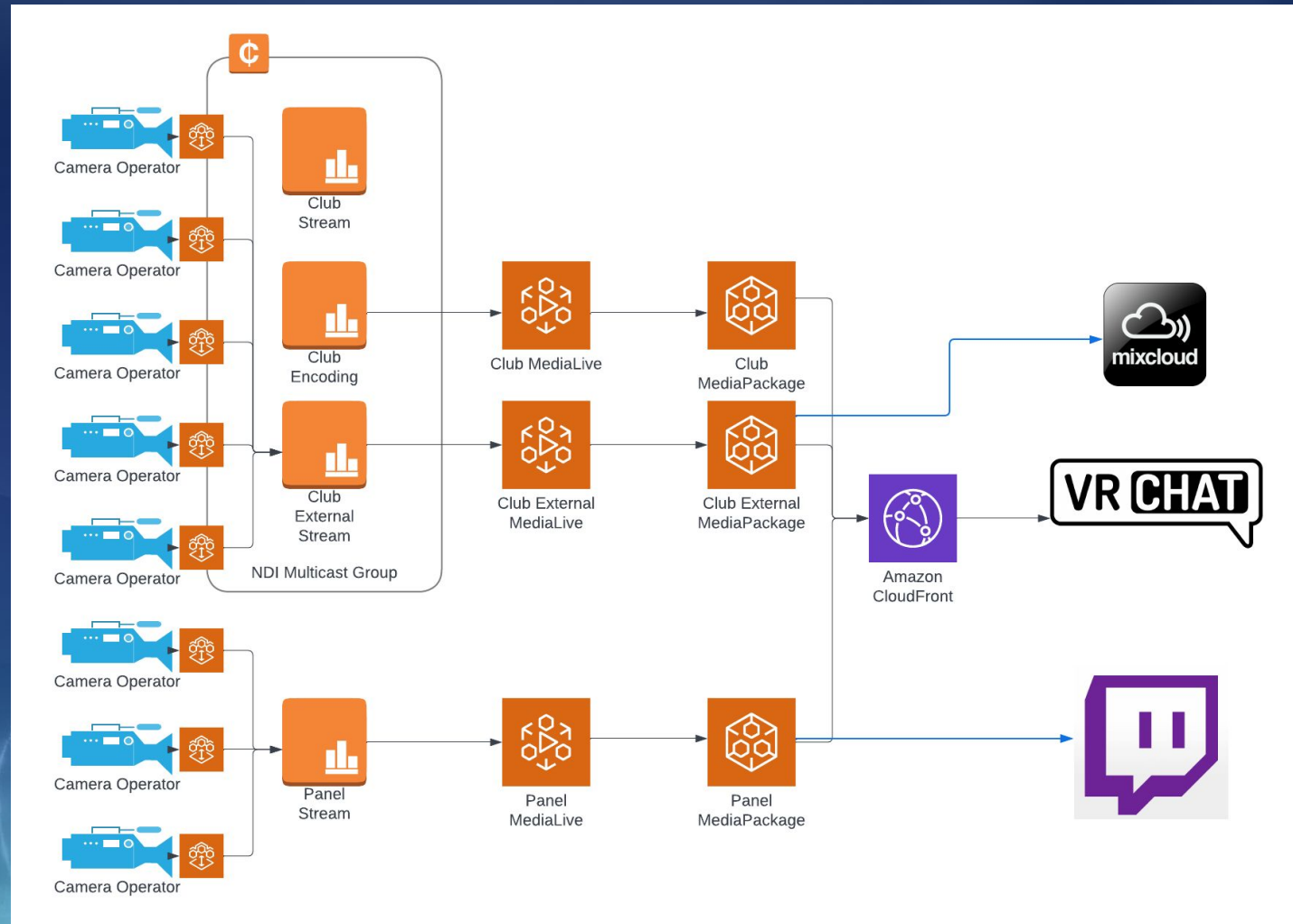 - Various GitHub Actions
  - Tolgee & Matomo

Streaming Infrastructure

Streaming Infrastructure

Other Highlights

- All of our streaming infrastructure is in a CloudFormation stack
- Parsec on VMs
- All video from the convention archived in S3, as well as on the VMs

Streaming Infrastructure

Statistics:
- 40 CPU Cores (80 with Hyperthreading!)
- 140 GiB RAM
- 4 TB Storage
- 15 MediaConnect Cameras
- Day 1 of Furality Aqua
  - 41 TB of media streamed
  - 69% of traffic to US and Canada (Nice!)
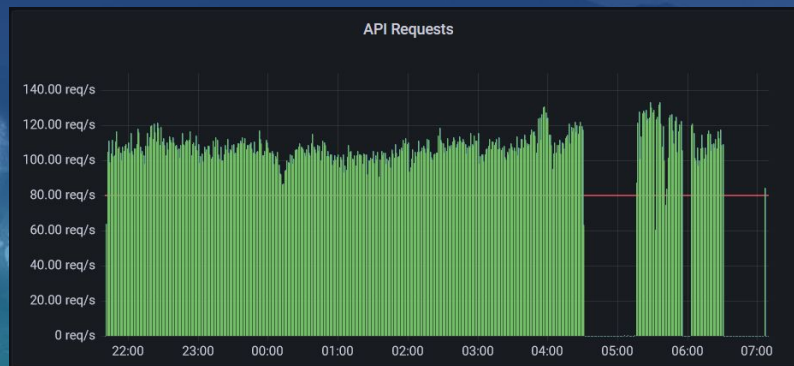 - 21% to Europe
  - 3% to Australia

Retrospective

High Notes

- Queues and Redis caching for runners made for a much smoother flow
- We actually tested this before con! Sustained load of 175 requests/second.

Something like that

Alofoxx
autojoin test worked

invites worked

auto scaling worked

Daltyn
Awesome

Alofoxx   edited
WE ACTUALLY TESTED THIS SHIT BEFORE
OPENING

Daltyn
A first

Alofoxx
Quick join works

API Requests

140.00 req/s
120.00 req/s
100.00 req/s
80.00 req/s
60.00 req/s
40.00 req/s
20.00 req/s
0 req/s
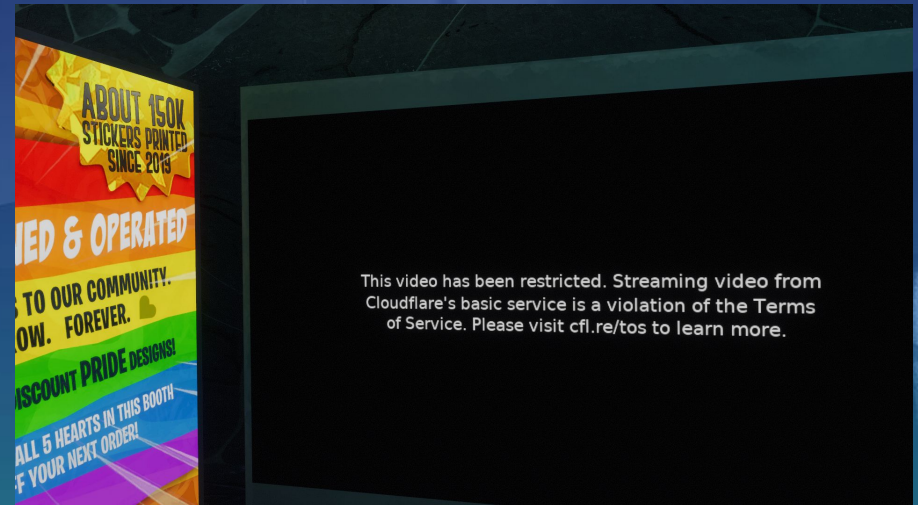   22:00 23:00 00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00

Retrospective

High Notes

- API code stable one week before convention time.
  - This is the first Furality where we did not release any new backend features during the convention!
- Even with overhauling our whole stack, traffic flowed throughout the convention with very few user-facing issues.
- Everyone on the Devops team got to spend time in VR during the convention!
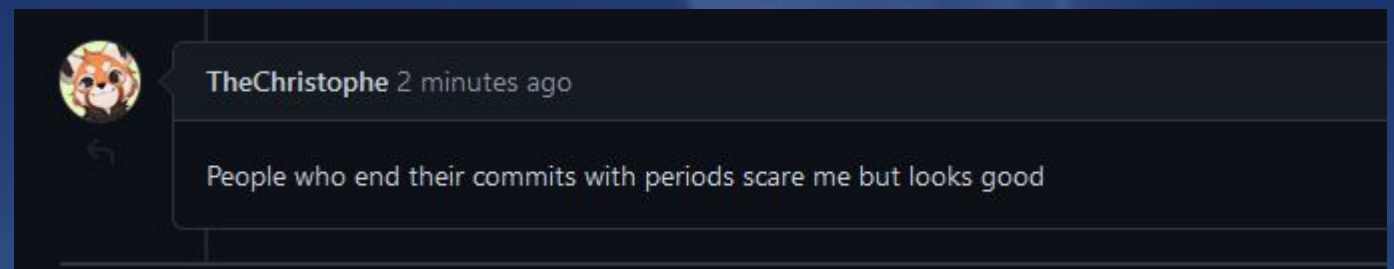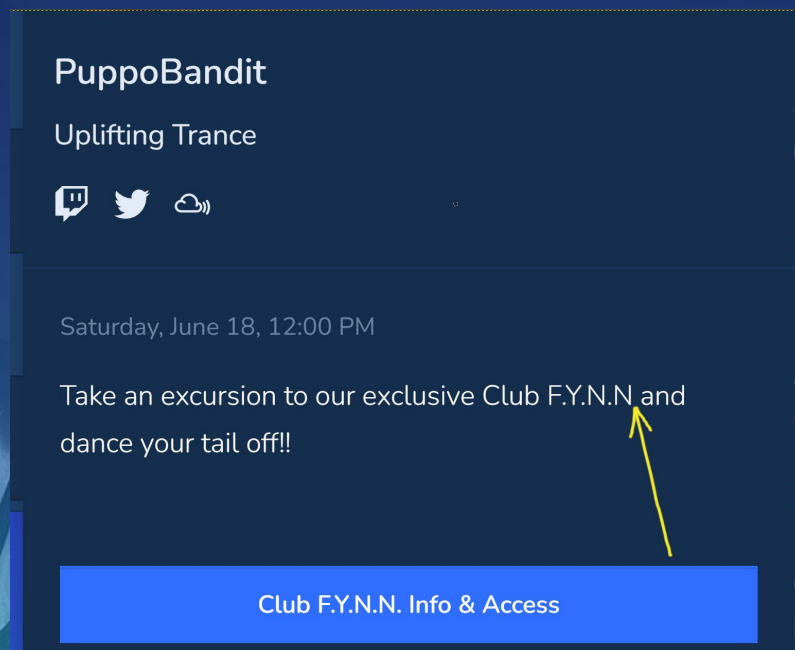
Retrospective

Low Notes

- Malformed responses from VRChat caused our runners to crash often.
- Our Dealers Den videos were accidentally put behind Cloudflare, which caused ugly errors in world.

Retrospective

Low Notes

- We're really bad with periods.

PuppoBandit

Uplifting Trance

Saturday, June 18, 12:00 PM

Take an excursion to our exclusive Club F.Y.N.N and dance your tail off!!

Club F.Y.N.N. Info & Access

TheChristophe 2 minutes ago

People who end their commits with periods scare me but looks good

1:56 PM Rhubarb | Frontend Developer

fix: missing period on F.Y.N.N #270

Merged   pharaxe merged 1 commit into prod from dev   12 hours ago

Rhubarb | Frontend Developer   I unironically missed it when writing my commit message

🤣 3