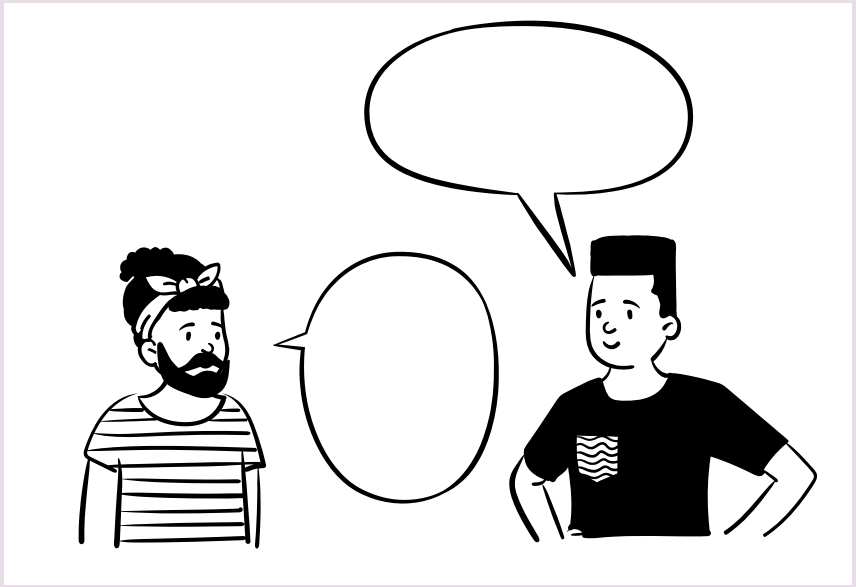
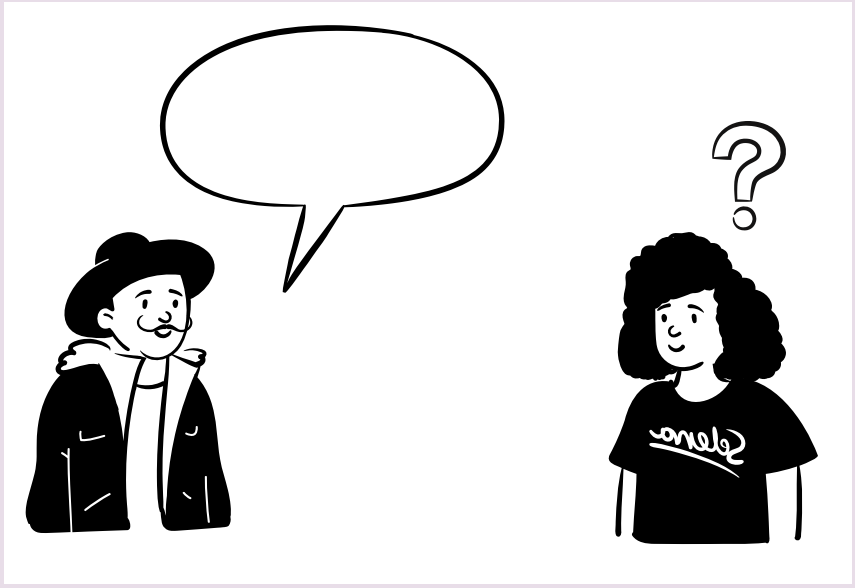
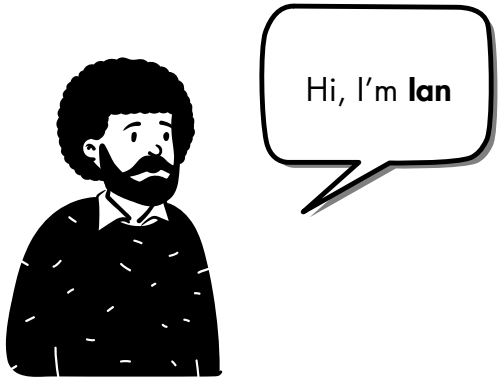


Speaking Through Policies



Personas

Infra Provider



Cluster Operator

App Developer

Ana: App Developer

I work with Chihiro at Evil Genius Cupcakes, where I am an **App Developer**.
My team **writes, deploys and maintains** software on **Kubernetes**, that the employees of our company use to operate the production of cupcakes.

Recently, I worked on the latest version of our "baker" **service**, which is ready to be deployed to **staging**.

Chihiro: Cluster Operator (aka Platform Engineer)

I work with Ana at **Evil Genius Cupcakes**
My team **maintains** the **platform** where Ana **deploys** her apps.
We set up **ingress gateways** that route the traffic to the services.

We configure the top connectivity and **security** of the gateways (e.g.: **DNS**, **TLS certs**, etc).
We also ensure that some company-level **policies** are being **enforced**.

Ian: Infrastructure Provider

I work for the company “Infra 4 bakers” providing **K8S** clusters with batteries included, ready for their use. Including **Gateway API** and **Kuadrant**

Oh, and I don’t know who those other two people are

Cluster Ready

Our Infrastructure provider, Ian, span up this cluster for us and installed a **gateway controller** in advance.

kubernetes

Load Balancer

Gateway API Controller

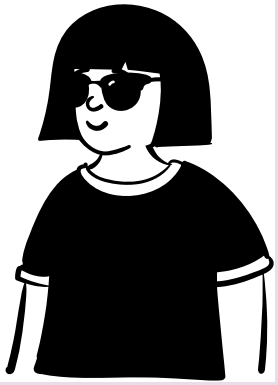
cert-manager

Kuadrant

Policy Controller

Authorino

Limitador



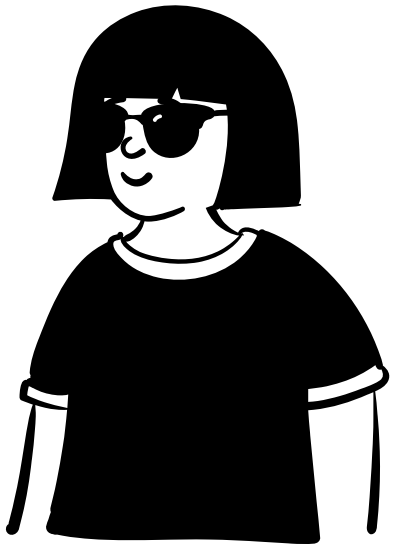
Deploy Baker Service

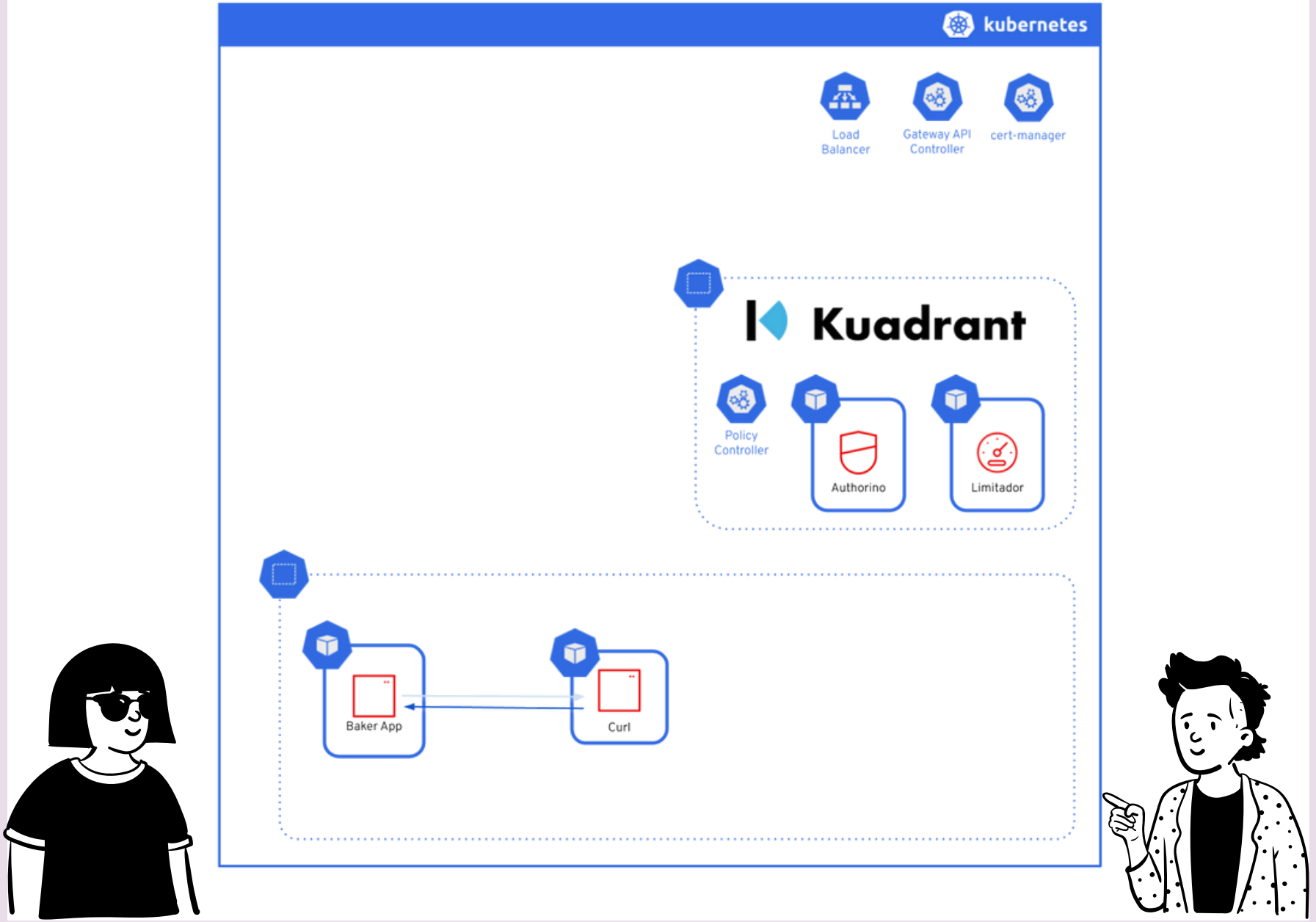
My work depends on Chiriro's a little, because the **gateways must be there**, but once they are, we're very **autonomous** regarding how we **deploy** the apps and **roll out new versions**.

We have a **namespace** where we configure the apps.

This is typically done via automation integrated with our code repositories, but today I will be demoing my day-to-day using the **kubectl CLI** tool.

In fact, I am about to **deploy** the `**baker**` **service** I mentioned before.

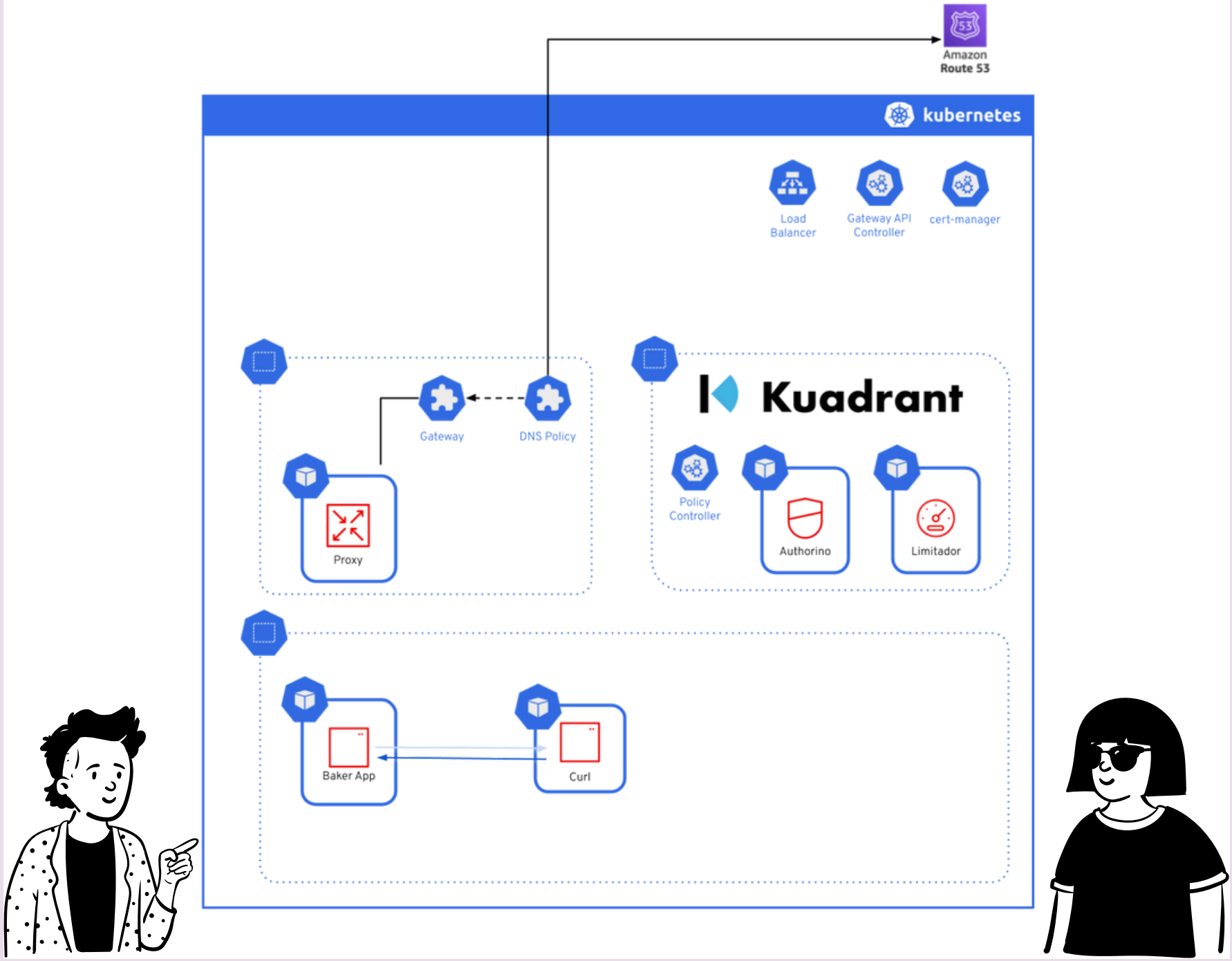



kubernetes
Load Balancer
Gateway API Controller
cert-manager
Kuadrant
Policy Controller
Authorino
Limitador
Baker App
Curl

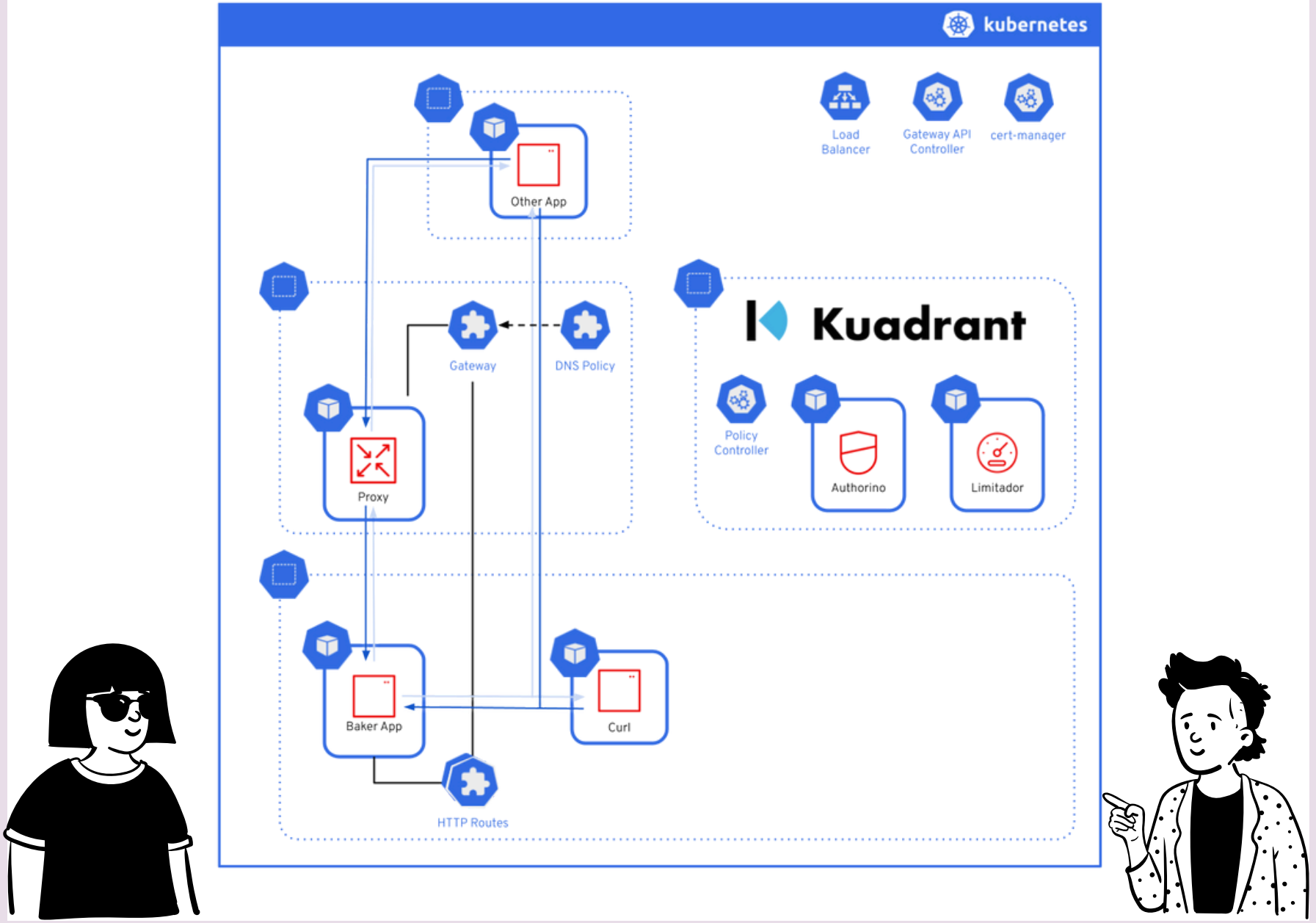
Configure Ingress Gateway

In the meantime, I'm finishing configuring an **ingress gateway** that will be used to route the **traffic to the services**.
So now, I can focus on the gateway configuration.

This gateway is going to be a centralised point of connectivity and policy enforcement for the data plane.

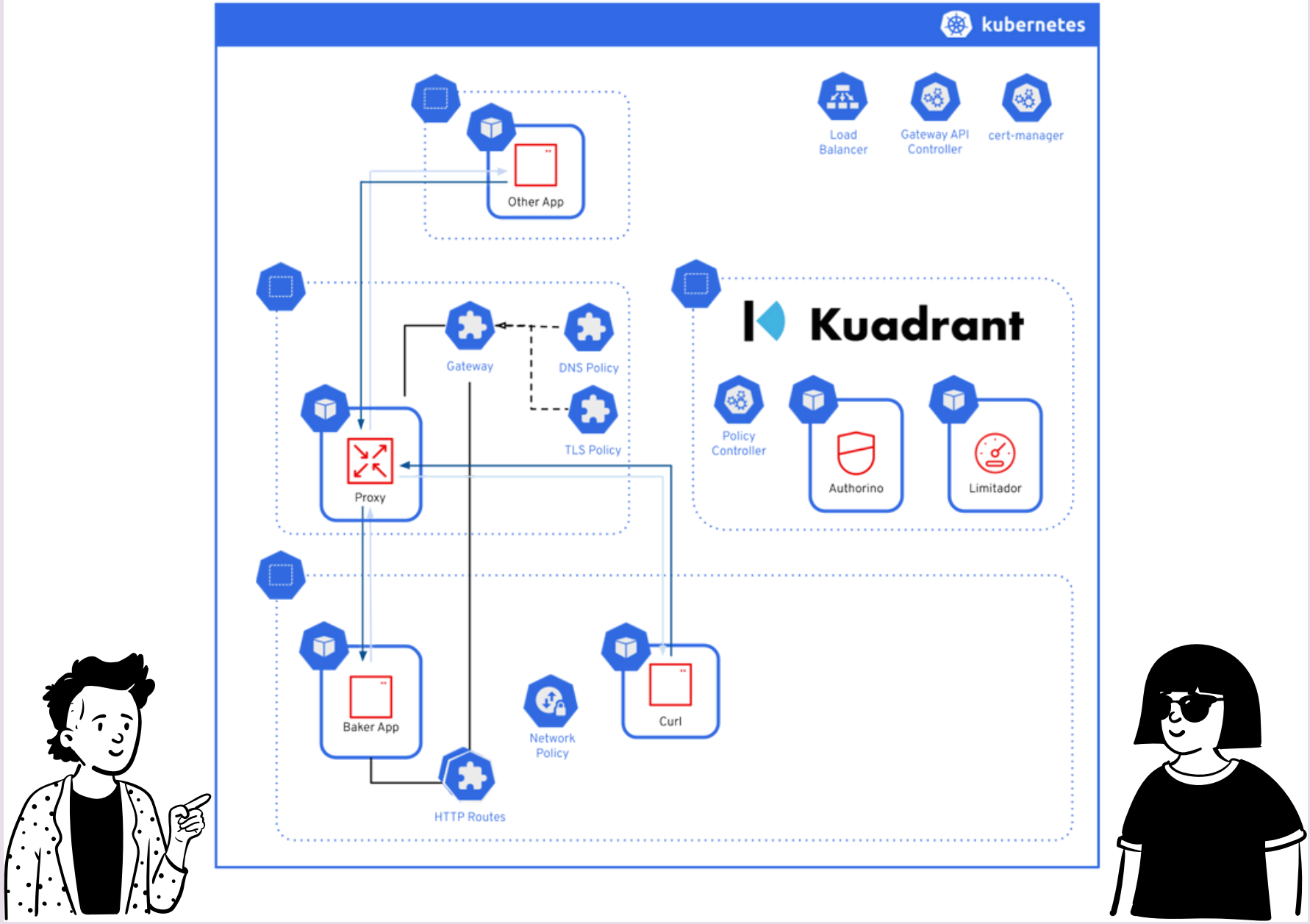

Amazon
Route 53
kubernetes
Load
Balancer
Gateway API
Controller
cert-manager
Gateway
DNS Policy
Proxy
Kuadrant
Policy
Controller
Authorino
Limitador
Baker App
Curl

Connecting to the Gateway


kubernetes
Load Balancer
Gateway API Controller
cert-manager
Other App
Gateway
DNS Policy
Kuadrant
Policy Controller
Authorino
Limitador
Proxy
Baker App
Curl
HTTP Routes

Securing the Gateway

I've realised we might have traffic within the cluster hitting your apps directly. We need a **NetworkPolicy** so all the traffic goes through the ingress gateway.


kubernetes
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Baker App
Network Policy
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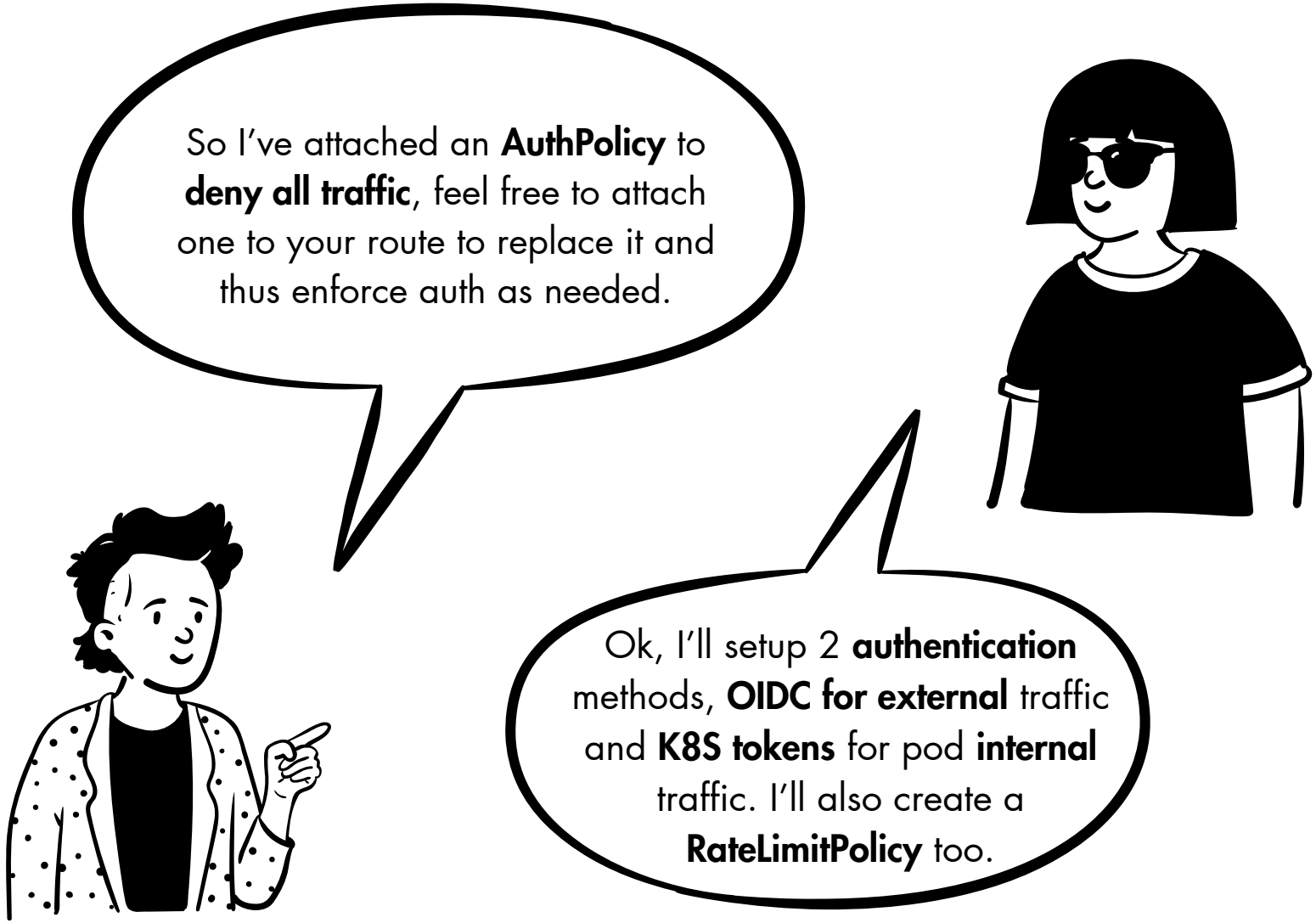
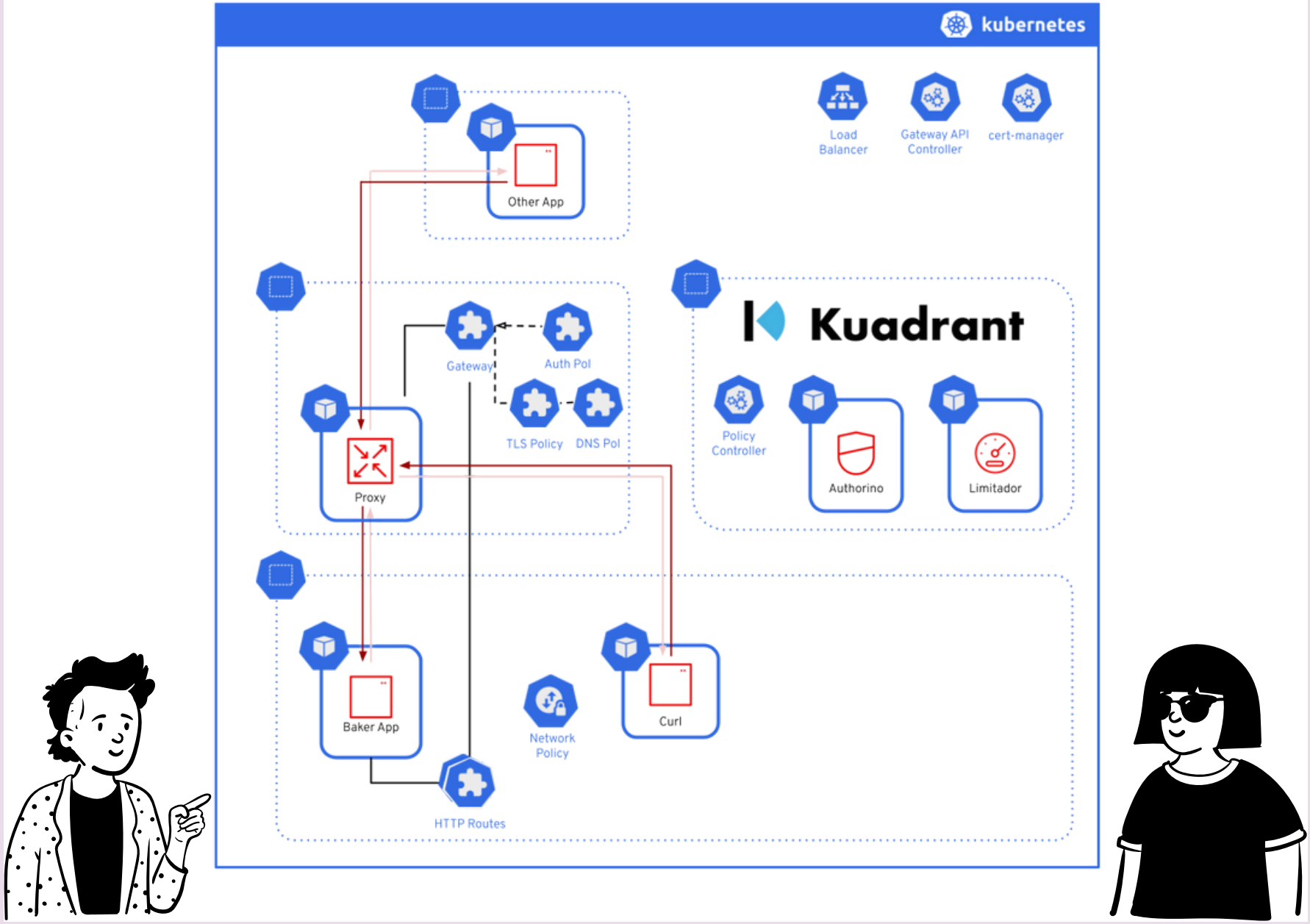
HTTP Routes

Authenticated Traffic




kubernetes
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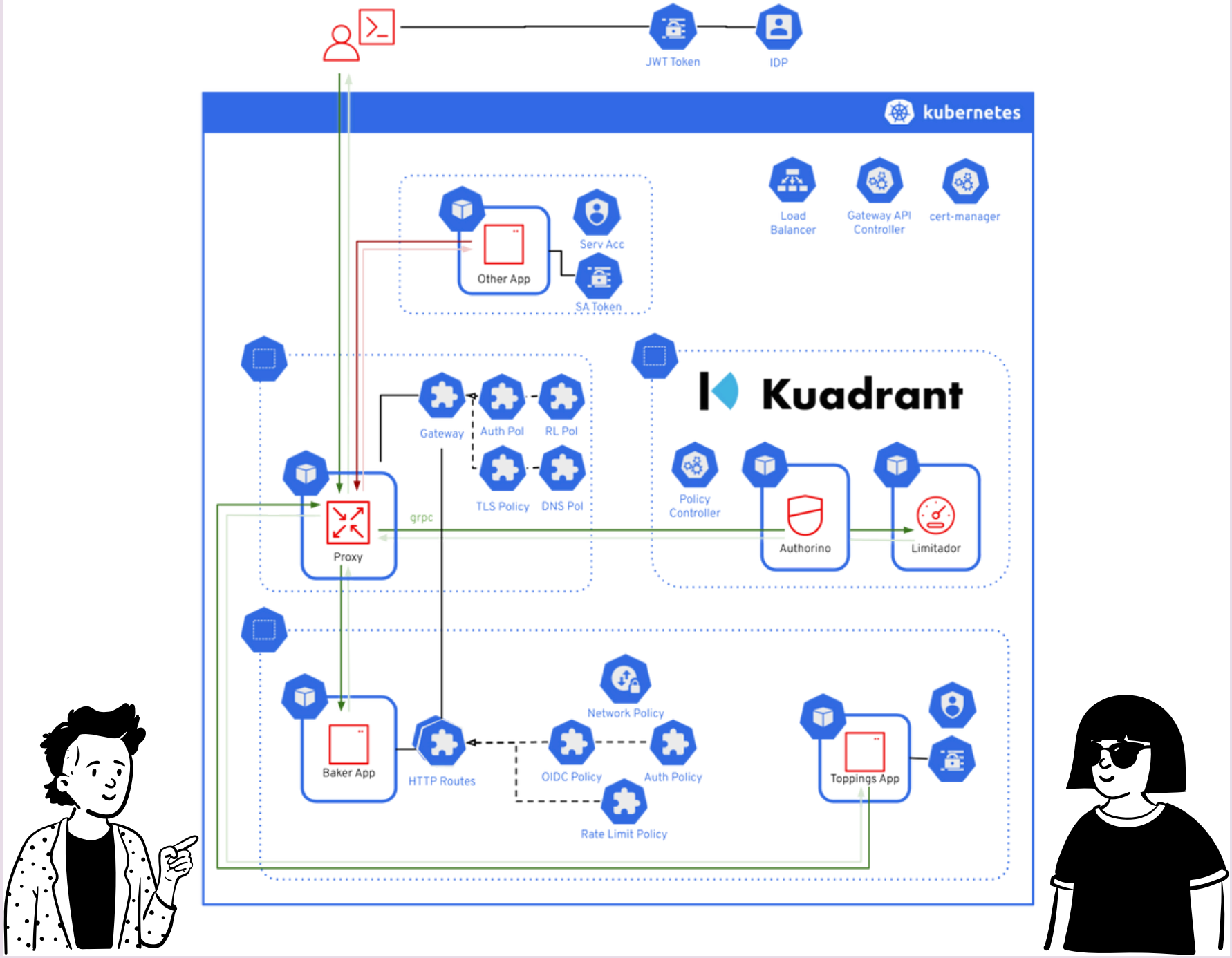
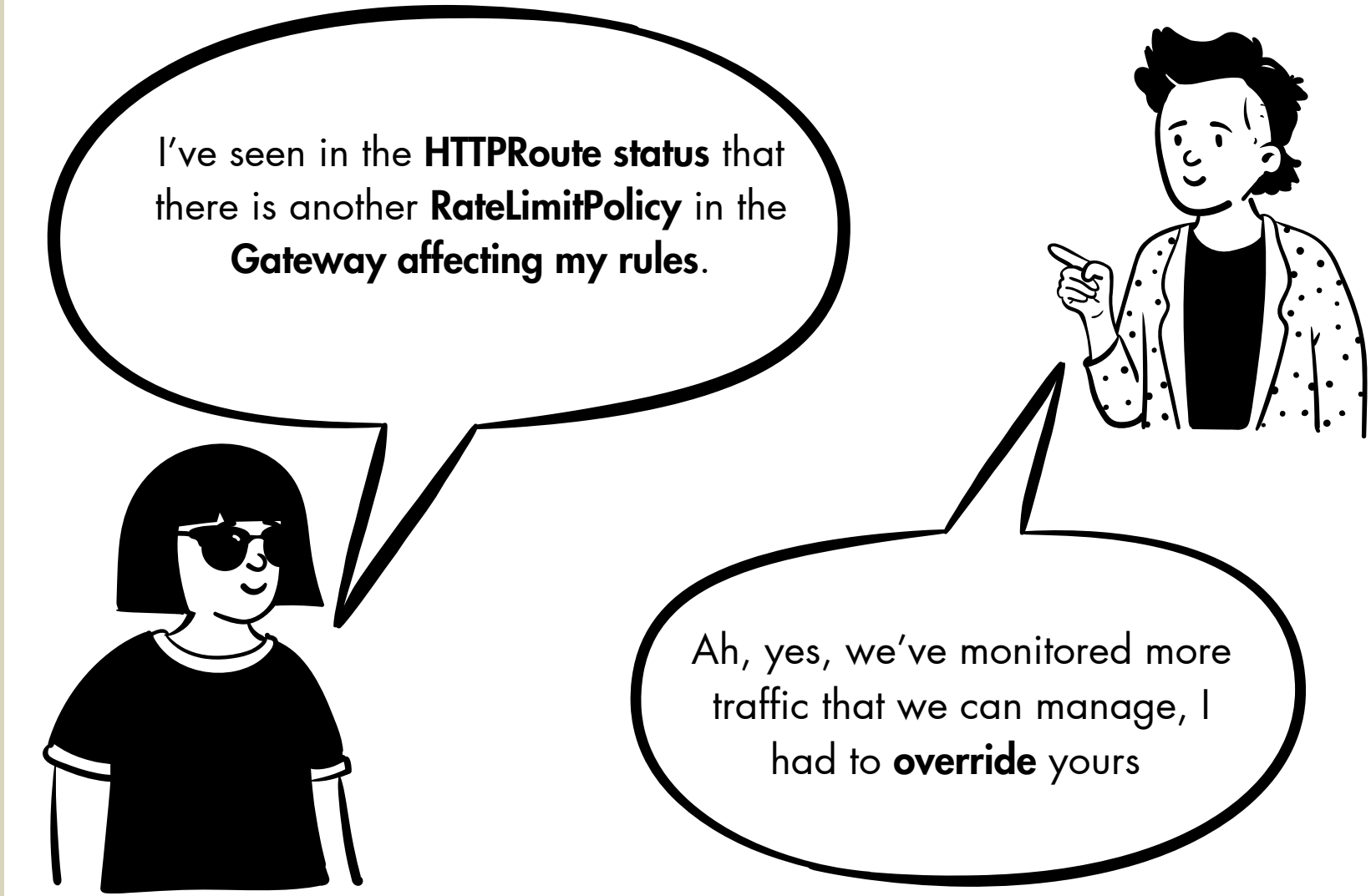
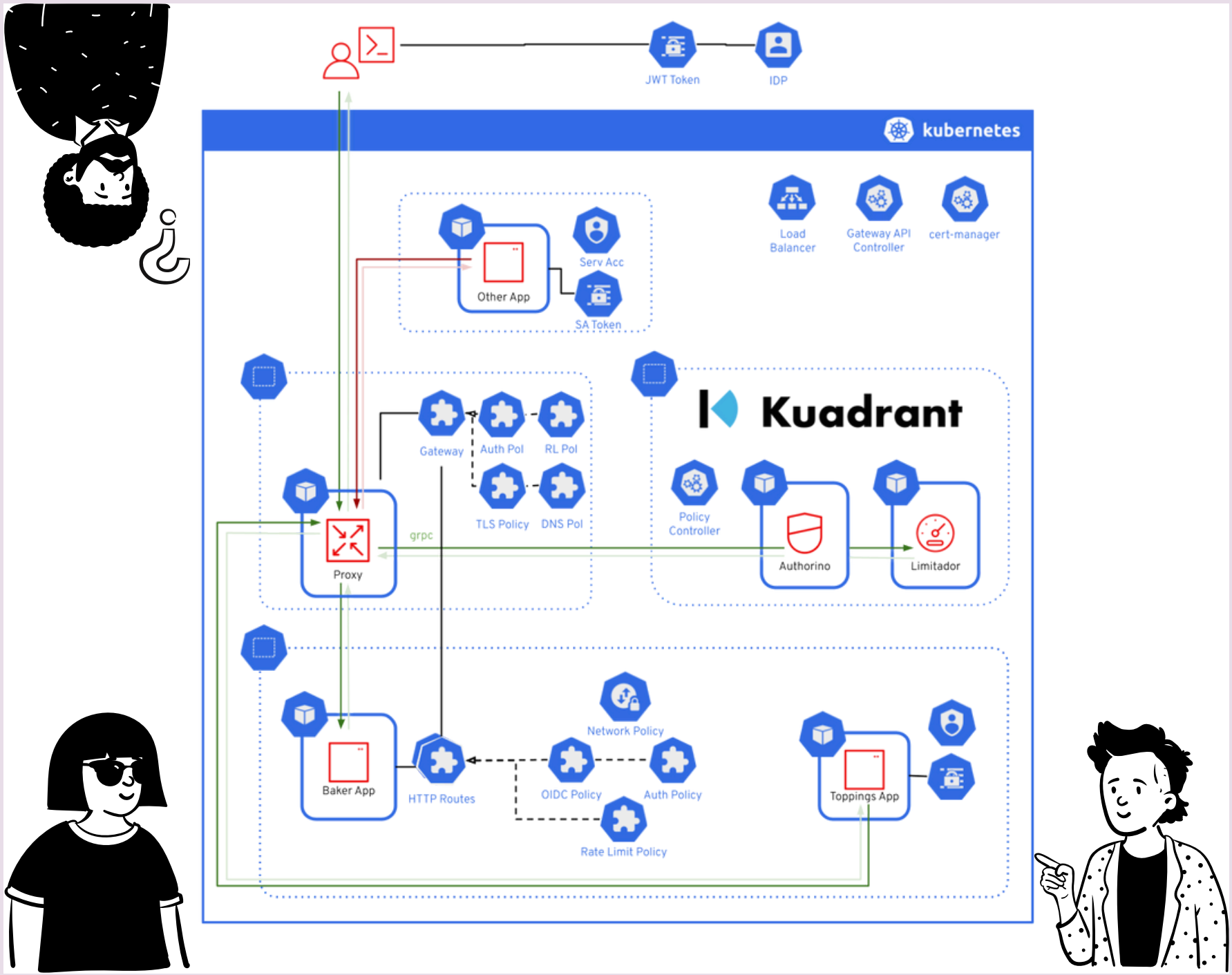

JWT Token
IDP
kubernetes
Load Balancer
Gateway API Controller
cert-manager
Other App
Serv Acc
SA Token
Gateway
Auth Pol
RL Pol
TLS Policy
DNS Pol
Proxy
grpc
Kuadrant
Policy Controller
Authorino
Limitador
Network Policy
Baker App
HTTP Routes
OIDC Policy
Auth Policy
Rate Limit Policy
Toppings App

Rate limiting

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Policy Controller
Authorino
Limitador
Network Policy
Baker App
HTTP Routes
OIDC Policy
Auth Policy
Rate Limit Policy
Toppings App

Questions ?

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@guicassolato