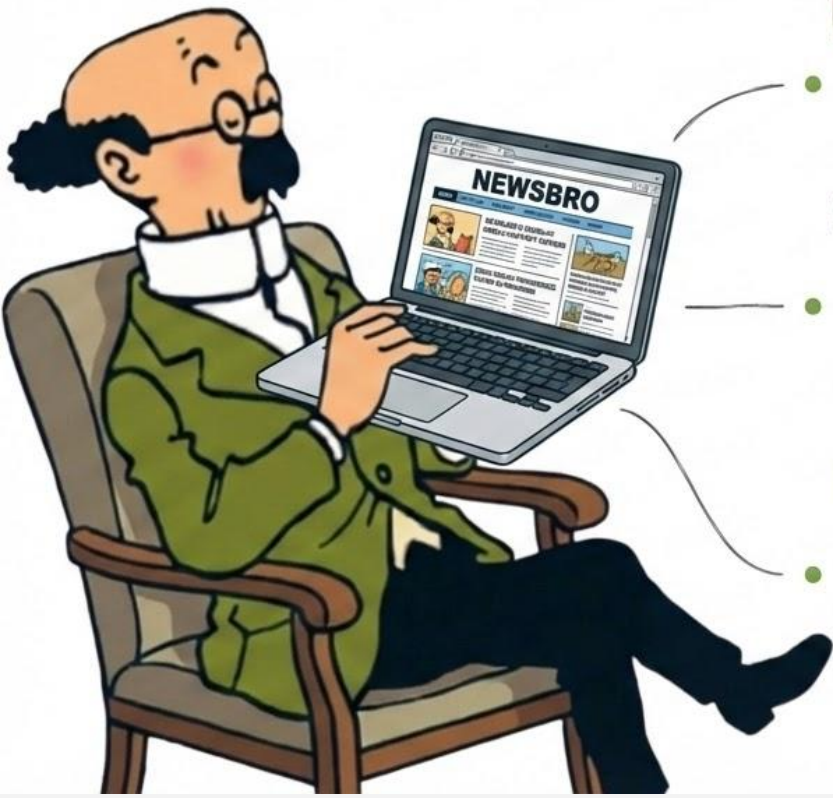




NewsBro

*Matéo Lelong - Maxim Bocquillion
Oscar Le Dauphin - Samy Yacef*

Why NewsBro?



- **Privacy-aware** news reader + recommender.



- **Core features:** browsing, search, article reading, likes/saves, recommendations.



- **Goals:** high availability, strong security, observability, extensibility.



- **Clients:** Web + Mobile (Capacitor/Ionic).



- **Infra:** Kubernetes, PostgreSQL, MinIO, Kafka, Vault + ESO, Terraform, Datadog.

I. Features



Accounts & Identity

OIDC/social login,
anonymous sessions



Browsing

topic feeds, trending,
curated lists



Search

faceted + semantic
(SBERT)



Reading

full-article reader



Interactions

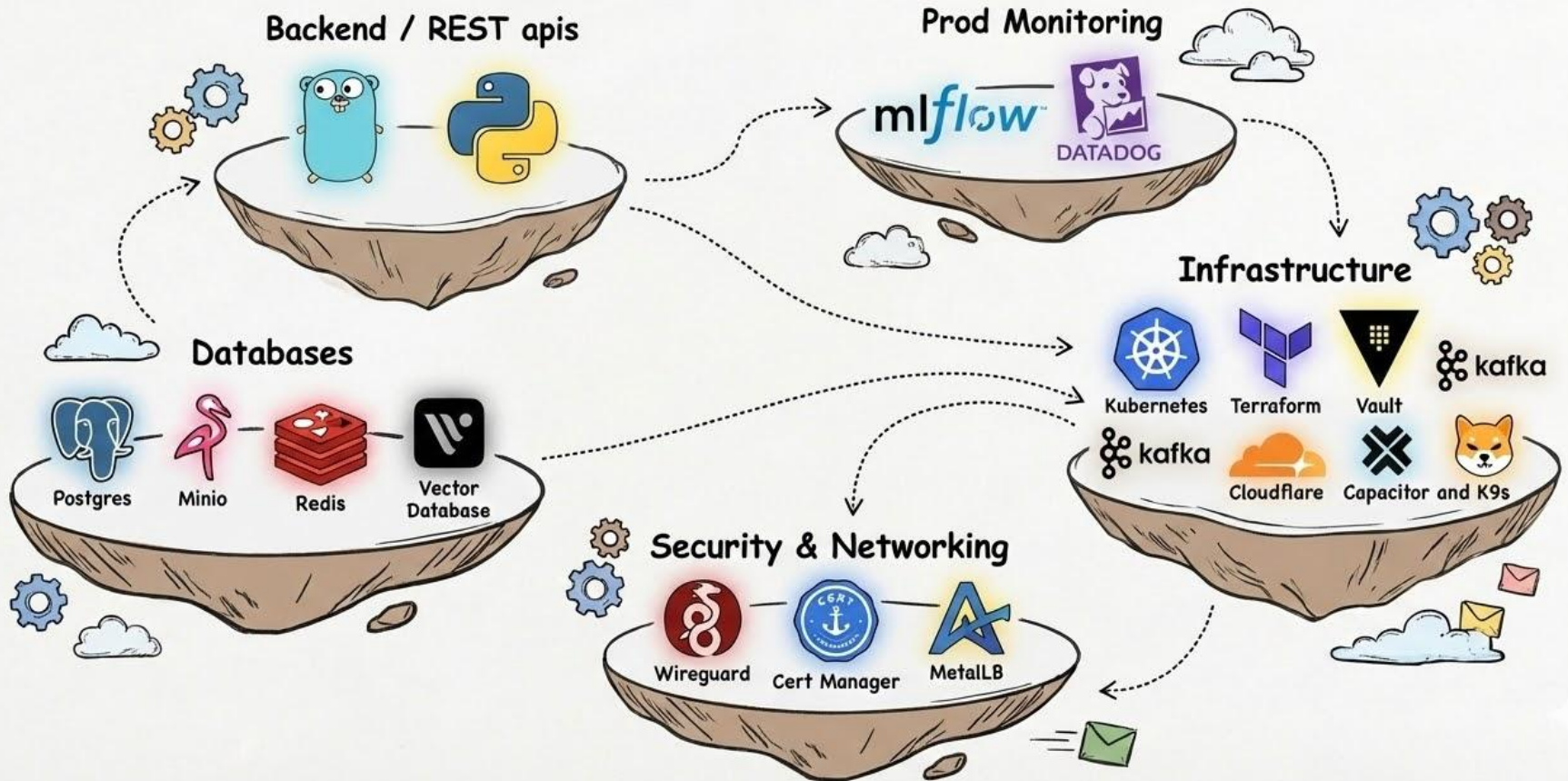
like, save, share



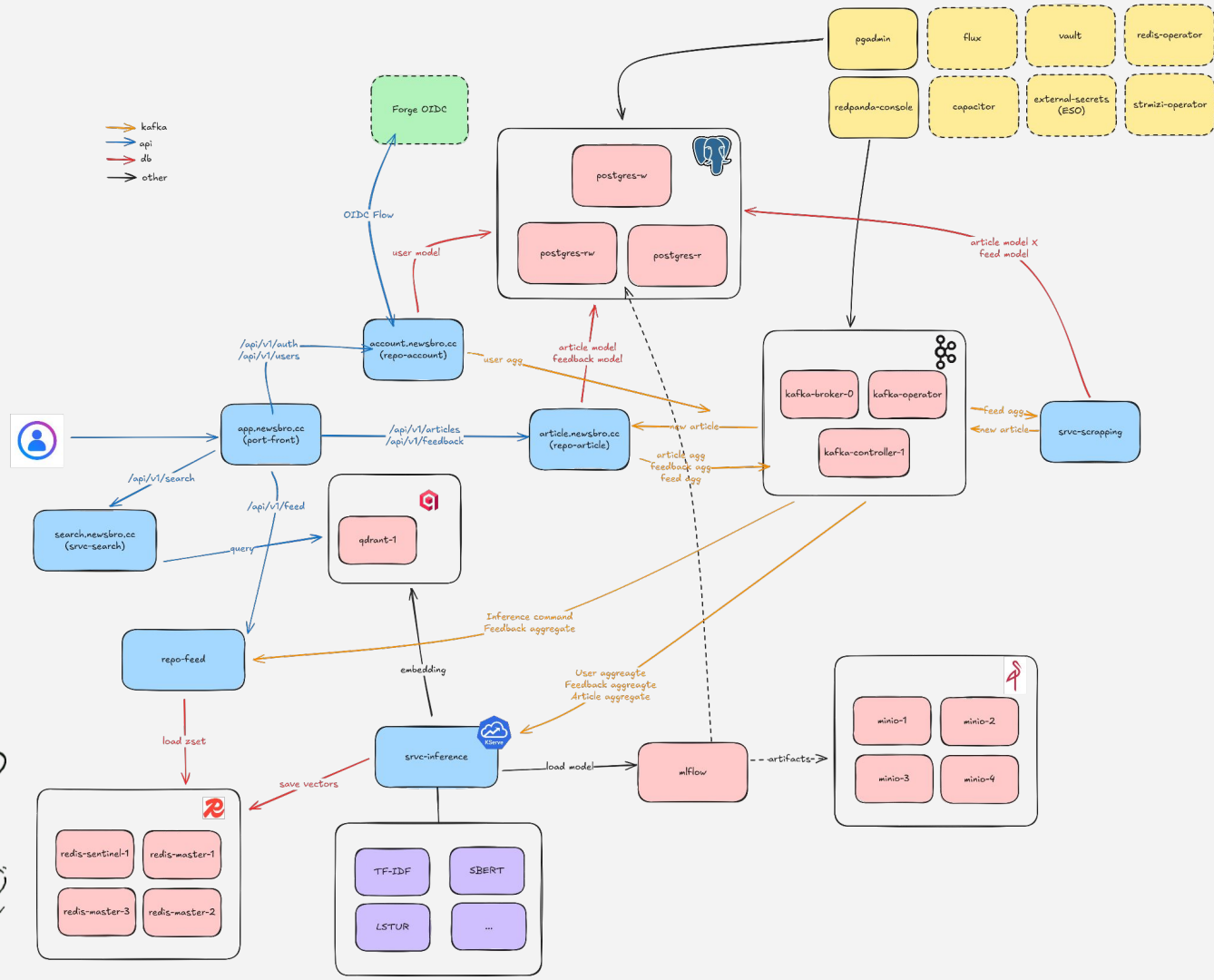
Recommendations

feed from previous
interactions

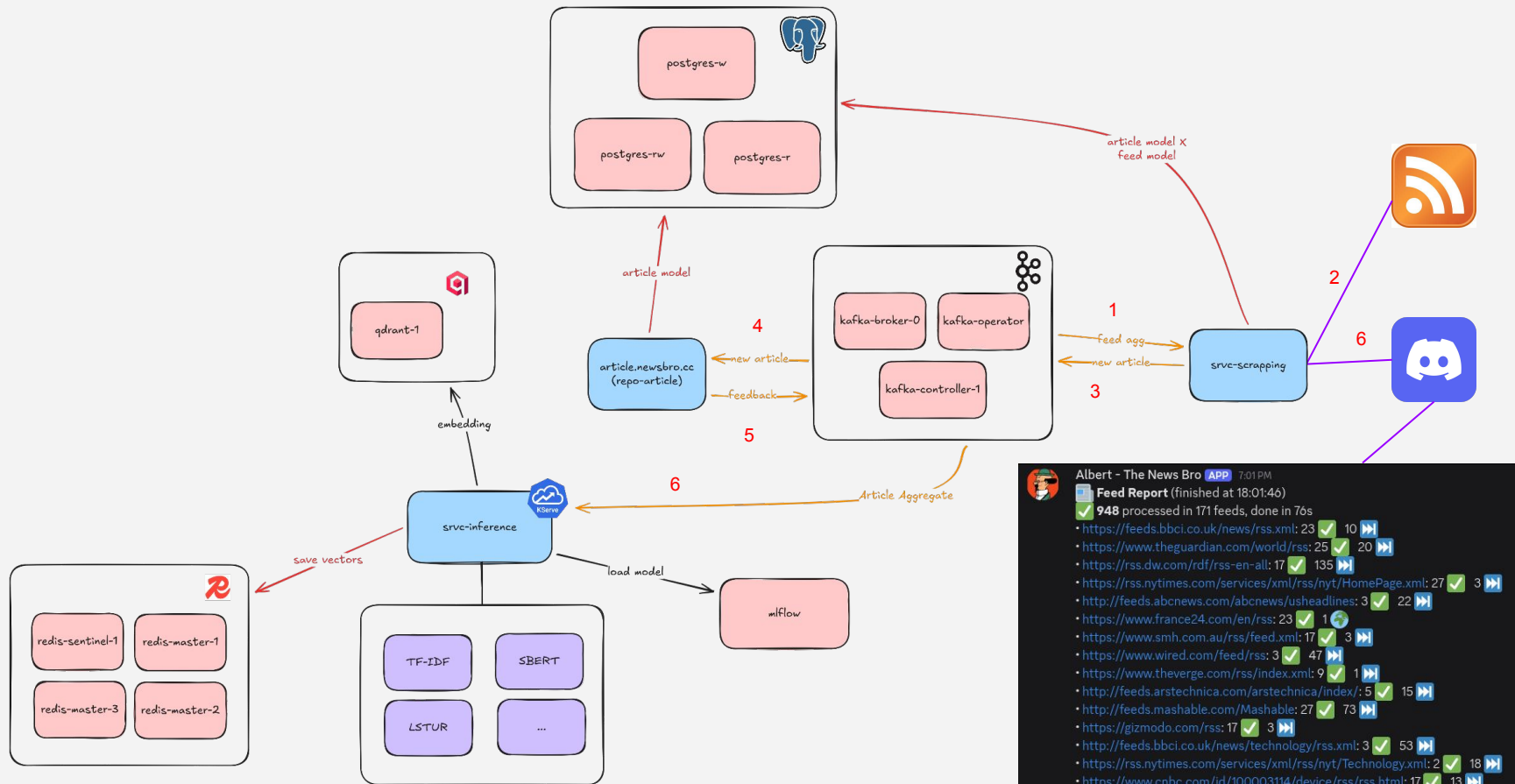
Technology Stack Overview



I. Architecture Overview

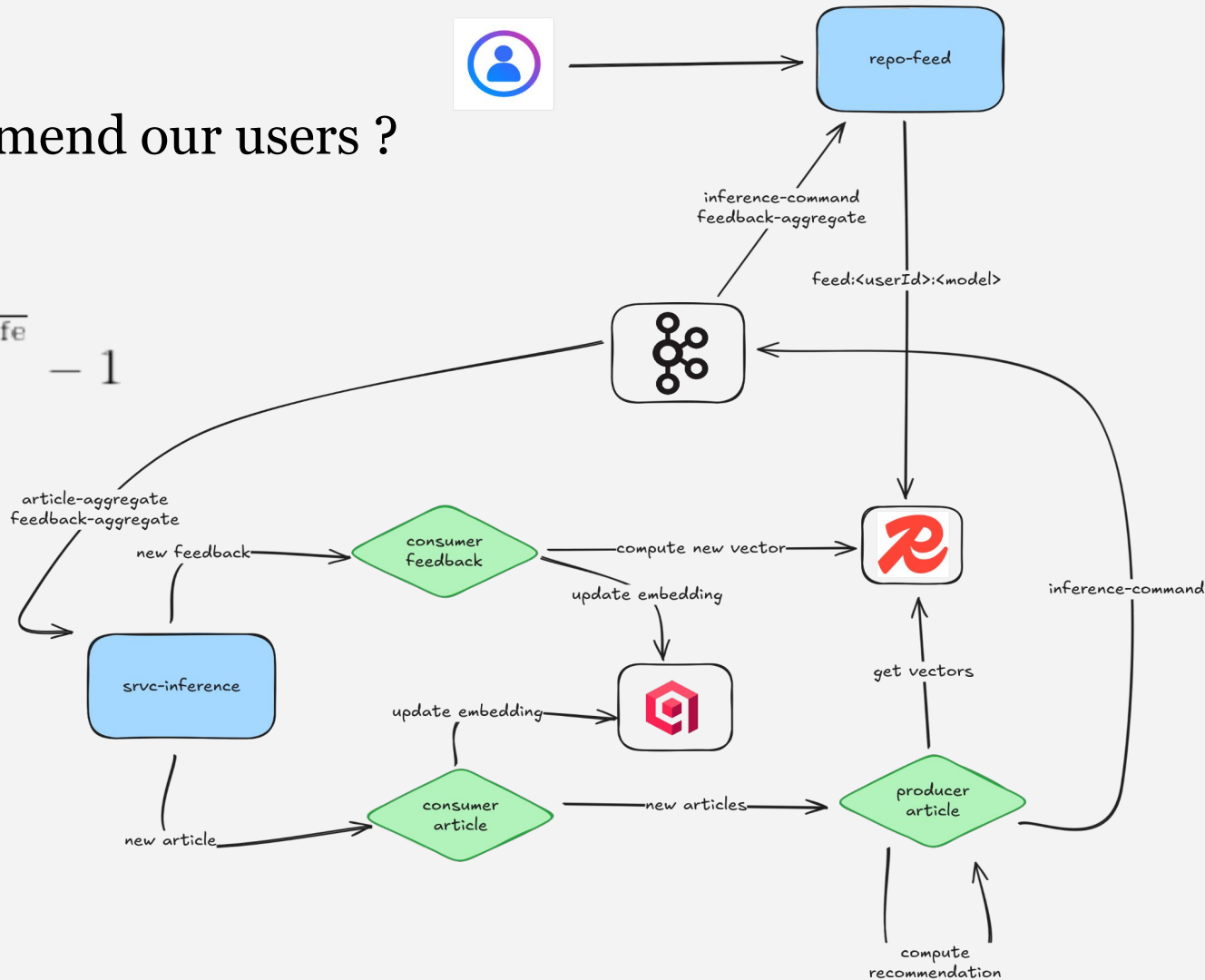


How do we ingest articles ?

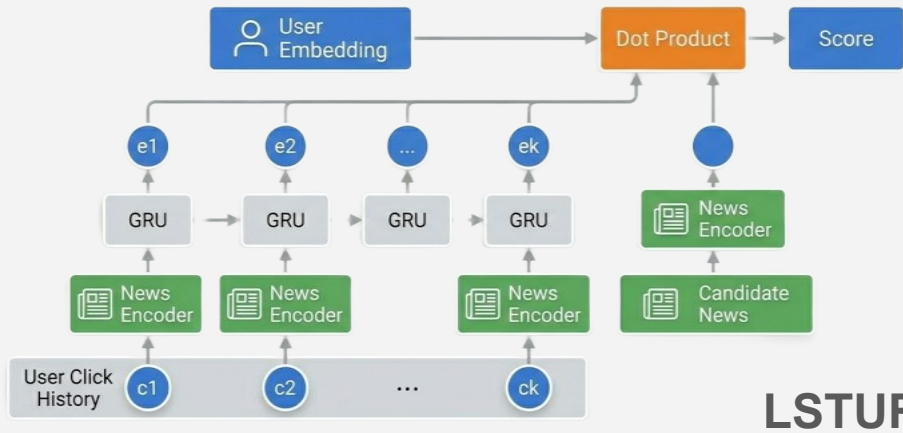
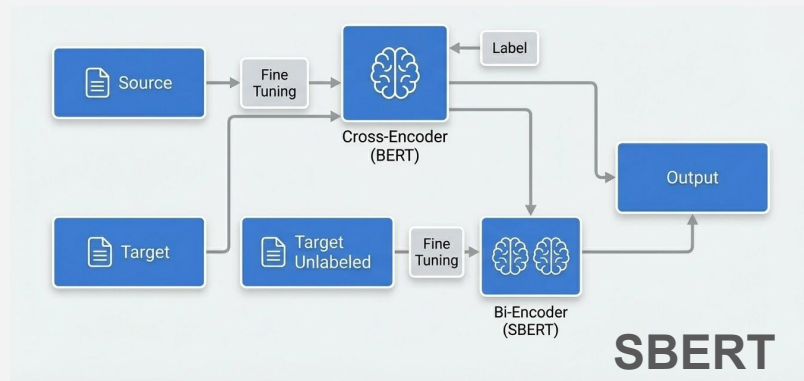
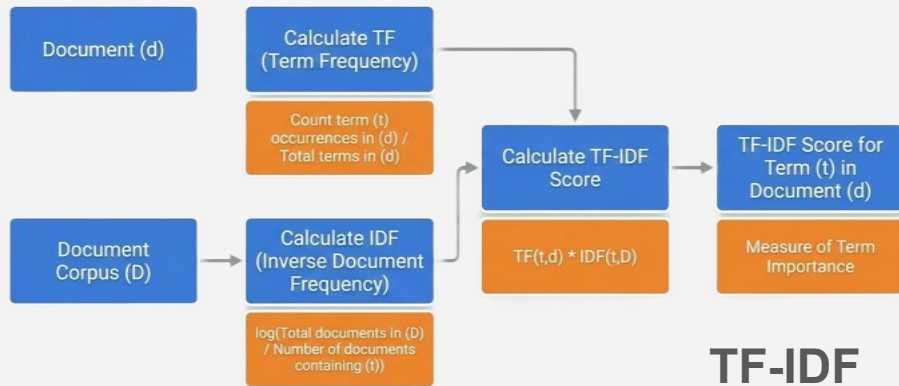


How do we recommend our users ?

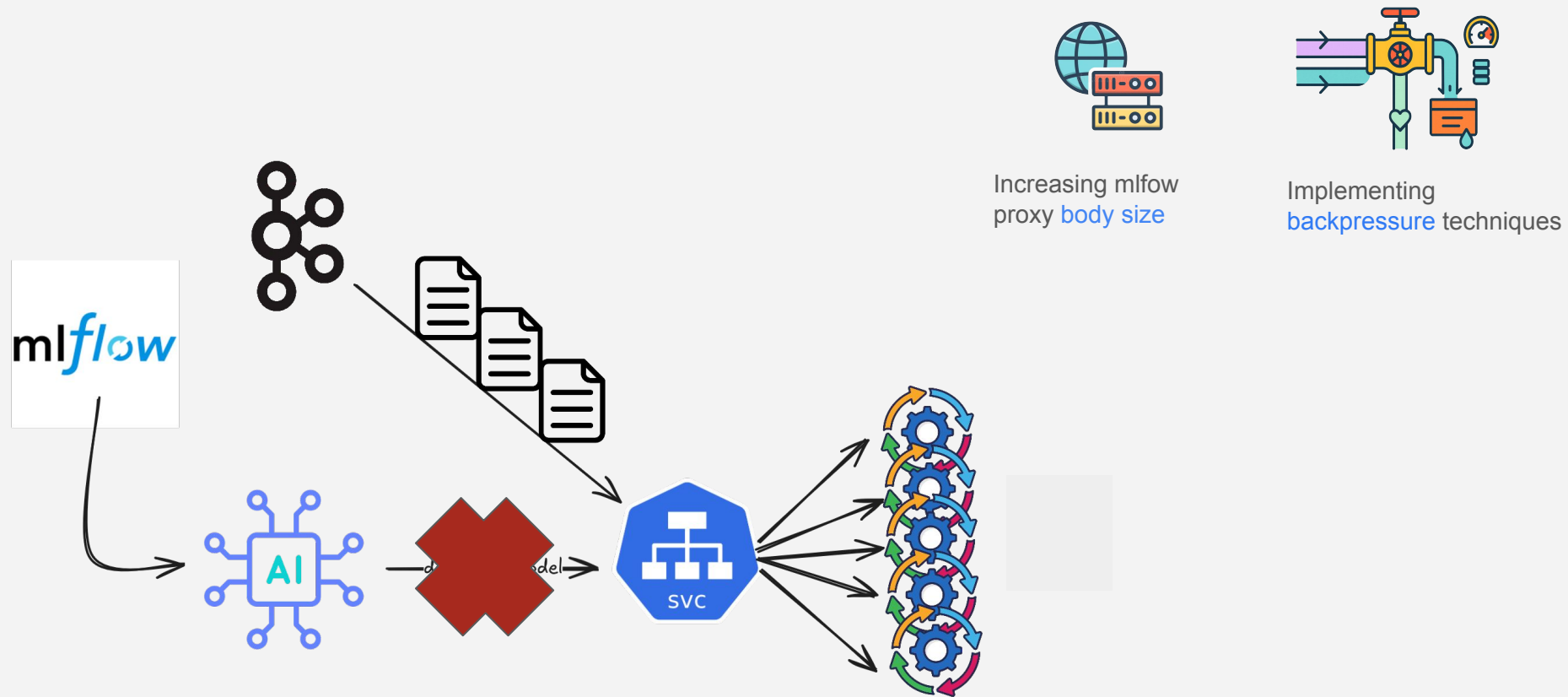
$$f(t) = s + \left(\frac{1}{2}\right)^{\frac{t}{\text{halfLife}}} - 1$$



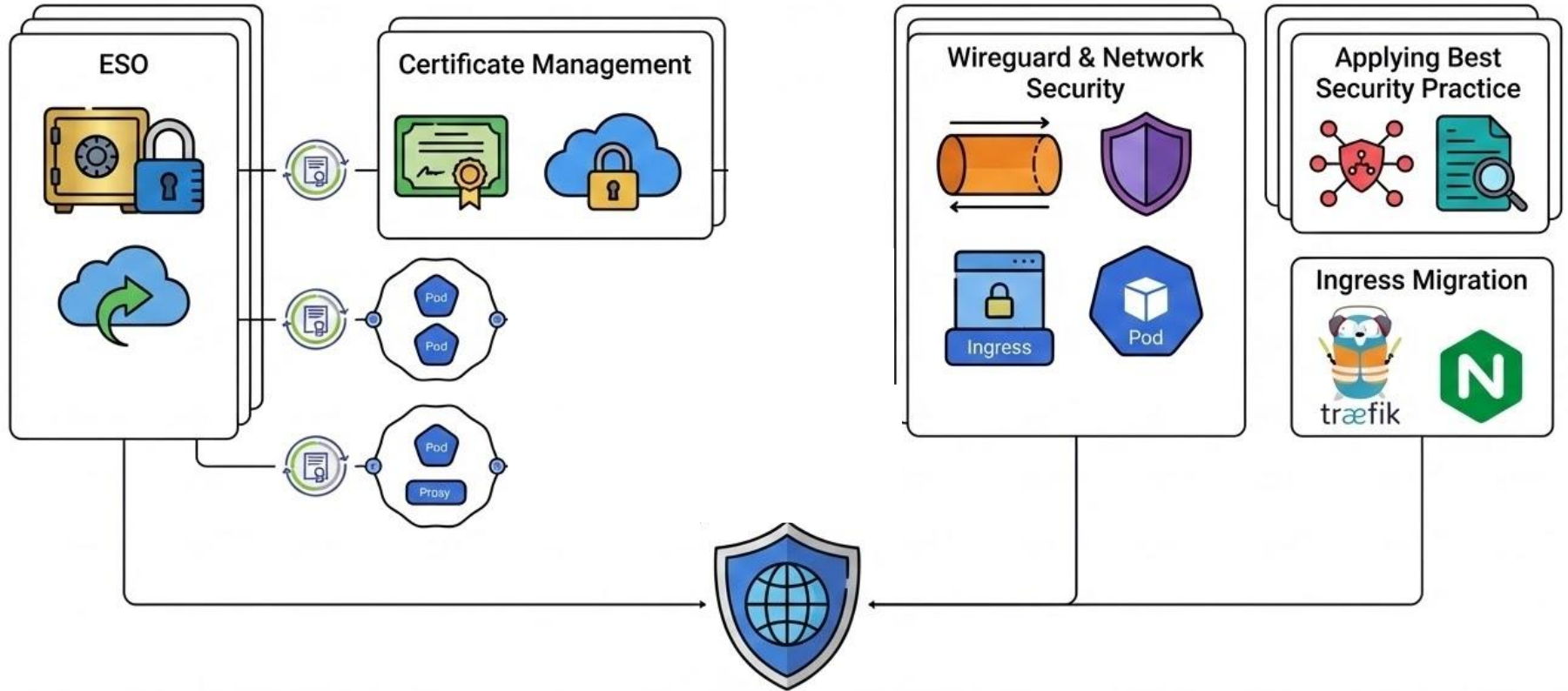
II. Models



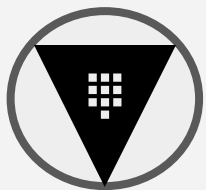
High pressure & Proxy bottleneck



III. Security & Networking



How do we keep our **secrets** secret ?

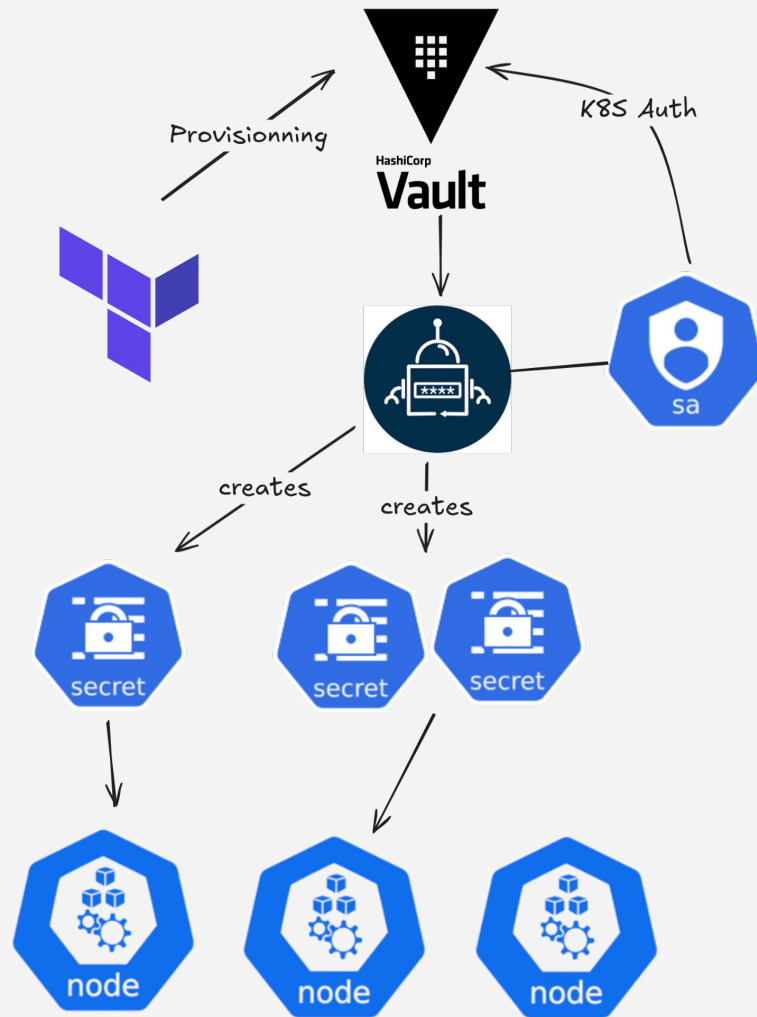


Vault stores secrets and manages **authorization**

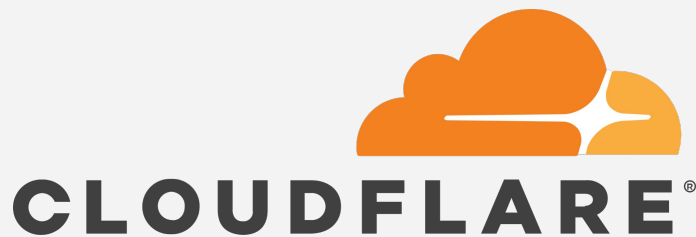
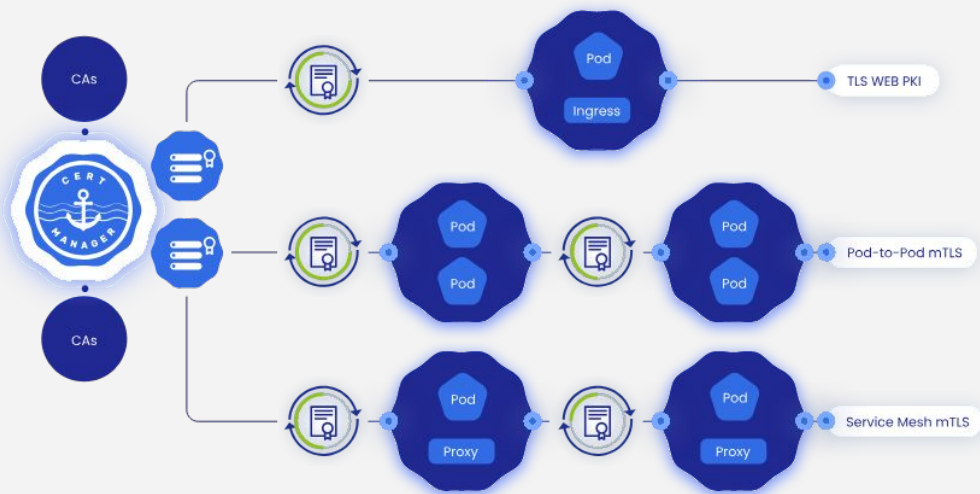
ESO handles **retrieval** and distribution in cluster



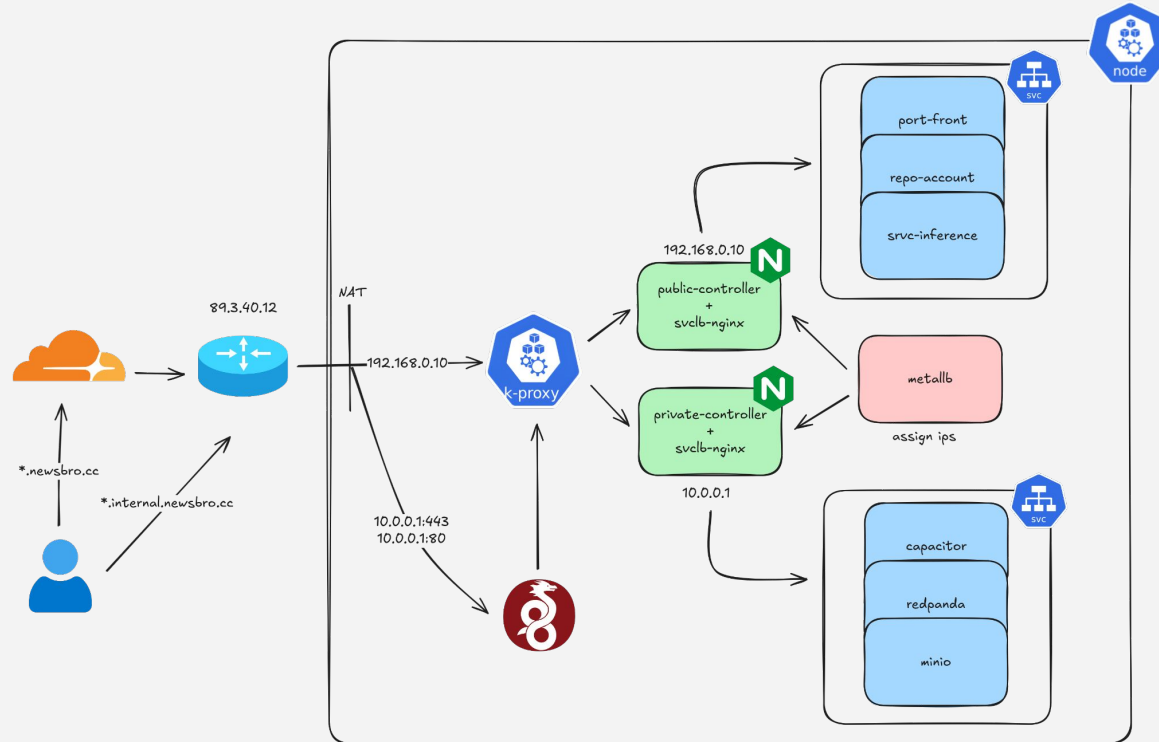
Terraform allows provisioning by admin



Managing certificates with cert-manager



VPN & Private Ingress for internal services



Applying best security principles



Network Policies
to secure
east-west traffic



Docker Image
hardening
image signing, multi
step build, image
scanning



Pod Security Policies
reducing privileged
access and
escalation



Hardening Firewall
and NAT rules
reducing potential
threats



Rate Limiting, TLS &
JWT to secure
north-south traffic

IV. Observability

ML Lifecycle & Database Management



MLflow



redisinsight

RedisInsight

Monitoring & Infrastructure



DATADOG

Datadog



capacitor

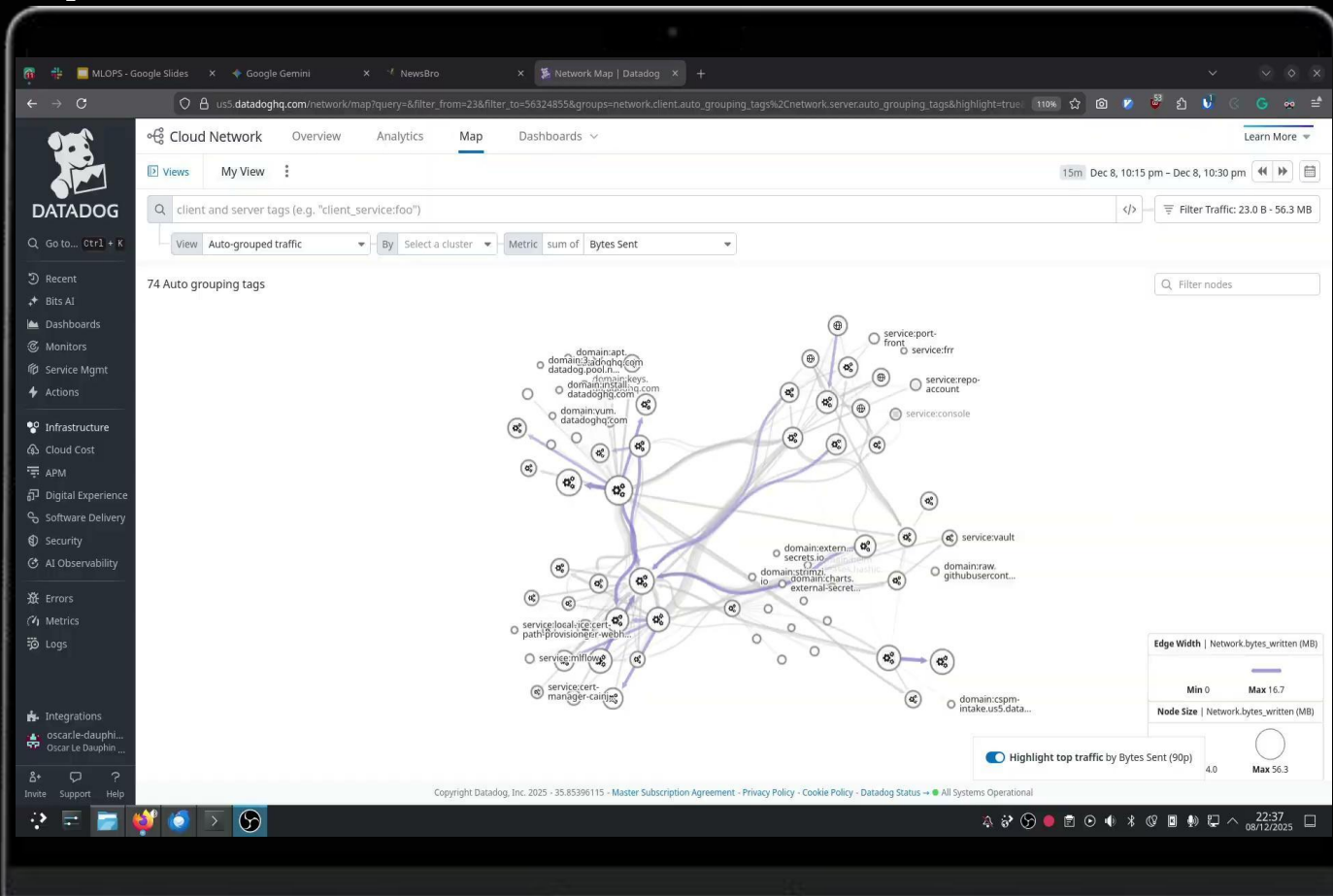
Capacitor

K9s

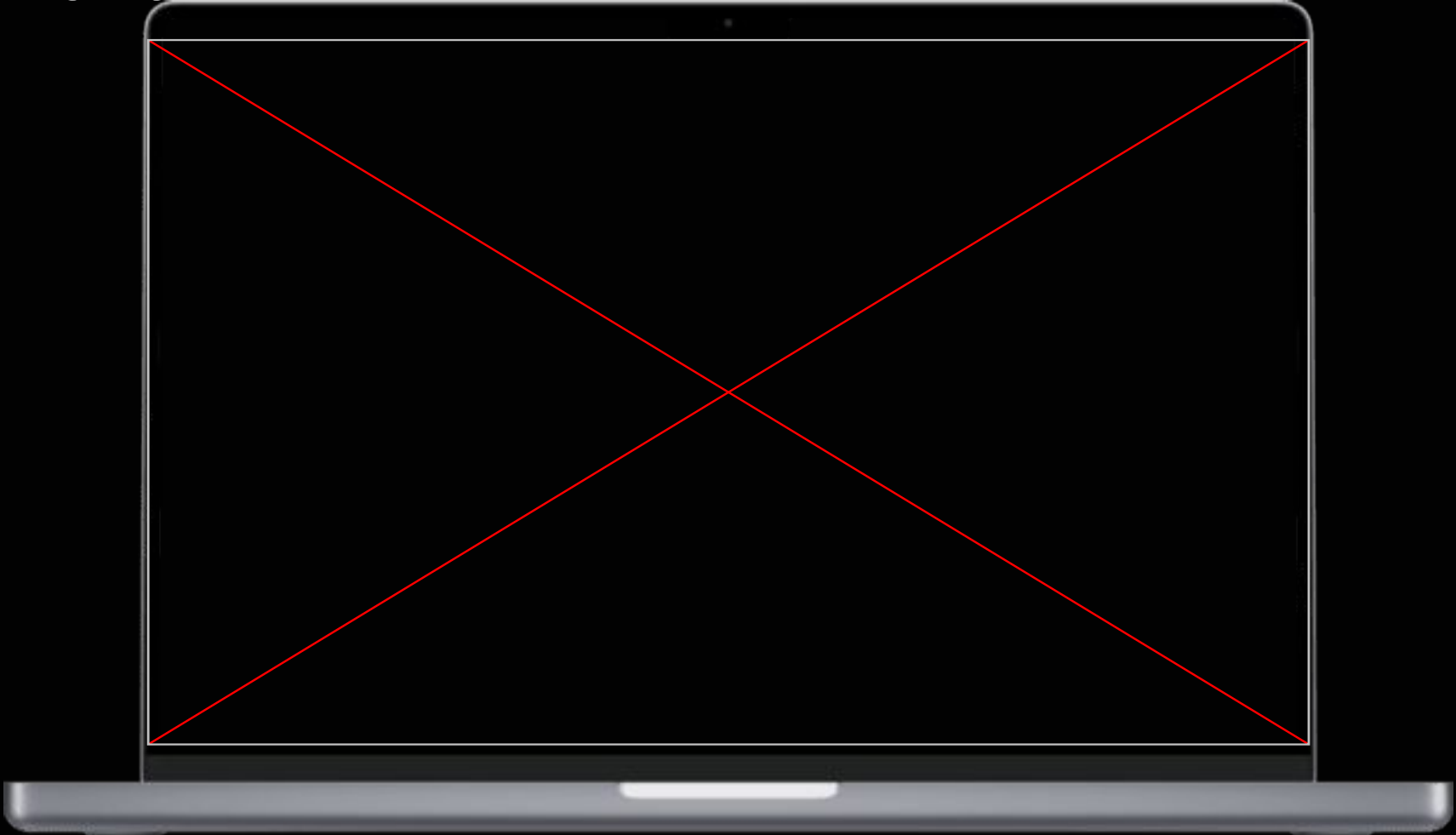
K9s

DEMO !

Network Map Demo



APM Demo



App Demo



TRY IT OUT!



NewsBro

<https://app.newsbro.cc>

