

Architecture Blueprint

SOLUTION ASSESSMENT FOR CANGREJO SA

BY  aiven

Current State

CONCERNS

Performance issues (large analytics tables)

Vendor **lock-in**

Data security and GDPR **compliance**

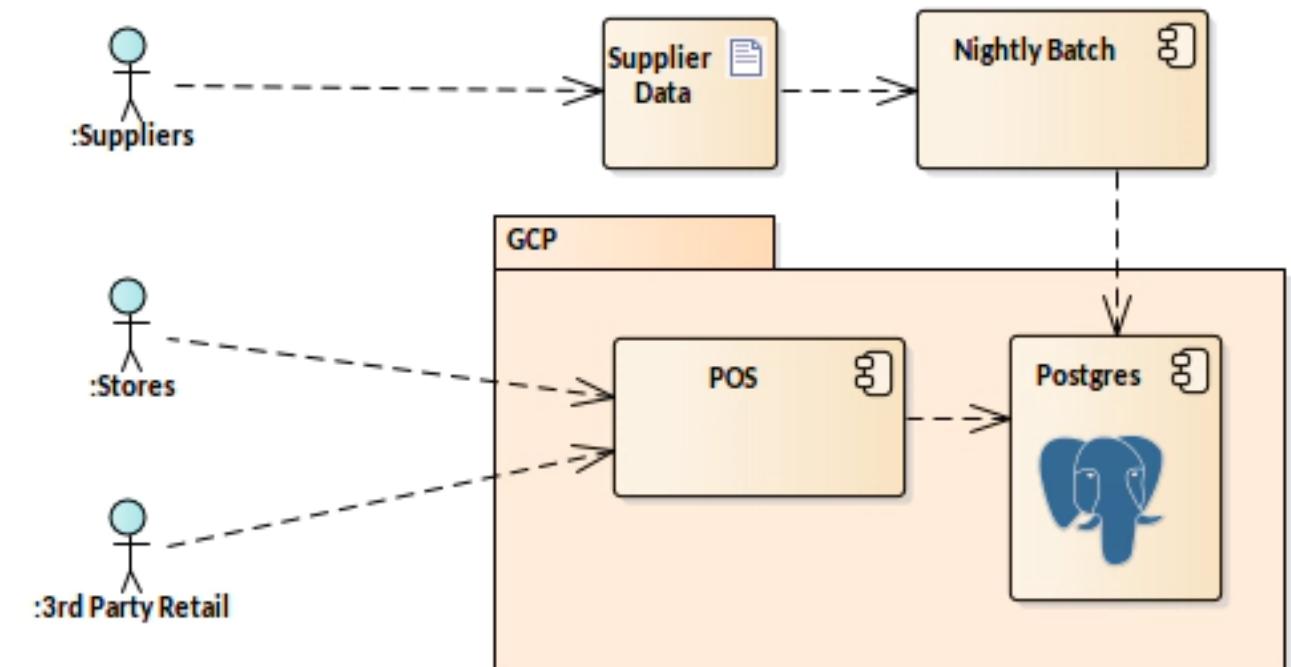
NEEDS

Move to **public cloud**

Decoupled, easily **extensible architecture**

- 3rd parties integration
- expansion to logistics

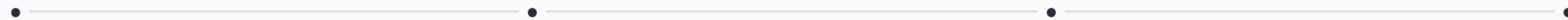
Improved **analytics**



Requirements

Requirement	Priority	
Address Performance Issues	Critical !	
Loosely Coupled & Easily Extensible Architecture	High	
Cloud-first Architecture	High	
Data security and GDPR Compliance	Critical	
Improved Analytics	Medium	

Suggested Course of Action



Performance Tuning

- Setup a DB clone in Aiven.io
- Investigate & propose optimal solution based on the root-cause

Decoupled Architecture

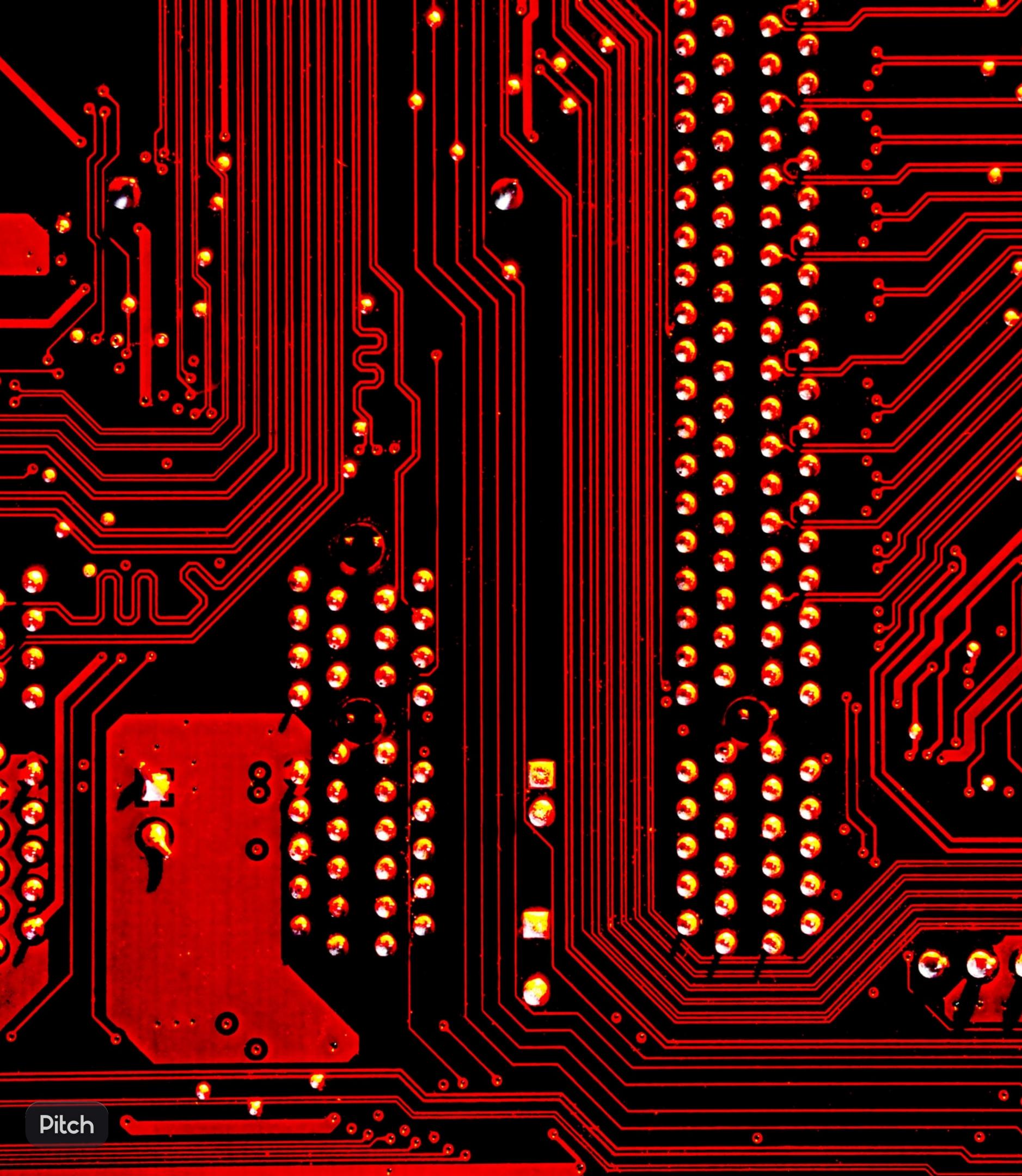
- Setup Apache Kafka for Orders processing
- Real-time Supplier data processing

Advanced Analytics

- Leverage Kafka for real-time analytics processing
- Deploy and leverage a visualization platform, e.g. Grafana
- Explore options for predictive analytics

3rd Party Integration

- Logistics
- Other 3rd parties onboarding



Performance Tuning

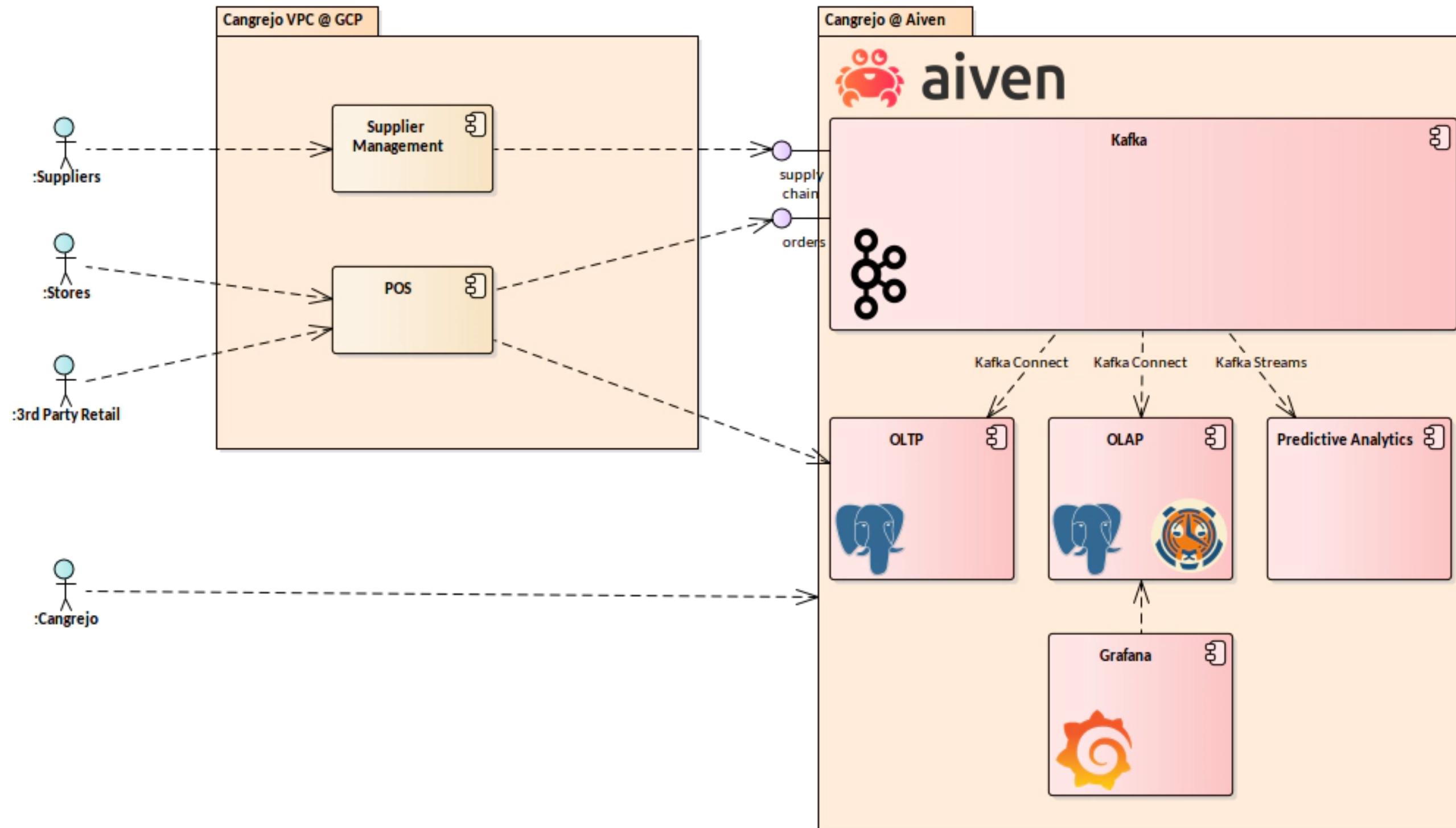
Following options might be considered based on the root-cause:

- Review ***Explain Plans*** of slow queries
 - consider additional Indexes & further SQL Tuning
- **Sharding**
- Separation of **OLTP** & **OLAP** databases
- Leveraging **Timescale** add-on 
- Separate **read replica** if writes are too high
- If Postgres is not suitable for given use case further additions to the technology stack may be warranted: e.g. *Elasticsearch*

👉 It is however recommended to leverage Postgres if possible since it will impose least amount of changes on Cangrejo's current web application

Target Architecture

Based on results of performance tuning investigation, target architecture may look as follows



Why Aiven.io?



Multi-cloud

No vendor lock-in

End-to-end security

Encryption at transit and rest

Service level guarantee

99.99%

Innovation

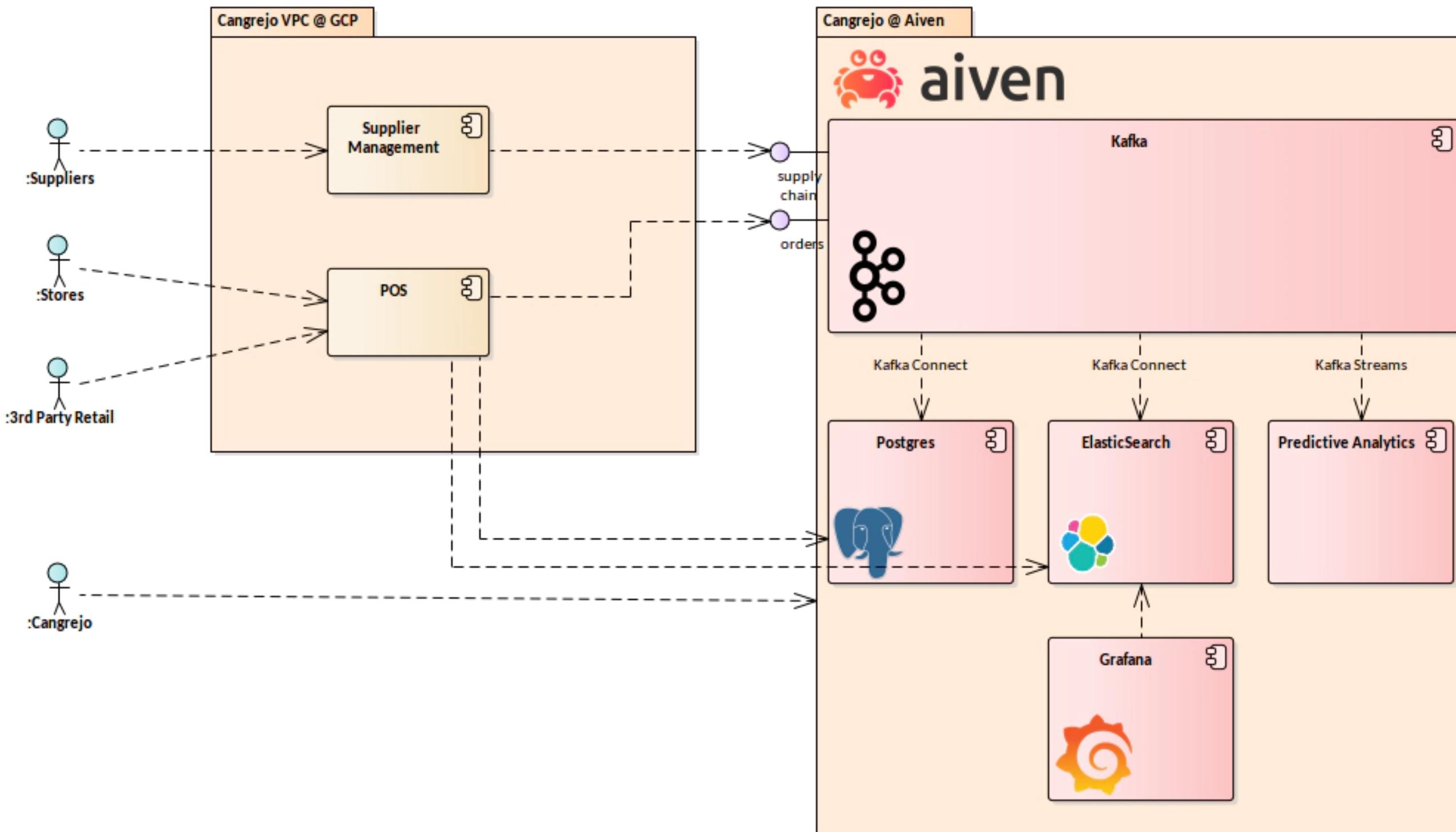
Aiven accelerates access to
the latest data technologies

Thank you!



Appendix A: Alternative Solution Design

In case performance issues warrant ElasticSearch deployment; alternative technology stack may also be considered



Appendix B: Solution Review according to my son

While the abundance of animals is aesthetically pleasing, the overall lack of dinosaurs poses a concern

