



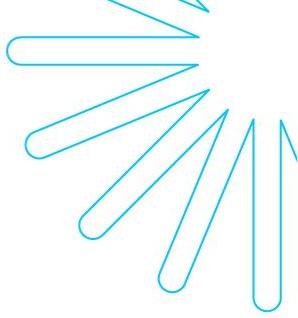
# Go Além do Básico

O Futuro do Processamento de Dados



80

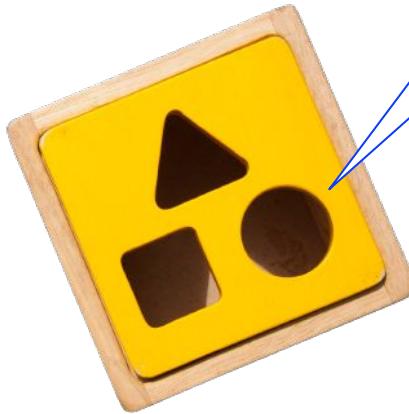
Go Além do Básico: O Futuro do Processamento de Dados



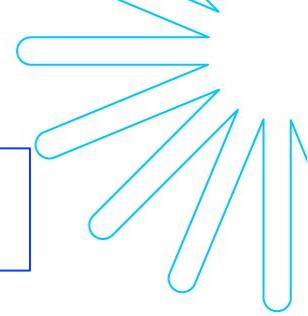
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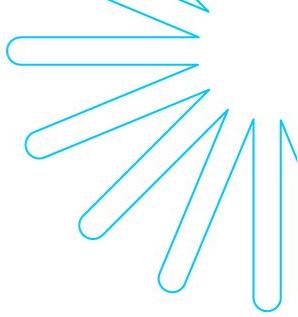


Casos de uso



Linguagem de  
Programação





*That's right! It goes into the square hole*

42352940



## “SQUARE HOLE” LANGs

- Fáceis de aprender
- Muito populares, com grandes comunidades
- Possuem muitas bibliotecas de código aberto

## GOLANG

- Rápida execução
- Alto desempenho
- Escalável
- Fácil de aprender
- Garbage collection eficiente
- Feito para concorrência
- Comunidade ativa



Porque Go é **tão pouco** usado no  
Processamento de dados?



**Leonardo Reis**  
*Engenheiro de dados*



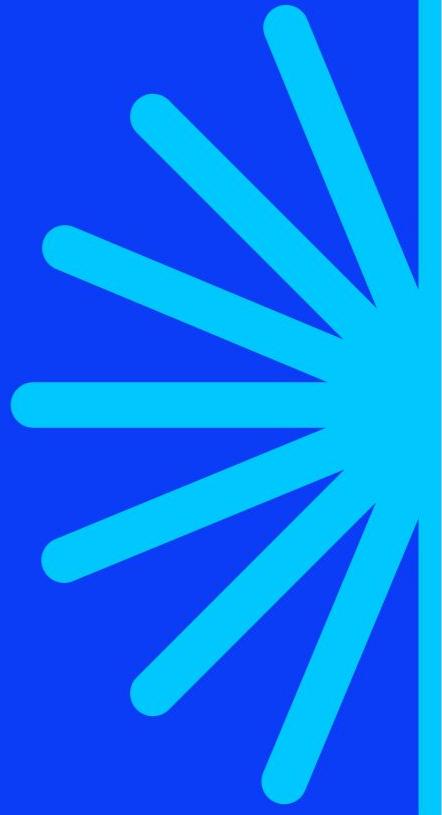
**Rilder Almeida**  
*Engenheiro de dados*

 arquivei

74117645

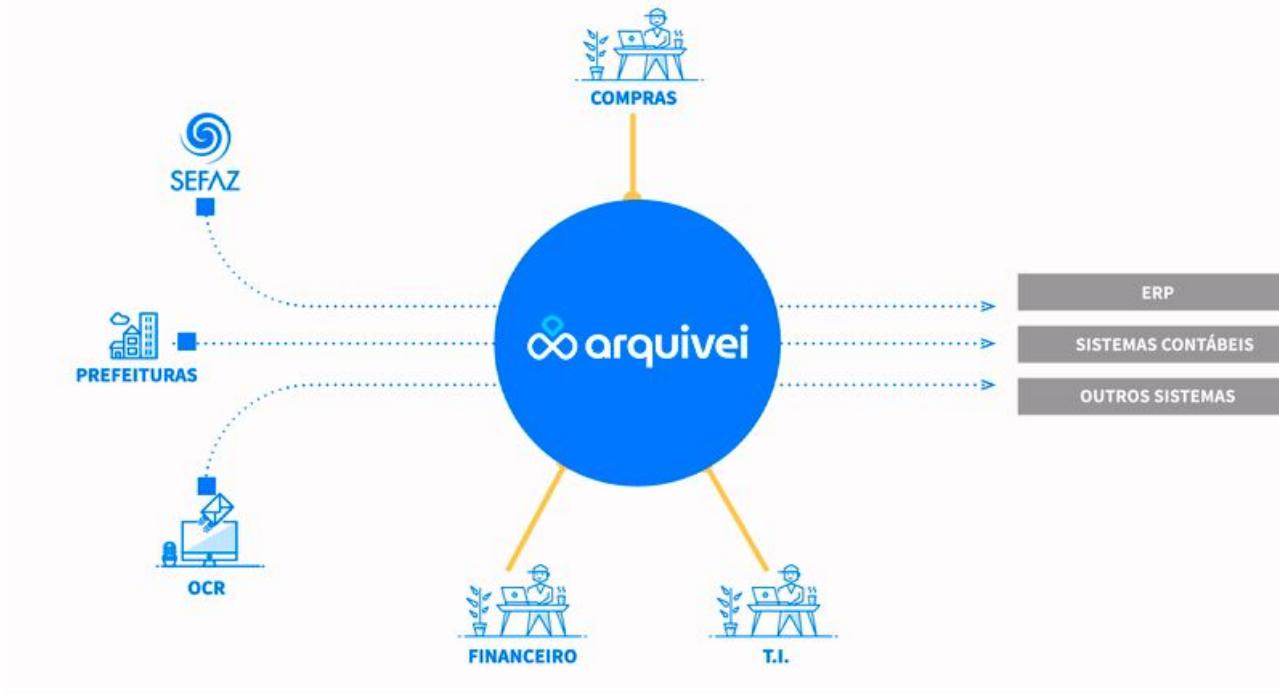
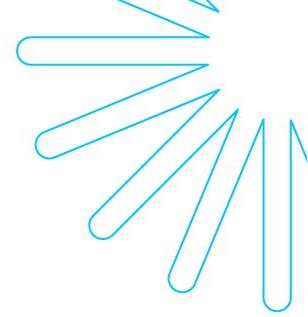


# O que é a Arquivei?



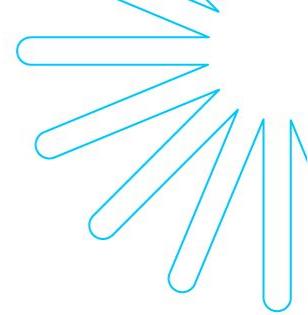


# Mais do que uma plataforma para documentos fiscais...





# Mais de 420 mil CNPJs ativos



Uber

Rappi



Batavo

São Martinho



DSD



HABIB'S



jadlog



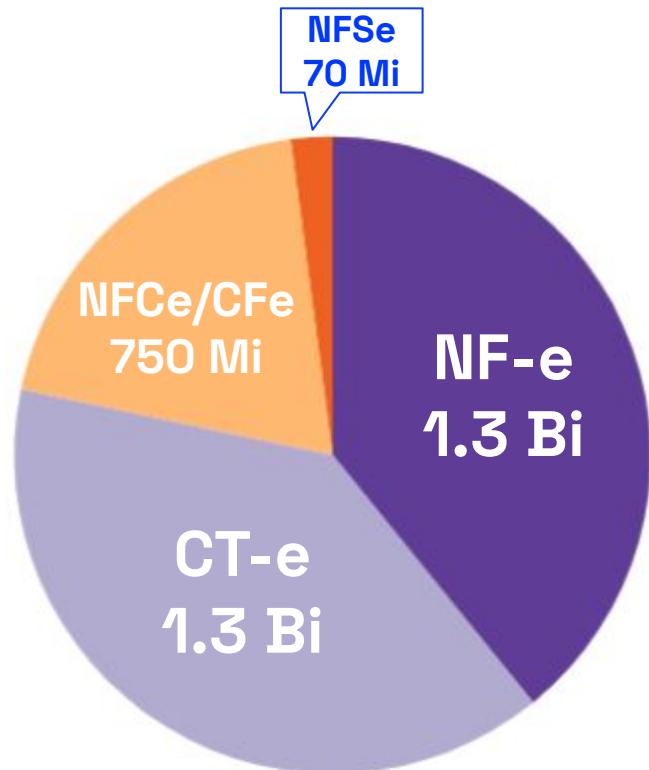
PANDORA

Lenovo

AVON



# Nossos números



**12%**

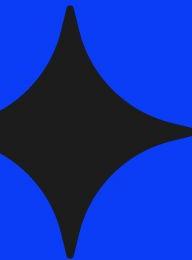
dos documentos fiscais emitidos  
até Ago/2023

**3.3 Bilhões**

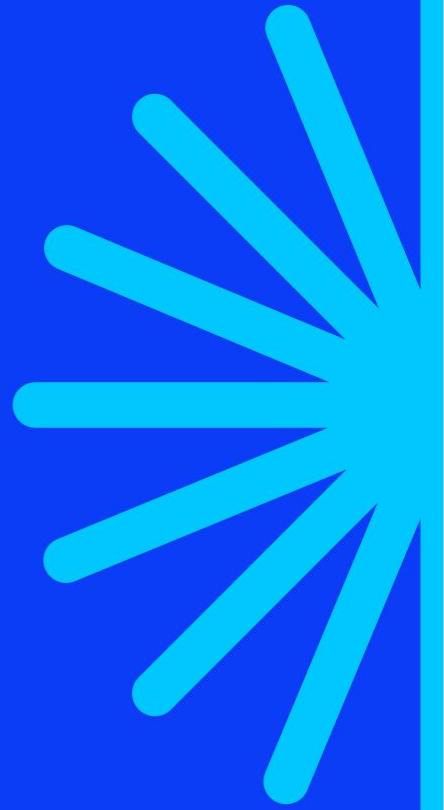
documentos fiscais  
2016 - Ago/2023

**12.1 Trilhões**

de Reais em valor dos documentos  
2016 - Ago/2023

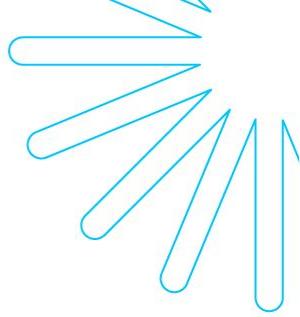


# Arquitetura de processamento





# Tecnologias que utilizamos



ElasticSearch - 3 clusters



Bigtable - 30 TB



BigQuery - 85TB



Kafka



Golang



Kubernetes



Dataflow

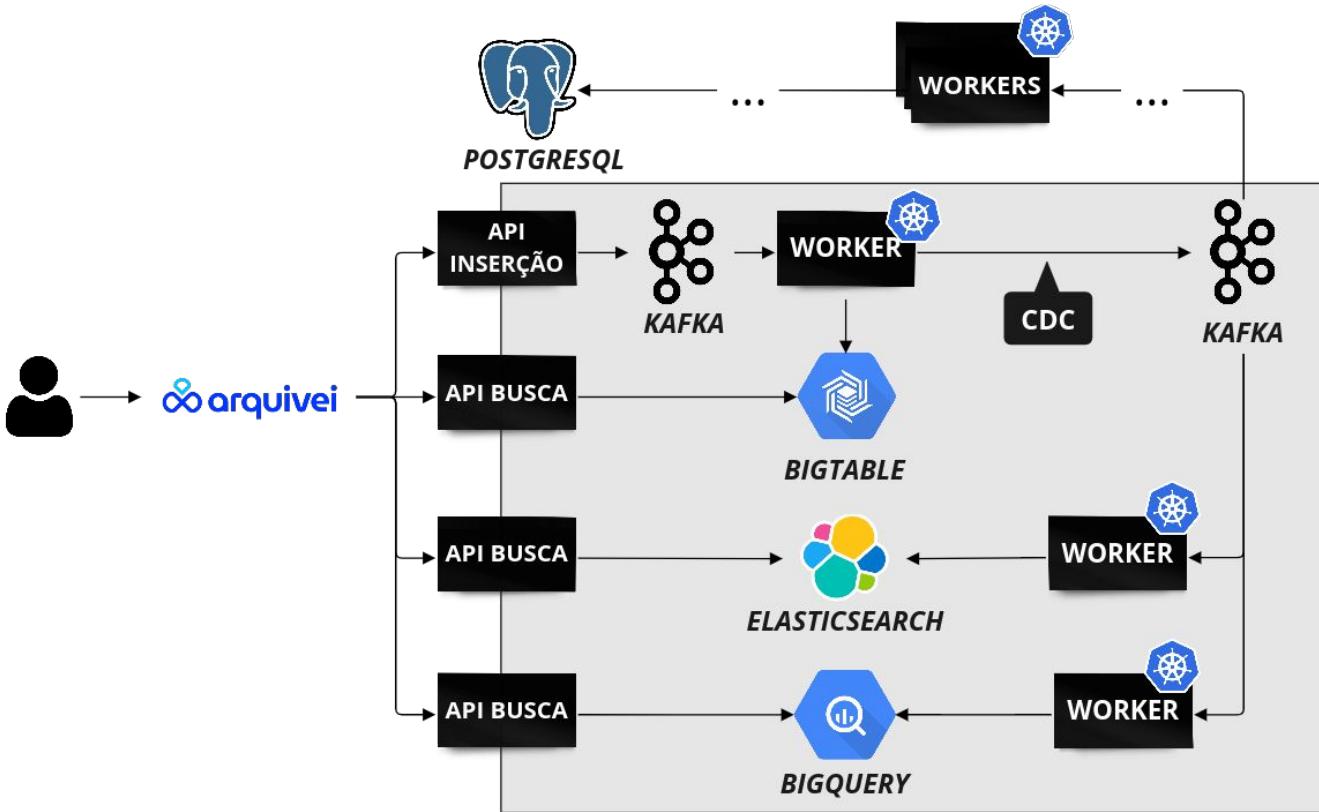


Apache Beam



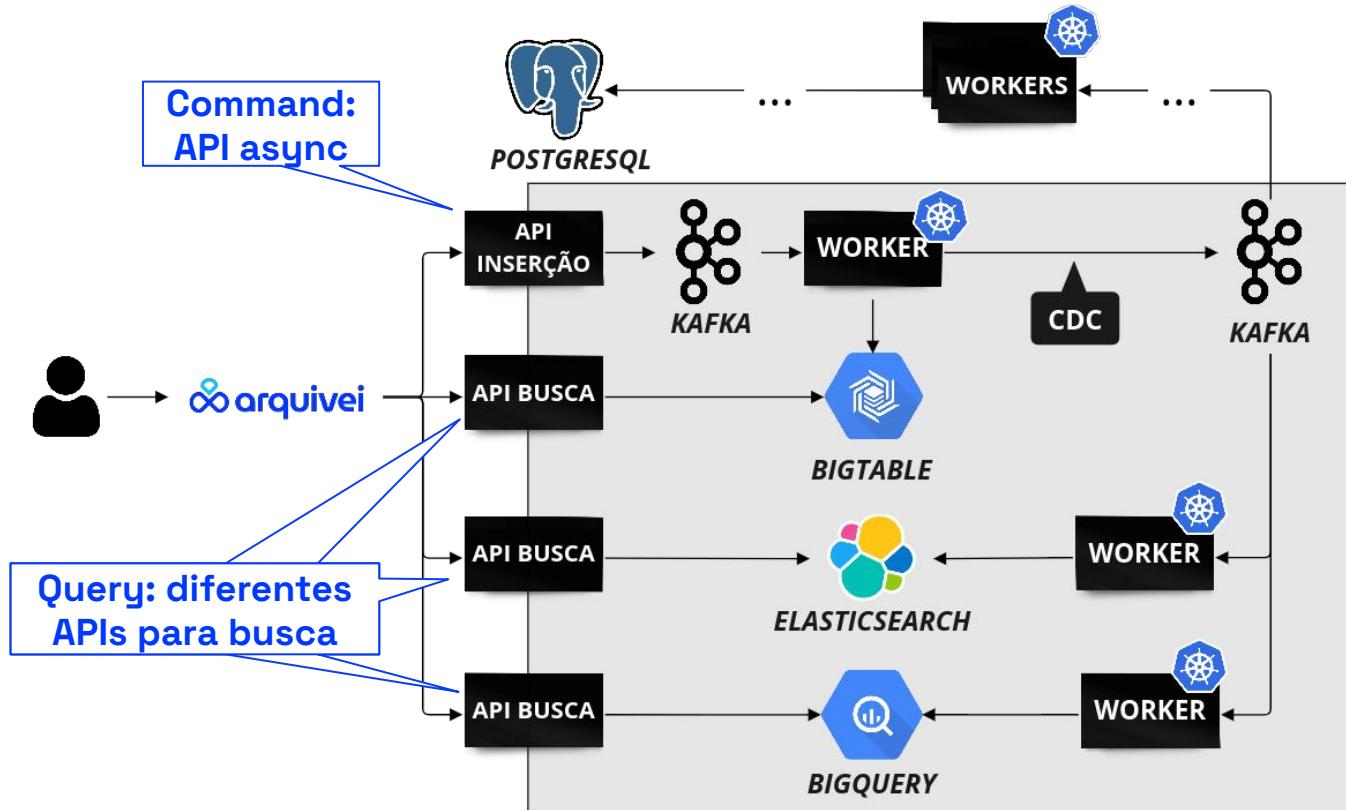


# Arquitetura atual





# Arquitetura atual



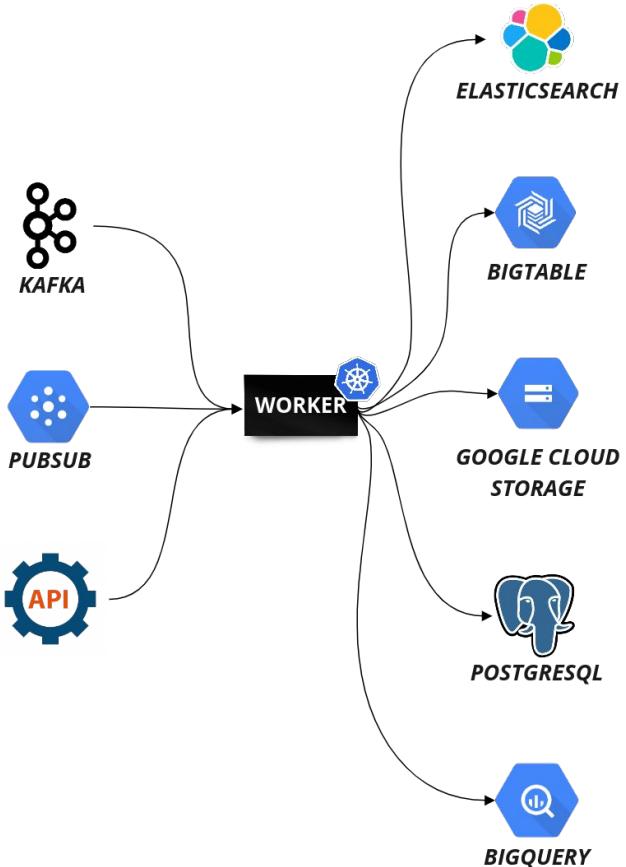
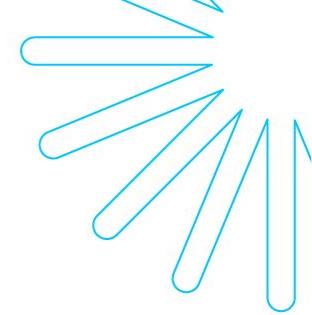


# Processamento de dados em Go



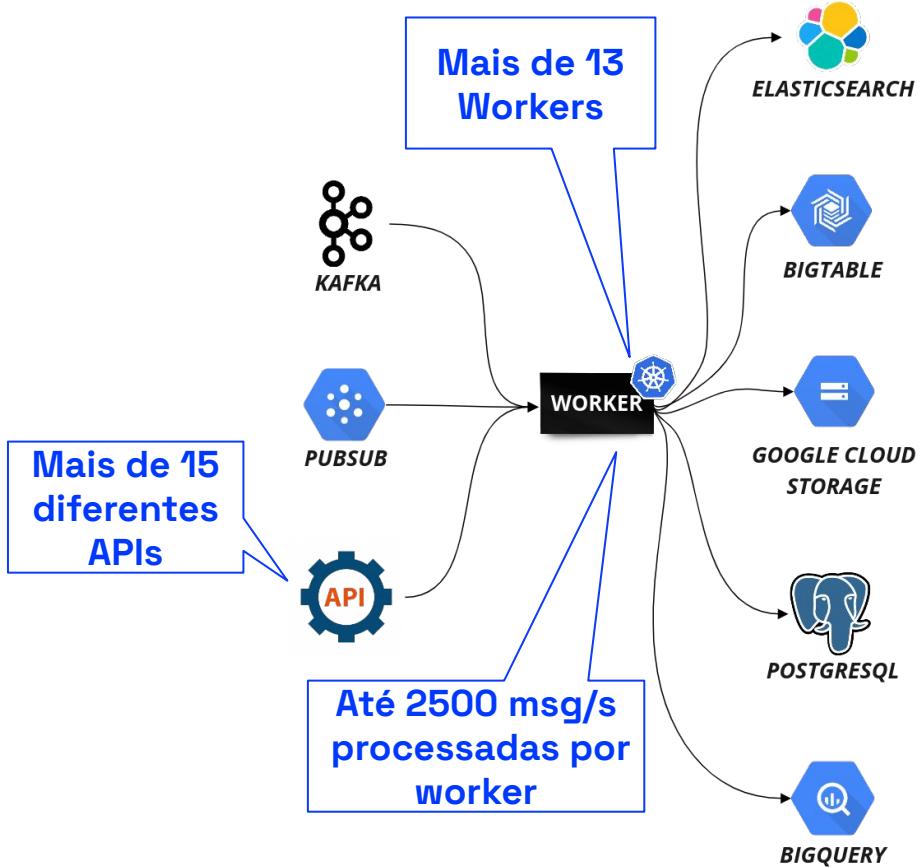


# Processamento em tempo real



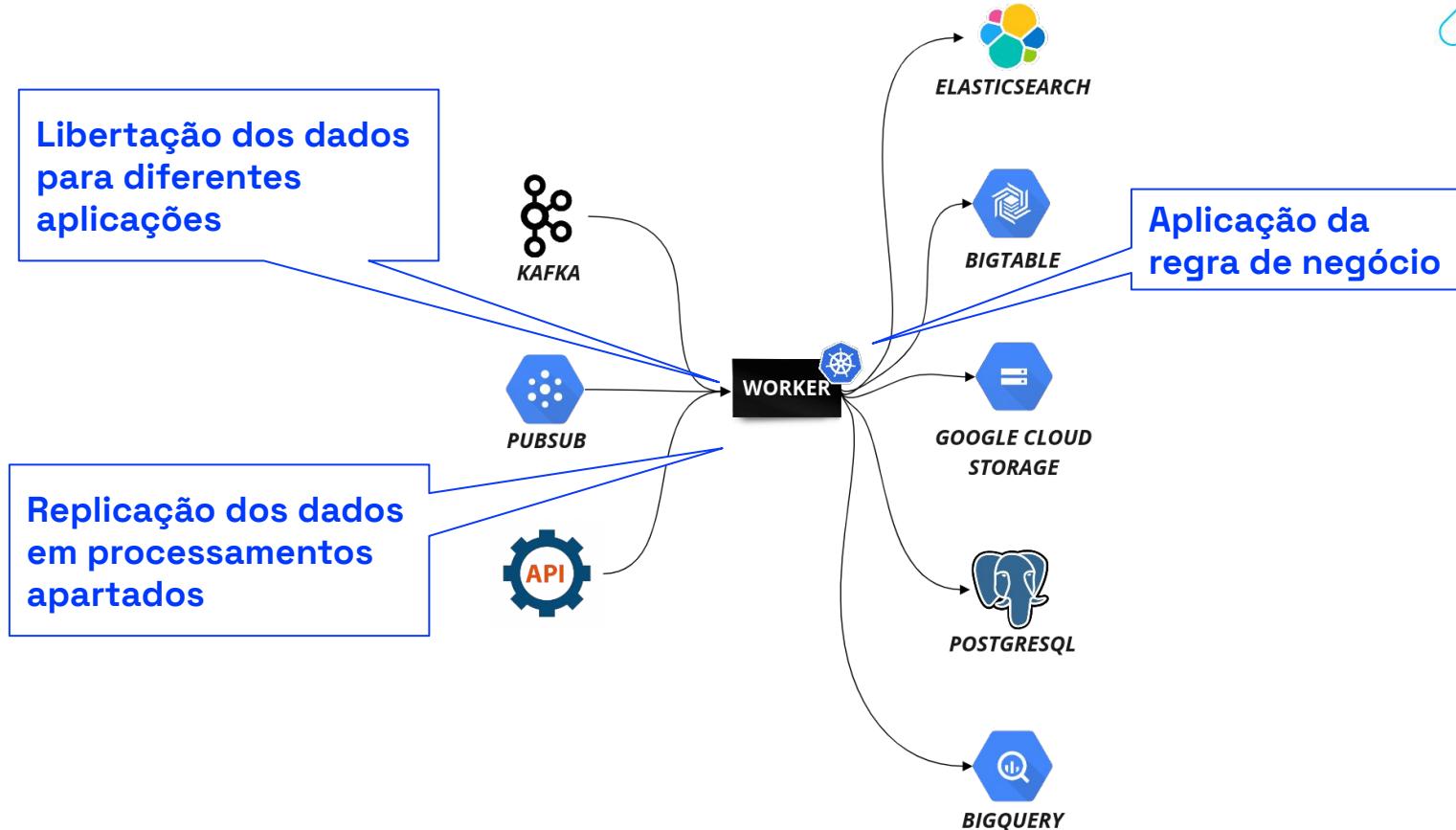


# Processamento em tempo real



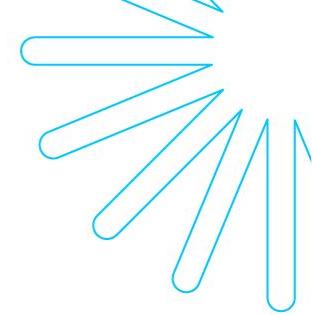


# Processamento em tempo real

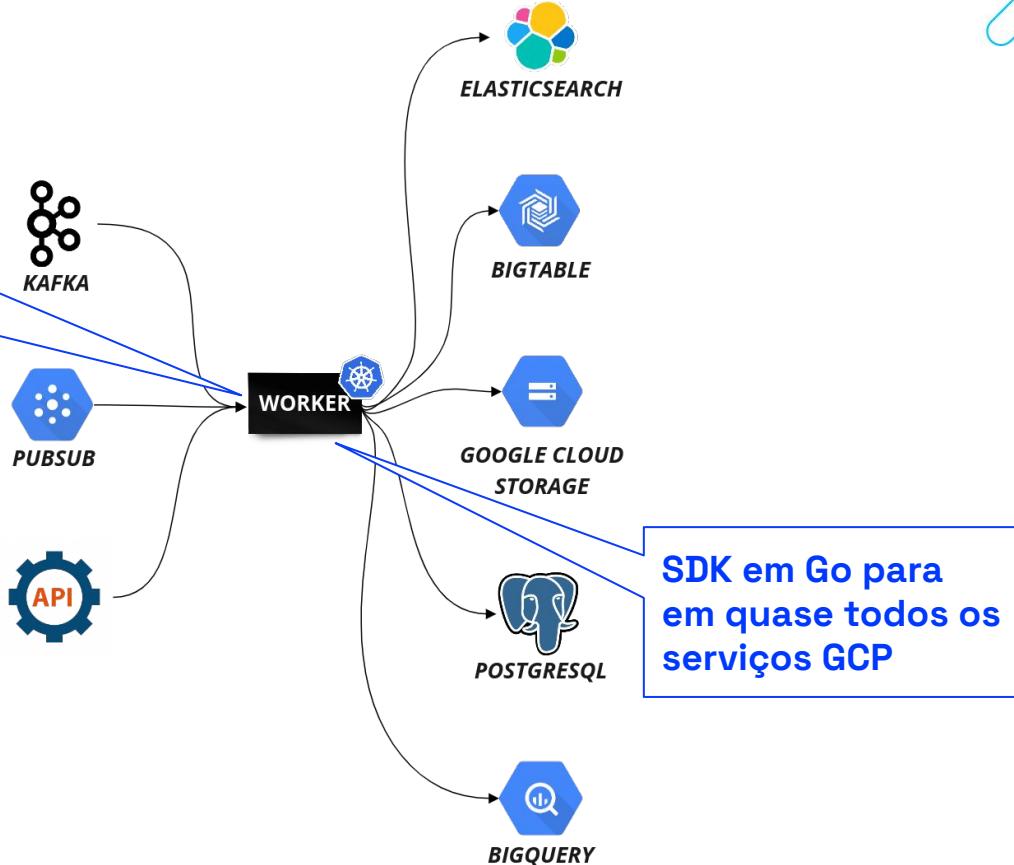




# Processamento em tempo real

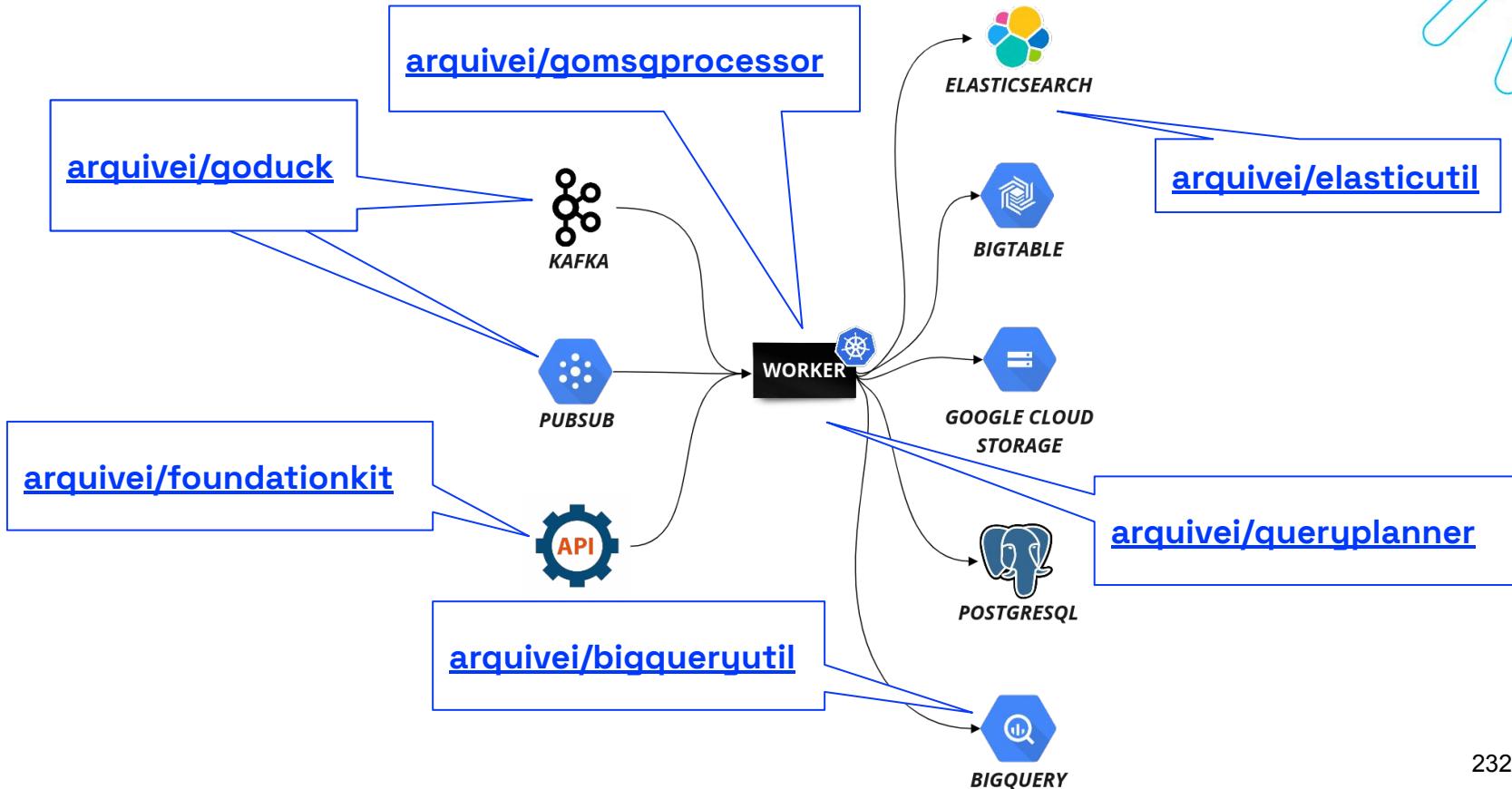
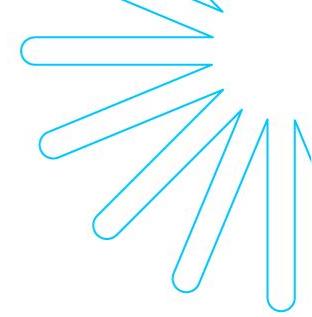


Libs consolidadas como  
IBM/sarama, go-kit/kit,  
gorilla/mux, hamba/avro,  
rs/zerolog, etc



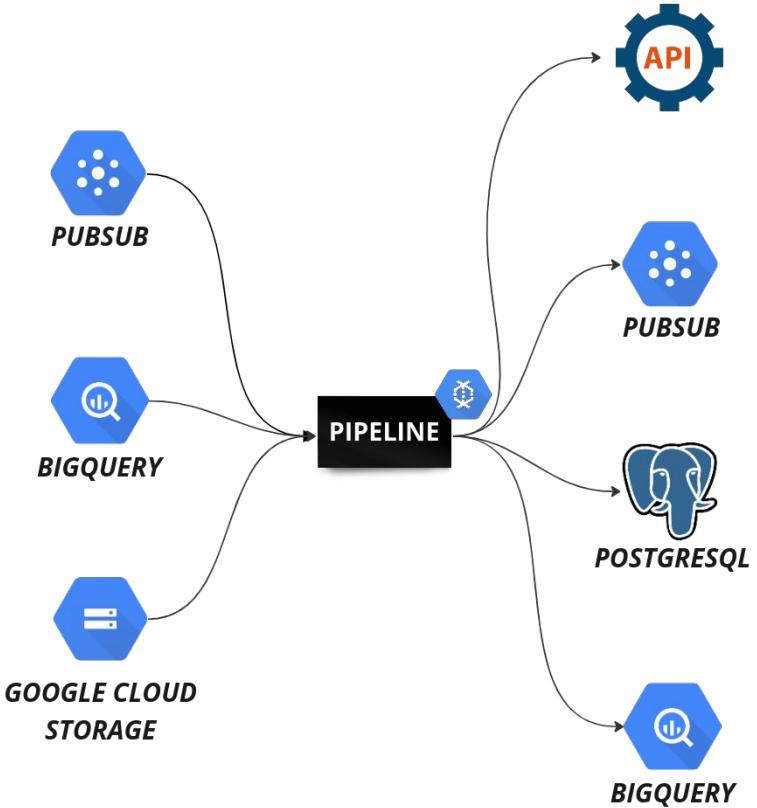
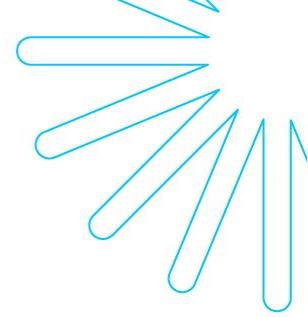


# Processamento em tempo real



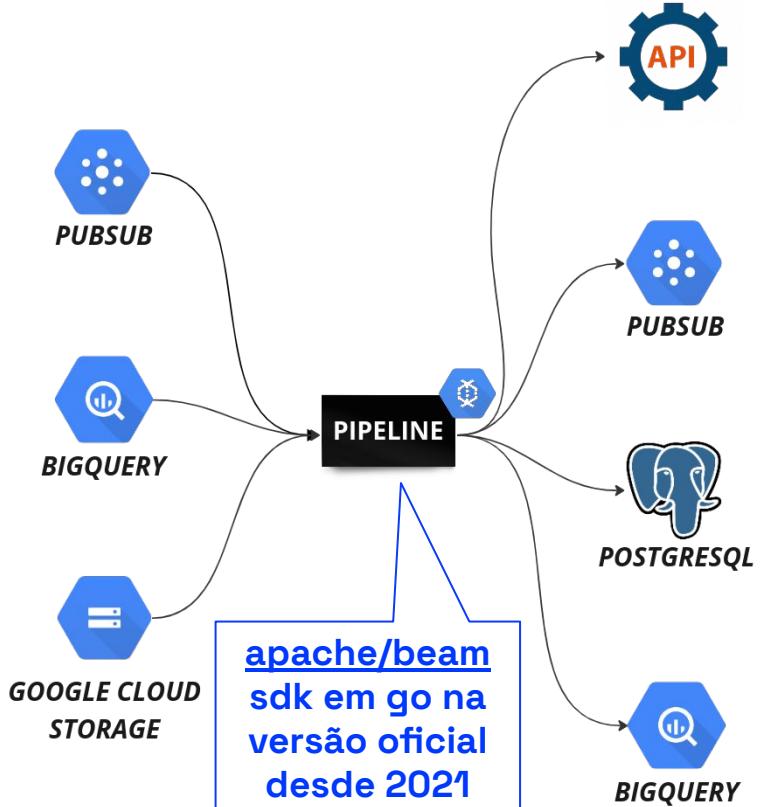
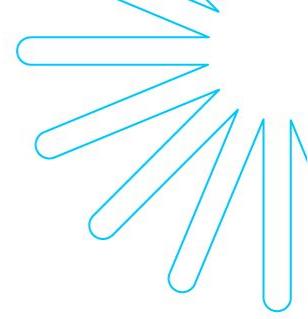


# Processamento em lote



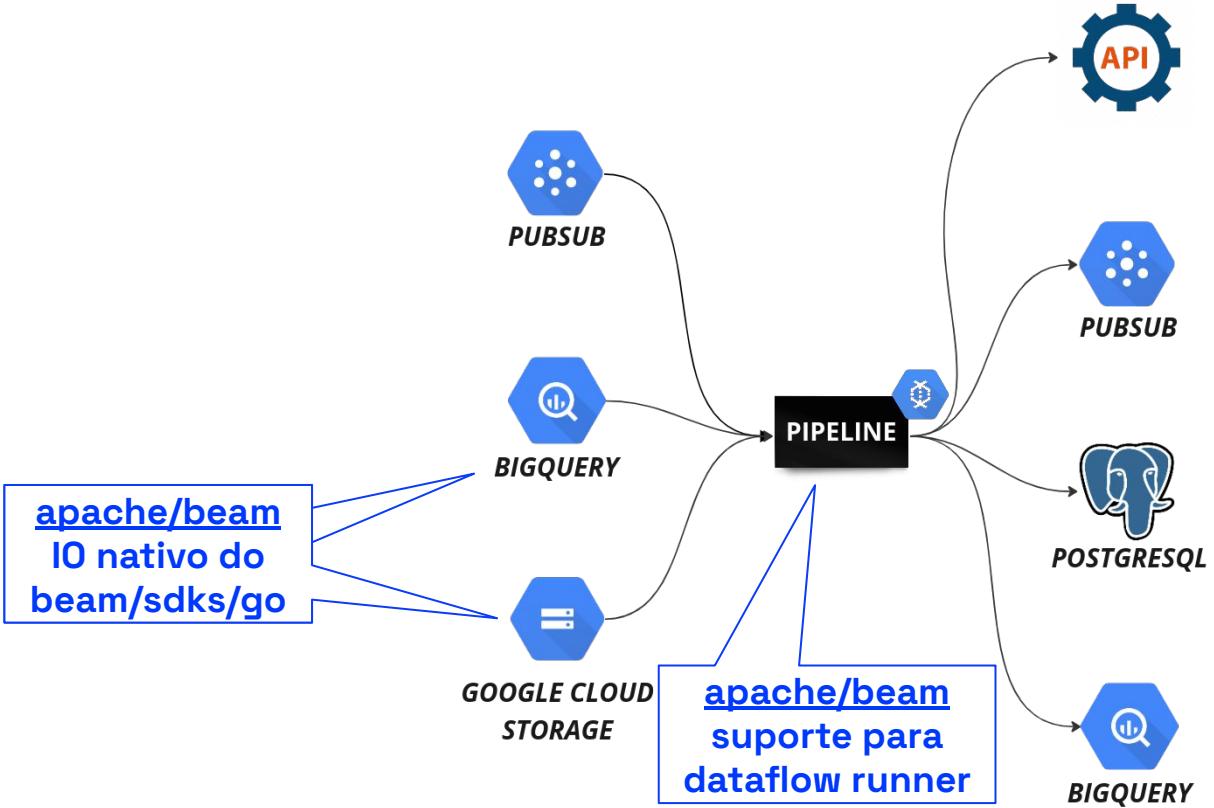
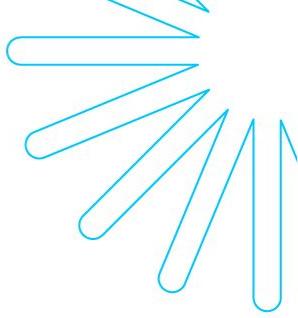


# Processamento em lote



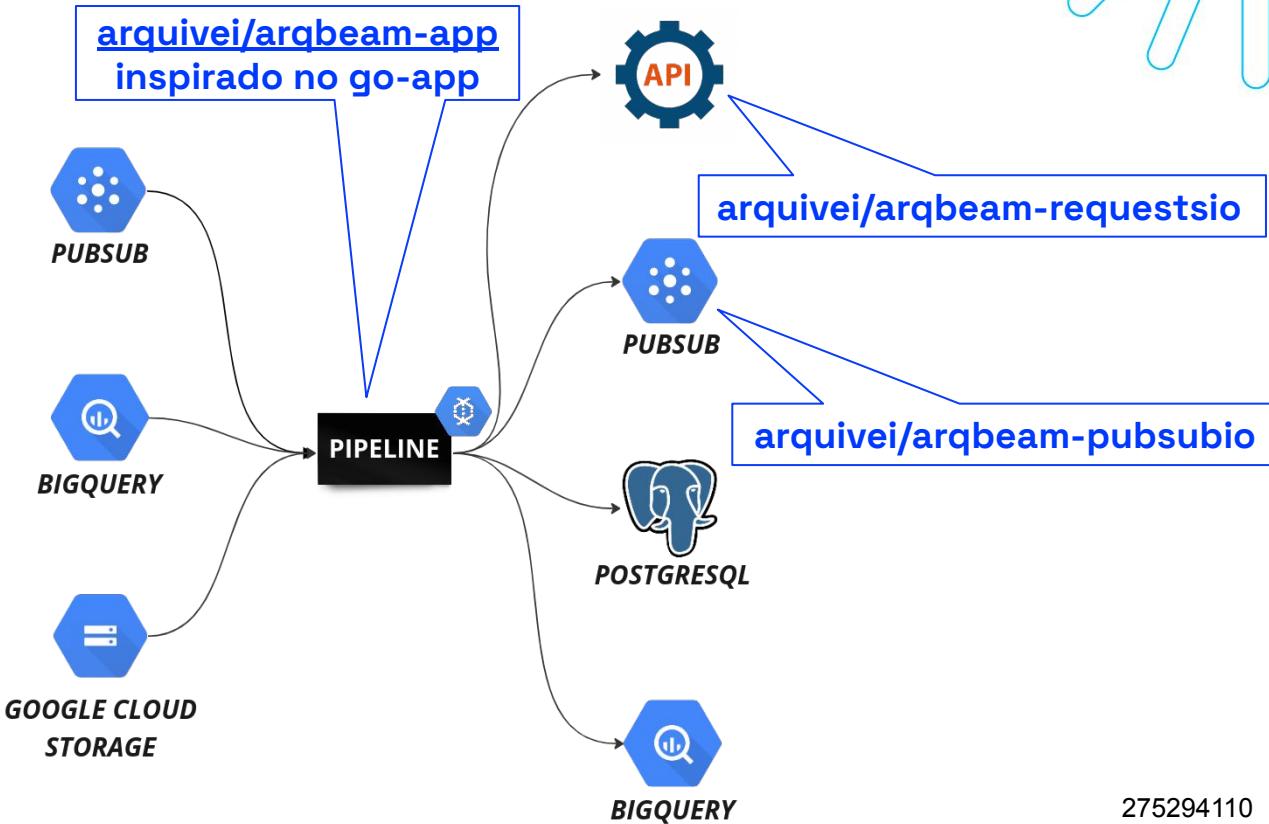
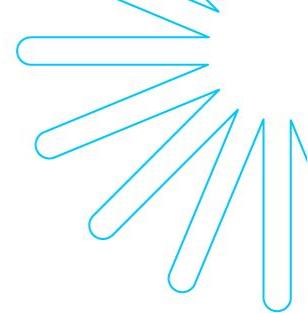


# Processamento em lote



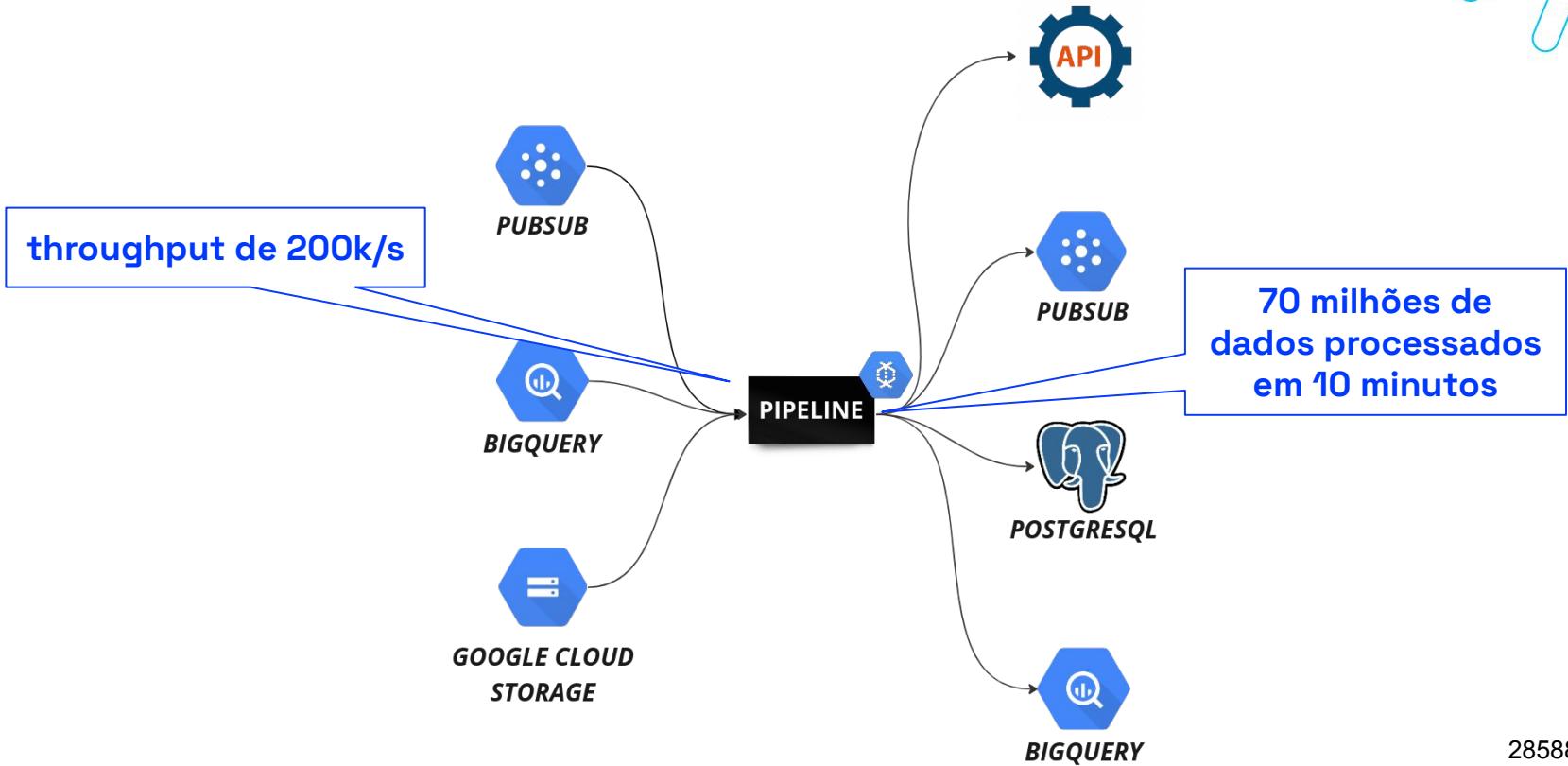
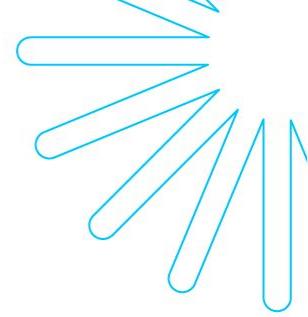


# Processamento em lote



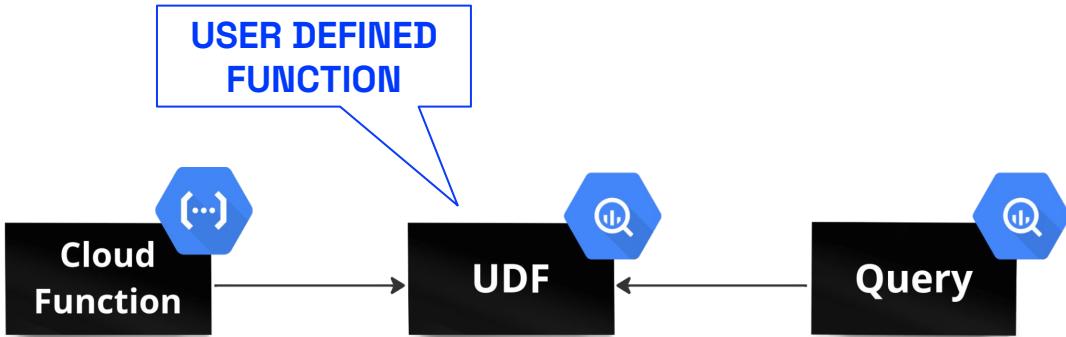
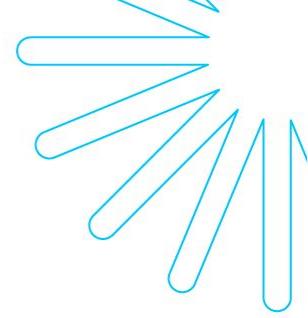


# Processamento em lote



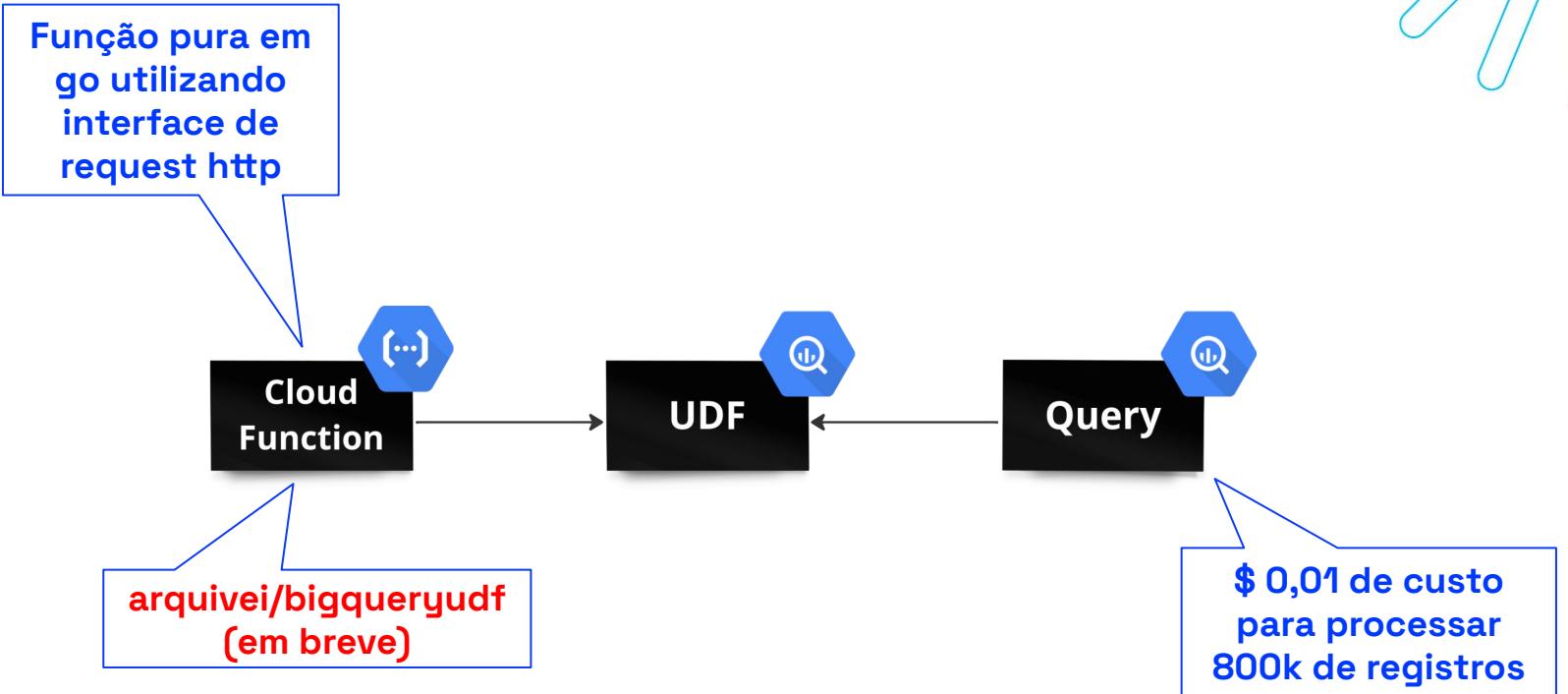
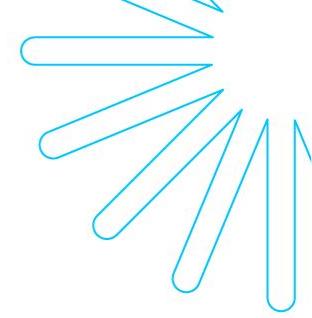


# Processamento como serviço



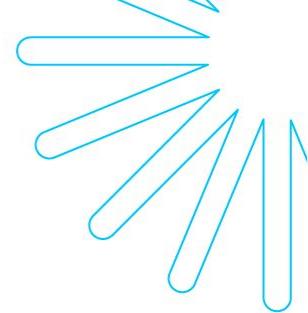


# Processamento como serviço





# Processamento como serviço

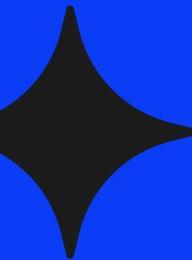


The screenshot shows a data processing interface with the following elements:

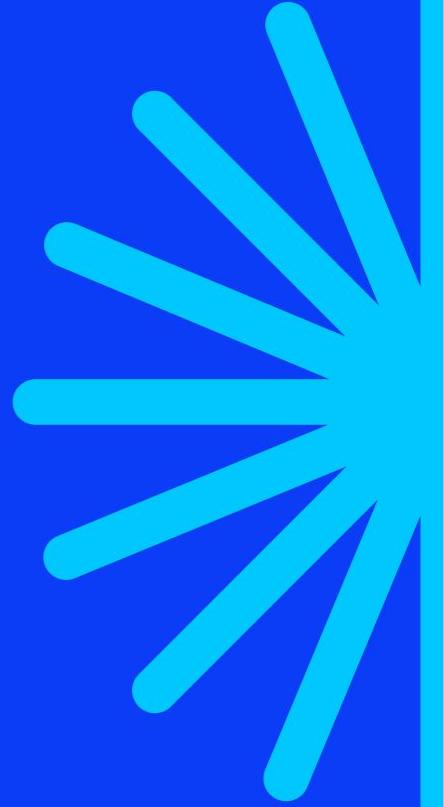
- Title bar:** Untitled 5
- Buttons:** RUN, SAVE, SHARE, SCHEDULE, MORE
- Code area:**

```
1 SELECT
2   `arquivei-platform-homolog.parser_functions.nfe_parser`(xml) AS parsed_xml
3 FROM
4   `arquivei-platform-homolog.parser_functions.test_nfe_xmbs`
```





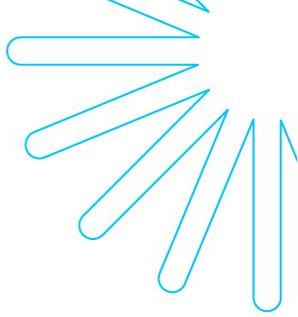
# O futuro da Engenharia de dados



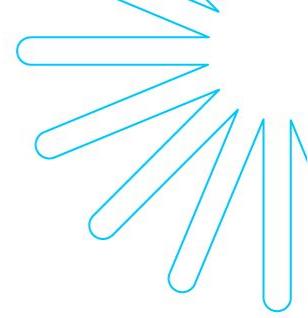
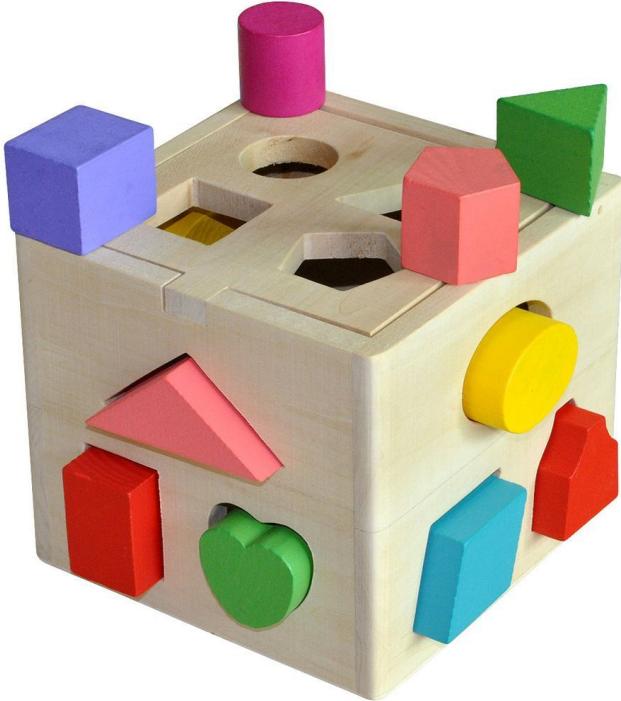


# Várias opções de tecnologias





Mais de  
**360.000.000** de  
mensagens  
em menos de  
**30 minutos**



# Porque Go é tão pouco usado no Processamento de dados?



# Referências



<https://github.com/arquivei/qoduck>

<https://github.com/arquivei/gomsgprocessor>

<https://github.com/arquivei/bigqueryutil>

<https://github.com/arquivei/queruplanner>

<https://github.com/arquivei/elasticutil>

<https://github.com/arquivei/foundationkit>

<https://github.com/arquivei/ko-app>

<https://github.com/arquivei/arqbeam-app>

<https://github.com/arquivei/arqbeam-pubsubio>

<https://github.com/arquivei/arqbeam-requestsio>

<https://www.linkedin.com/in/leoereis/>

<https://www.linkedin.com/in/rilder-almeida/>

<https://arquivei.com.br/>



**Leonardo Reis**  
*Engenheiro de dados  
em Go*



**Rilder Almeida**  
*Engenheiro de dados  
em Go*



# Go Além do Básico

O Futuro do Processamento de Dados

