# Caldo de Kafka

## (para Node)

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# Disclaimer

Not an actual javascript talk (sorry!)

# What is Kafka?

- Pub/Sub messaging rethought as a distributed commit log.

# The log[1] 🌲

[1] The Log: What every software engineer should know about real-time data's unifying abstraction http://bit.do/thelog

Append only ordered sequence of records

- Not unstructured error messages (i.e dmesg)
- Sequence of inputs (events) on a system
- Useful for distributed systems

# How to replicate my application state

1. On every request you write a log entry with the request itself and update your state
2. Replicas read from the log and applies the logged request to its current state

# Hey, you just (re)invented DB replication!

# Let me sidetrack you for a moment

## Real world problems

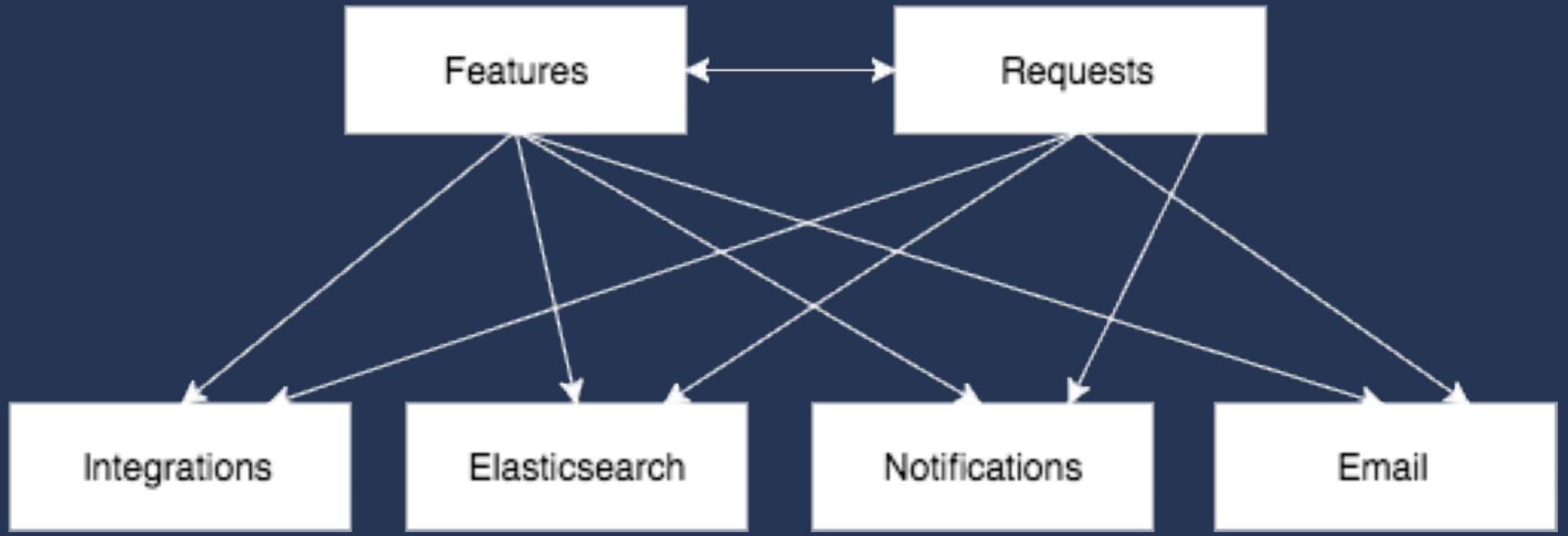
# Meet Wizeline

A user creates a Feature

- Now you need to send an email
- And a push notification
- And index it on Elasticsearch
- And also need to update the information on Jira
- And salesforce too!

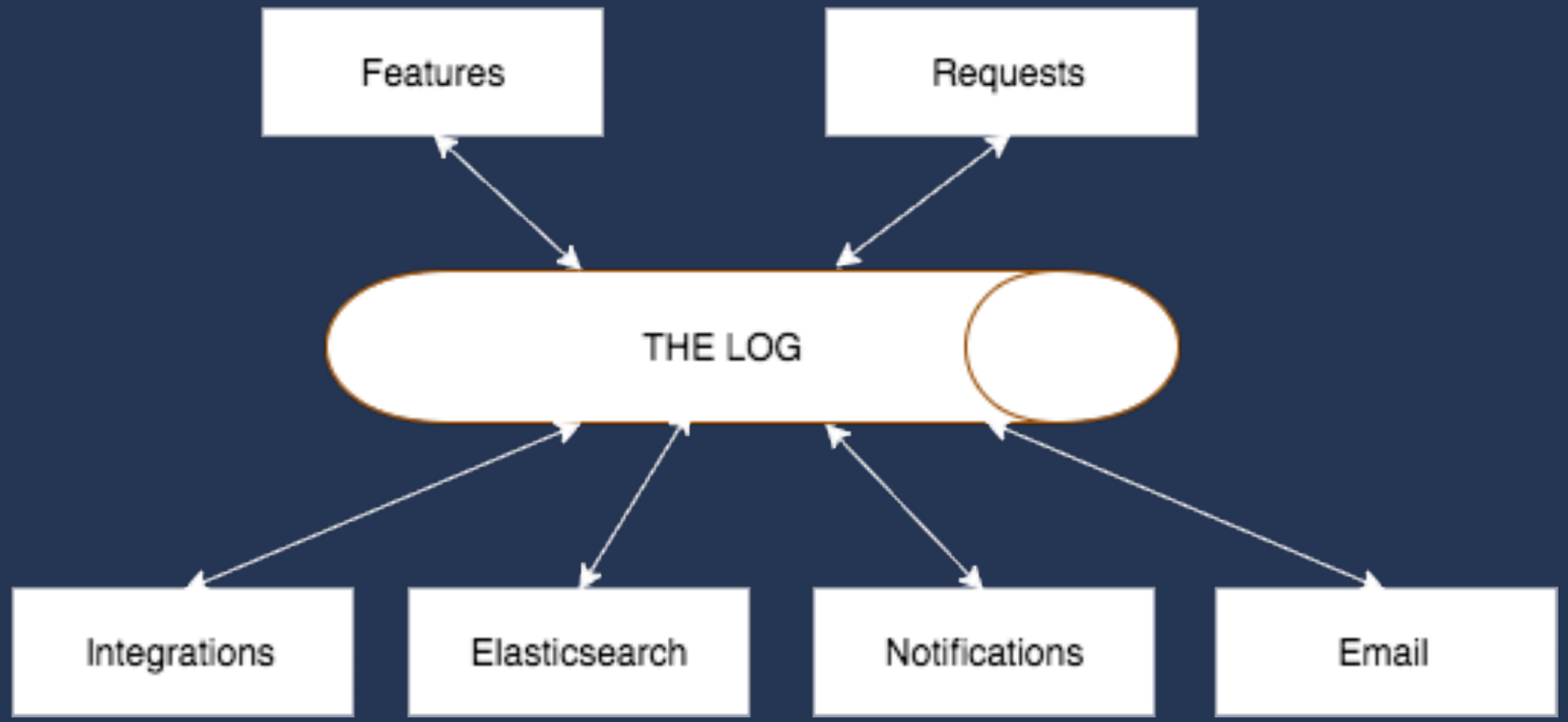
Notice a trend?

# $n$ systems $\rightarrow$ $n^2$ connections




Yup, that was beyond my mouse-drawing skills.

# Decoupling services through a centralized log

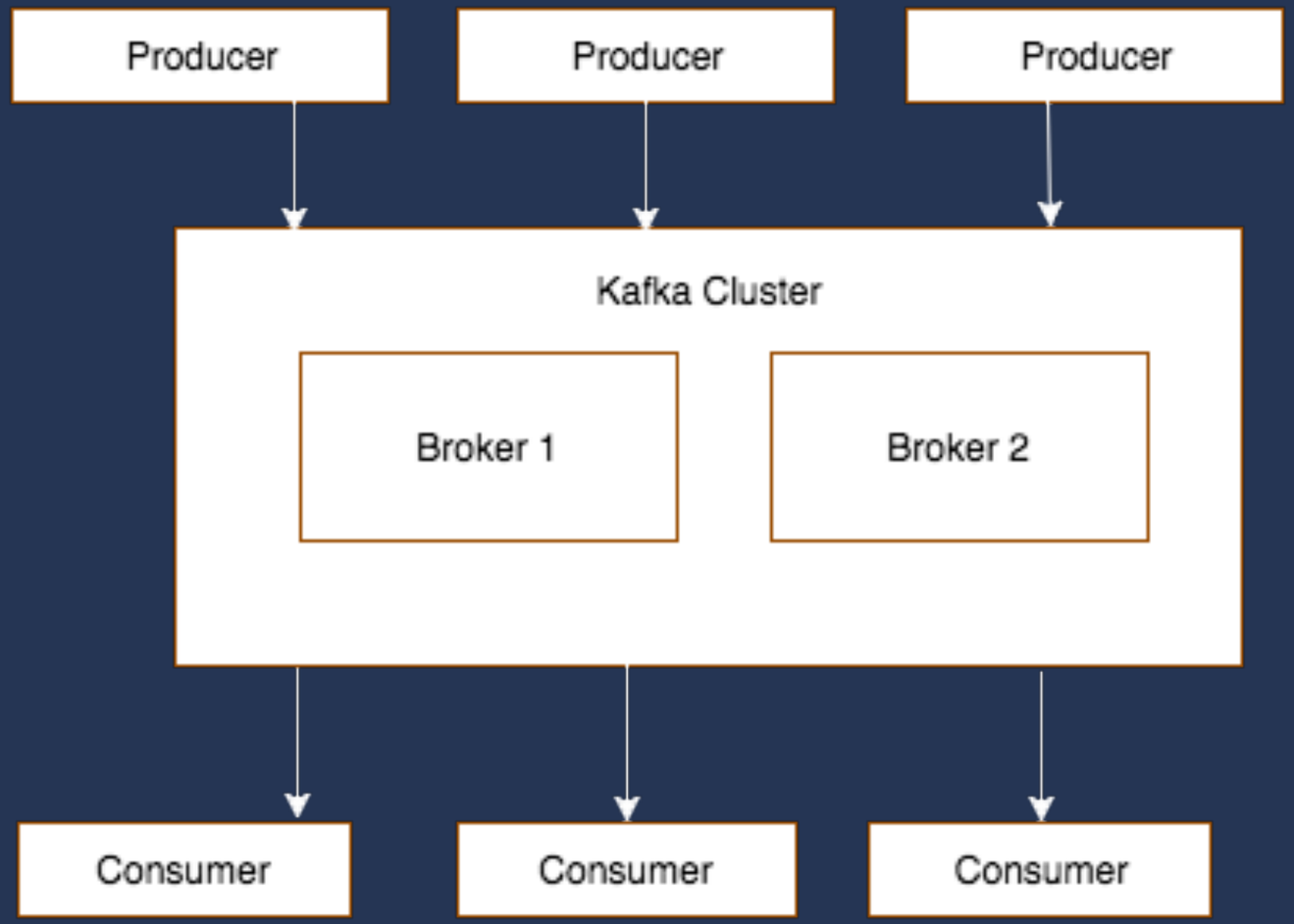


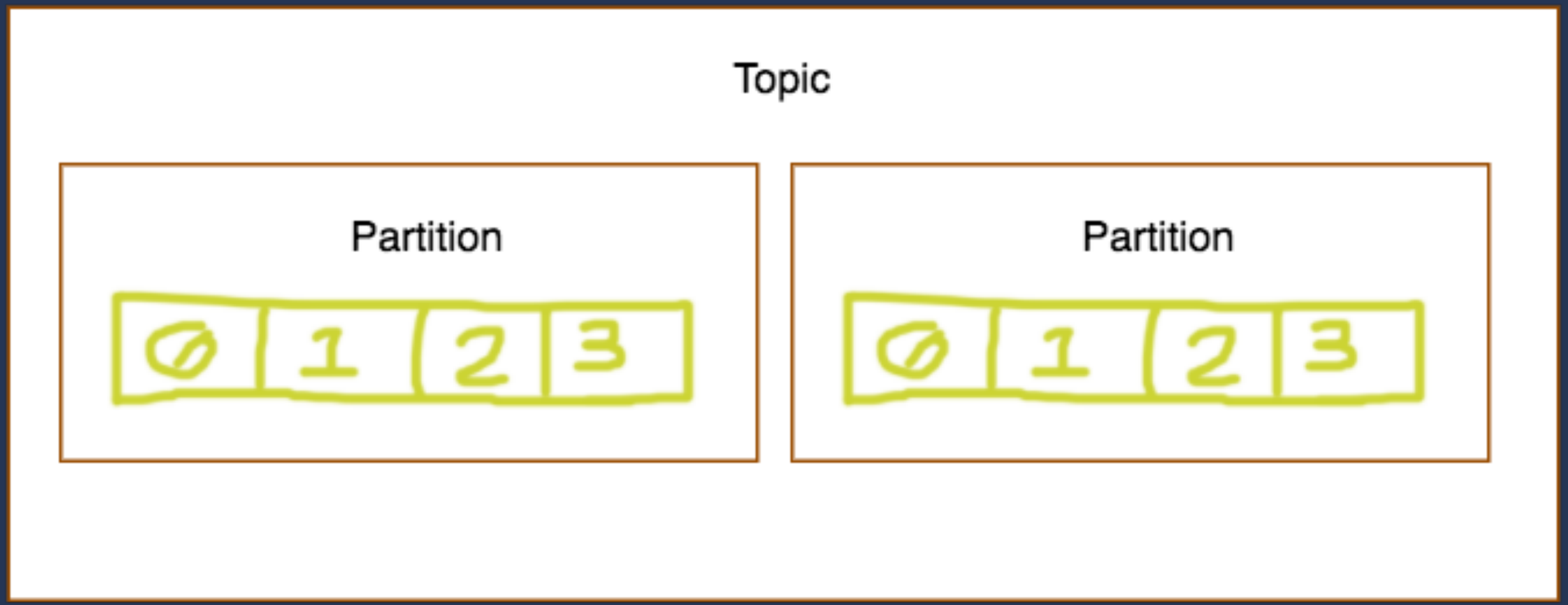

Still, too hard to draw

# Sorry, back to kafka

- Pub/Sub messaging rethought as a distributed commit log.
- Messages are divided on different partitioned feeds called *topics*
- Messages are **persistent**, they are not lost when consumed
- Having persistent messages provides a buffer between producers and consumers, if the consumer crashes the data will still be there when it comes back
- It also means you can rewind the log ;)

# Anatomy


Producer
Producer
Producer
Kafka Cluster
Broker 1
Broker 2
Consumer
Consumer
Consumer


Topic
Partition
0
1
2
3
Partition
0
1
2
3

# Consumers & Consumer groups

- Consumers keep track of their offset on the log
- Consumers commit the offset to a special kafka topic to recover in case of a crash
- This gives "at least 1" delivery but you can get "exactly 1"
- Consumer groups automatically distribute partitions among themselves, free scaling (both up and down) up to the number of partitions on the topic

# TODO: ADD DEMO

# Thank you

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