IRIRI

Leveraging Streaming Data to enable AI & ML

Lucian Dragos | Integration Specialist

IRORI

Agenda

- Who is Irori?
- Use cases
- Embracing Streaming Data
- Leveraging AI & ML with Streaming data

IRORI SERVICES

BENEFITS

Business Value

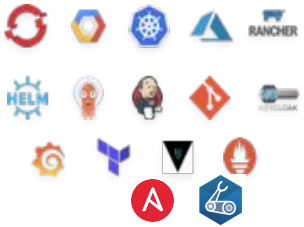
ABILITIES

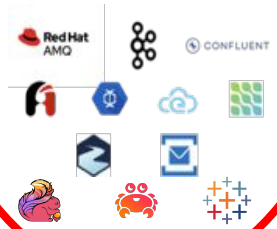
Platform

Feature Implementation

Streaming Data

TECHNOLOGY





Streaming Data Software

Business value focus
Adapting solutions and automating processes for competitive digital products.

Architecture and method skillset
Apply technology, tools and patterns to achieve architectural abilities, powering the organization and accelerating feature delivery.

Tech mastery
Technology and tooling for transforming IT to modern, scalable and flexible solutions. Development pipelines automate manual steps.

Use case 1
Payment fraud prevention

Goal

- ➔ Detect fraudulent behaviour
- ➔ Prevent payments as they are happening

Challenge:

- ➔ Process data in (close to) real time

Use case 2

Optimize offered loan interest rate

Goal

- ➔ Maximize chance of winning the customer...
- ➔ ... but without offering too low interest

Challenge:

- ➔ Aggregate data from multiple source

Use case 3
Reducing store waste

Goal

- ➔ Use real-time data from store
- ➔ Reduce wasted goods by adjusting prices, orders etc.

Challenge:

- ➔ Ingest different types of data

Streaming Data

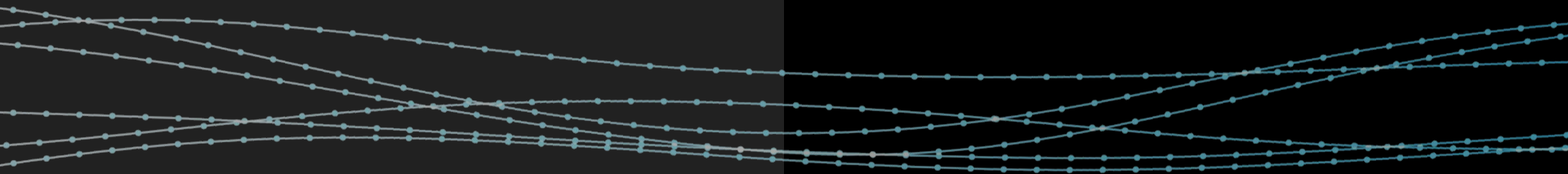
“Acquiring and processing an infinite stream of events in order to refine them and act upon them in real time”

Event driven use cases & real time apps

- ➔ Business processes
- ➔ External events
- ➔ Metrics
- ➔ Clickstreams

Trends:

- ➔ Applications get more connected
- ➔ Move towards real time processing
- ➔ Value of data decreases with time



Why Kafka?

Kafka is a distributed event streaming platform designed to handle real-time data feeds.

“Just one of many message brokers out there”

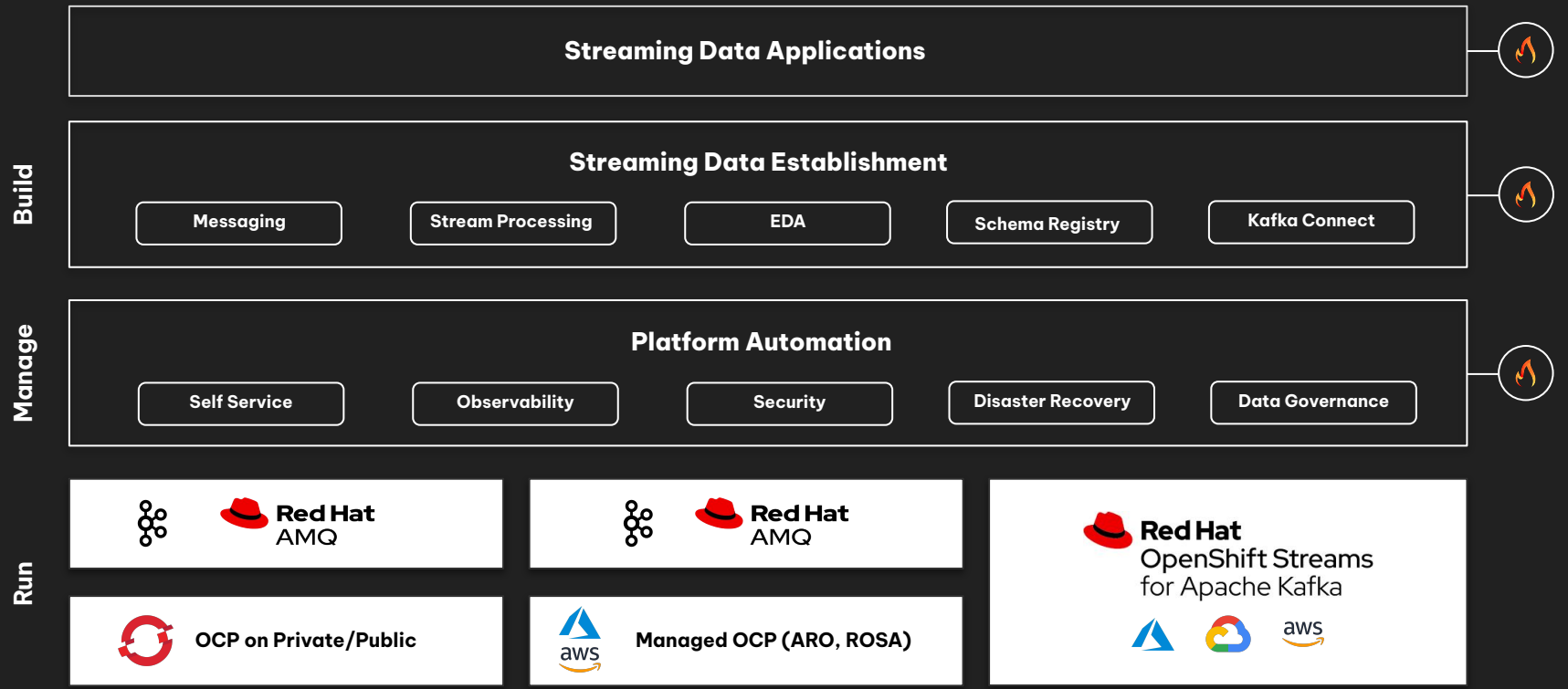
“Not the fastest / hardest / Scooter alternative”

“It’s old - built with spinning disks in mind…”

But…

- ➔ It’s proven
- ➔ Highly performant, scales well
- ➔ Have a rich ecosystem
- ➔ Handles unlimited retention
- ➔ OSS - Not tied to any cloud platform

Irori Data Platform



Manage and Build layer needs are similar regardless of Run-platform in our experience.

Engage with Streaming Data

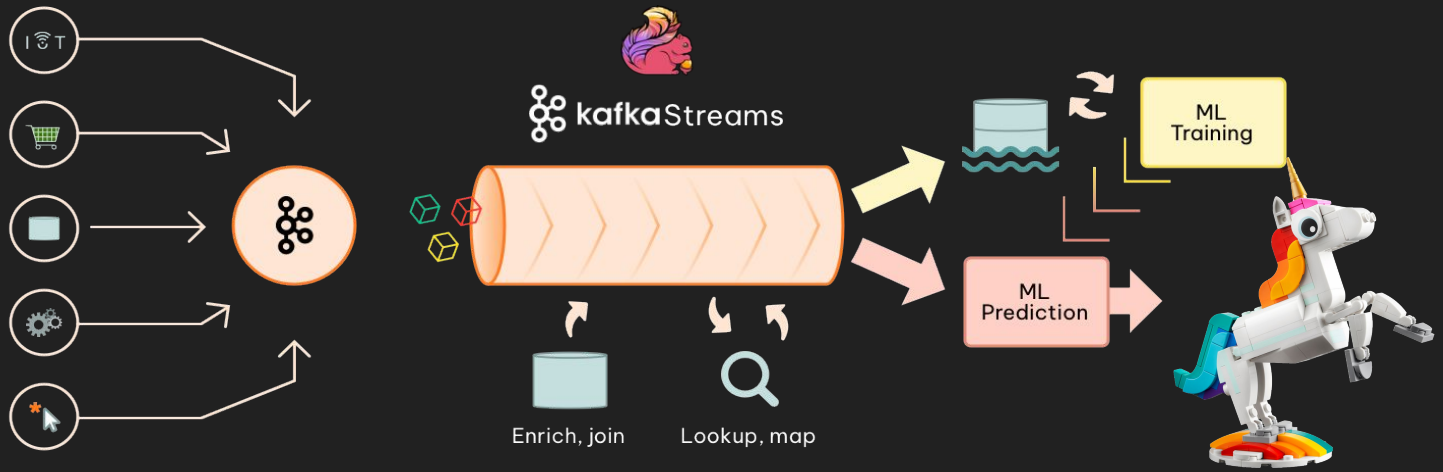
Ingestion

- ➔ Collecting raw data
- ➔ Treat as events
- ➔ Use Kafka ecosystem to “catch em all”

Stream processing

- ➔ Refine data into valuable information
- ➔ Process events as they arrive
- ➔ Kafka Streams / Apache Flink
- ➔ Enrichment, lookup, joins, mapping etc

Attaching the



Training

- ➔ Adapt stream for ML (normalization etc)
- ➔ Collect events in DB for training iterations
- ➔ Don’t reuse the DB, reuse the Stream Process!
- ➔ Use production data (depersonalize if needed)

Predictions

- ➔ Same Stream Process is used
- ➔ Predictions in (near) real time
- ➔ Simple to bench multiple models in parallel
- ➔ Similar setup for LLMs

Use case 1
Payment fraud prevention

Goal

- ➔ Detect fraudulent behaviour
- ➔ Prevent payments as they are happening

Stream process:

- ➔ Enrich with merchant type, amount, location
- ➔ Attach previous payments: amount, distance
- ➔ Perform feature normalization

Use case 2

Optimize offered loan interest rate

Goal

- ➔ Maximize chance of winning the customer...
- ➔ ... but without offering too low interest

Stream process:

- ➔ Join multiple sources: application form data, credit score, previous engagements, transaction history and more
- ➔ Mapping to interesting features
- ➔ Response from AI model to application process

Use case 3
Reducing store waste

Goal

- ➔ Use current store data
- ➔ Reduce wasted goods

Stream process:

- ➔ Gather & transform data in specific format
- ➔ Load large historical data to train models
- ➔ Handle faulty data & other errors

Thank you!

Lucian Dragos

lucian.dragos@irori.se