CAMUNDA CON 2025 AMSTERDAM

One exporter to rule them all

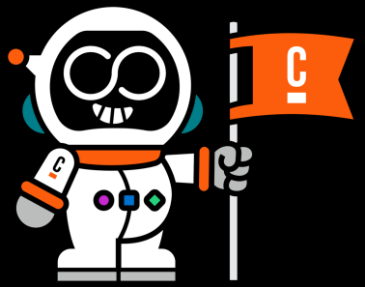
Nicolas Pepin-Perreault, Engineering Manager

Christopher Kujawa, Principal Software Engineer

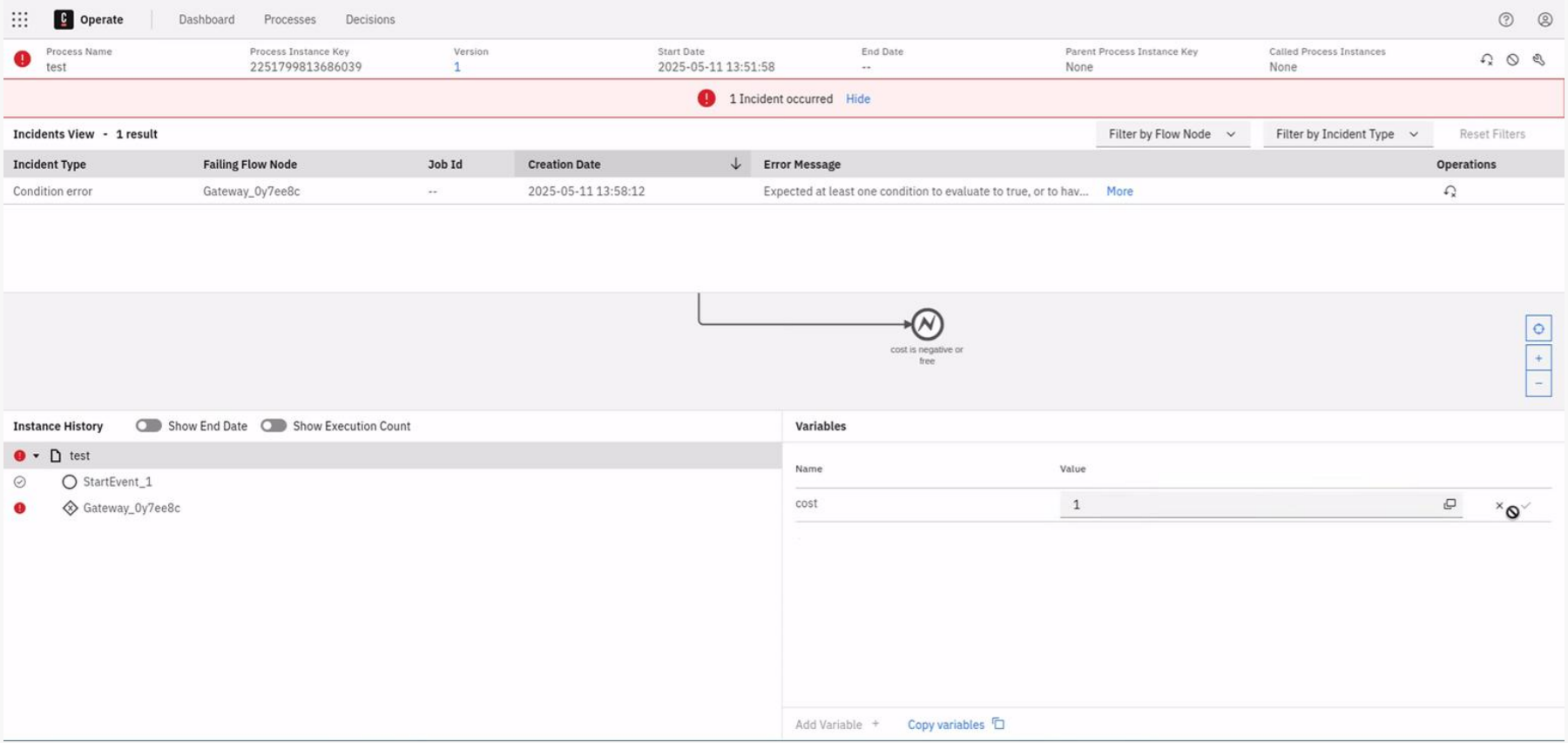
Introductions

Christopher Kujawa
Principal Software Engineer
Camunda

Nicolas Pepin-Perreault
Engineering Manager
Camunda



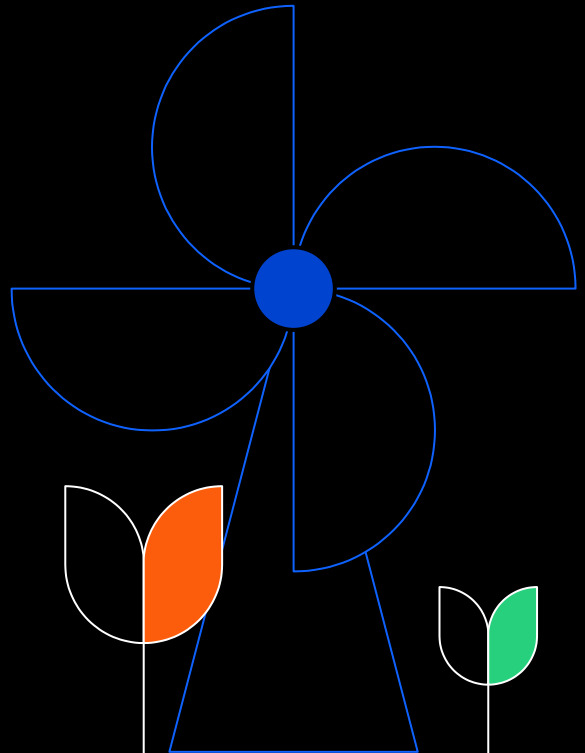
Operational delay



One exporter to rule them all

Photo by D A V I D S O N L U N A on Unsplash

Agenda

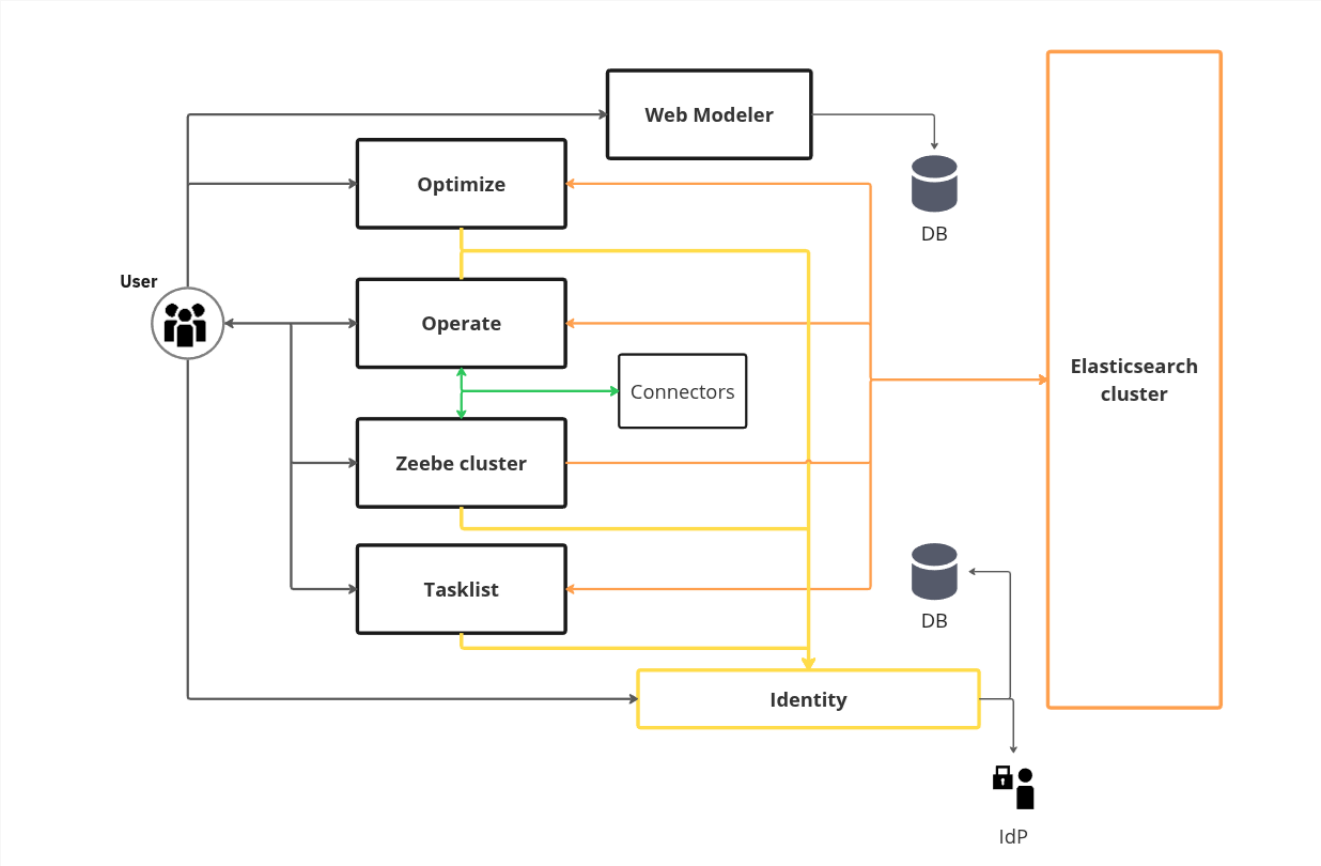


- Basics
  - Camunda 8 overview
  - Data flow in orchestration Cluster
- Challenge(s) - solving cycle
  - Identify challenges with our current architecture
  - Make a plan to overcome those challenges
  - Implement the solution
  - Evaluate our solution
- What's next

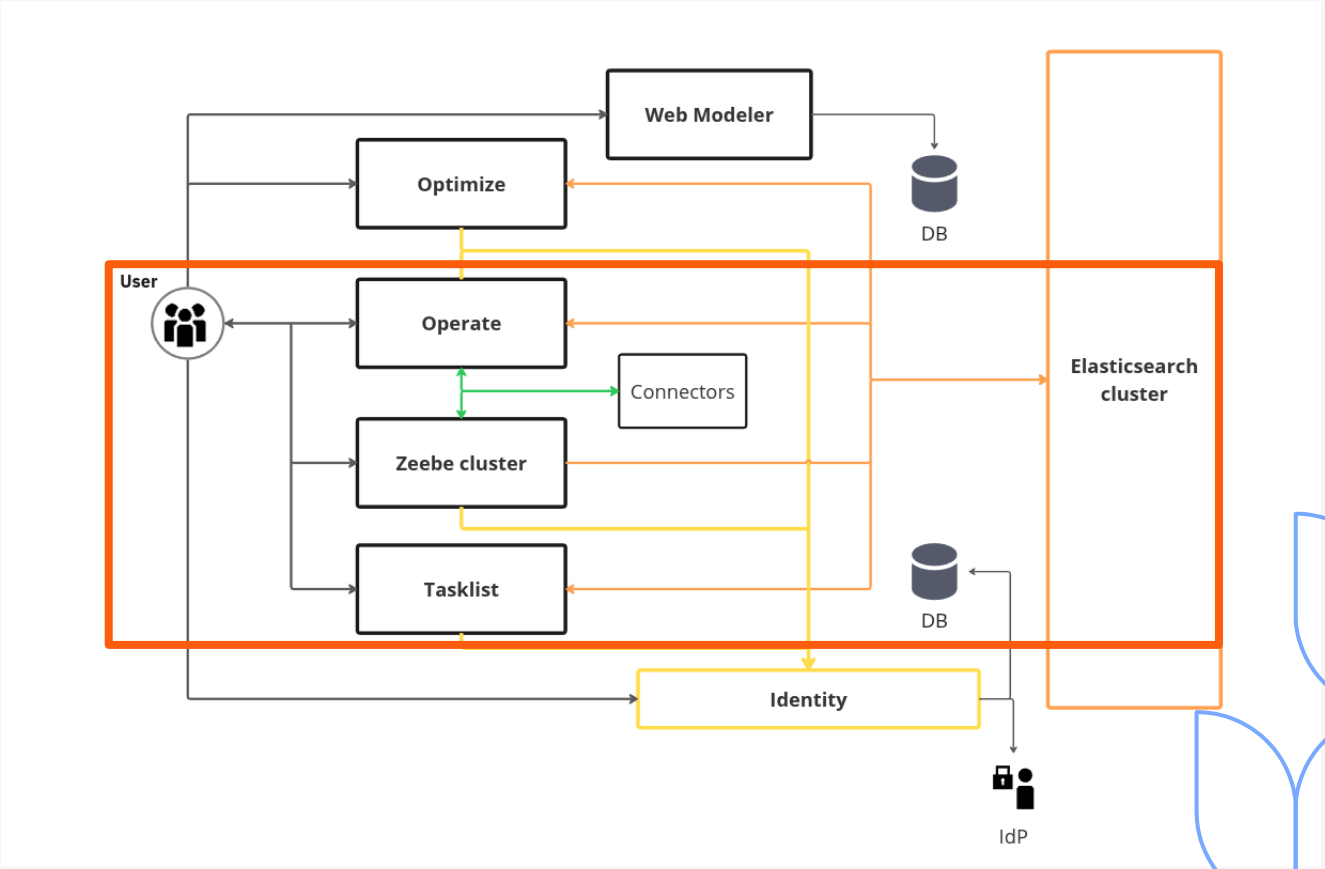
CAMUNDA CON 2025 AMSTERDAM

Camunda 8 Overview

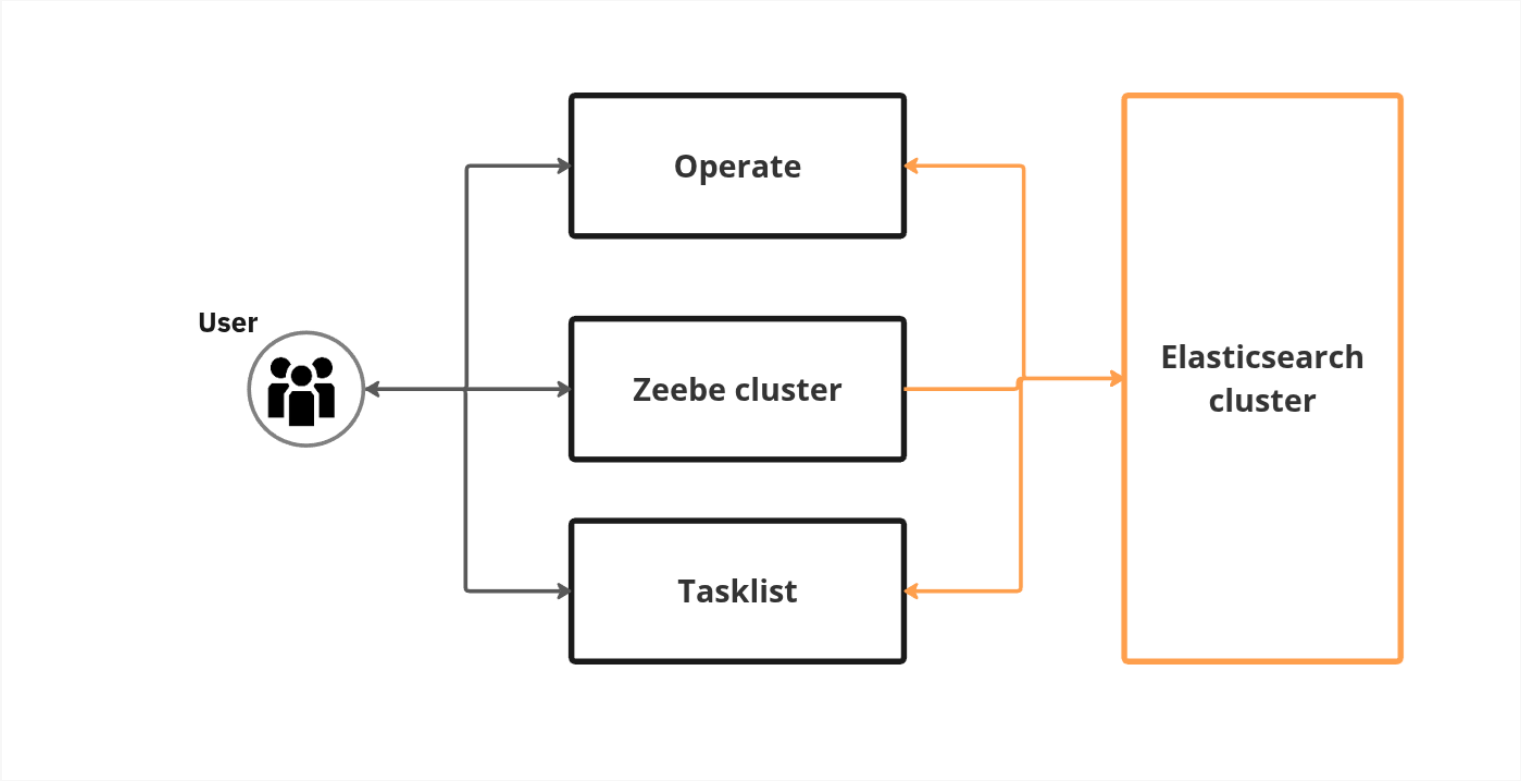
Camunda 8


Web Modeler
Optimize
DB
User
Operate
Connectors
Elasticsearch cluster
Zeebe cluster
Tasklist
DB
Identity
IdP

Camunda 8


Web Modeler
Optimize
DB
User
Operate
Connectors
Elasticsearch cluster
Zeebe cluster
Tasklist
DB
Identity
IdP

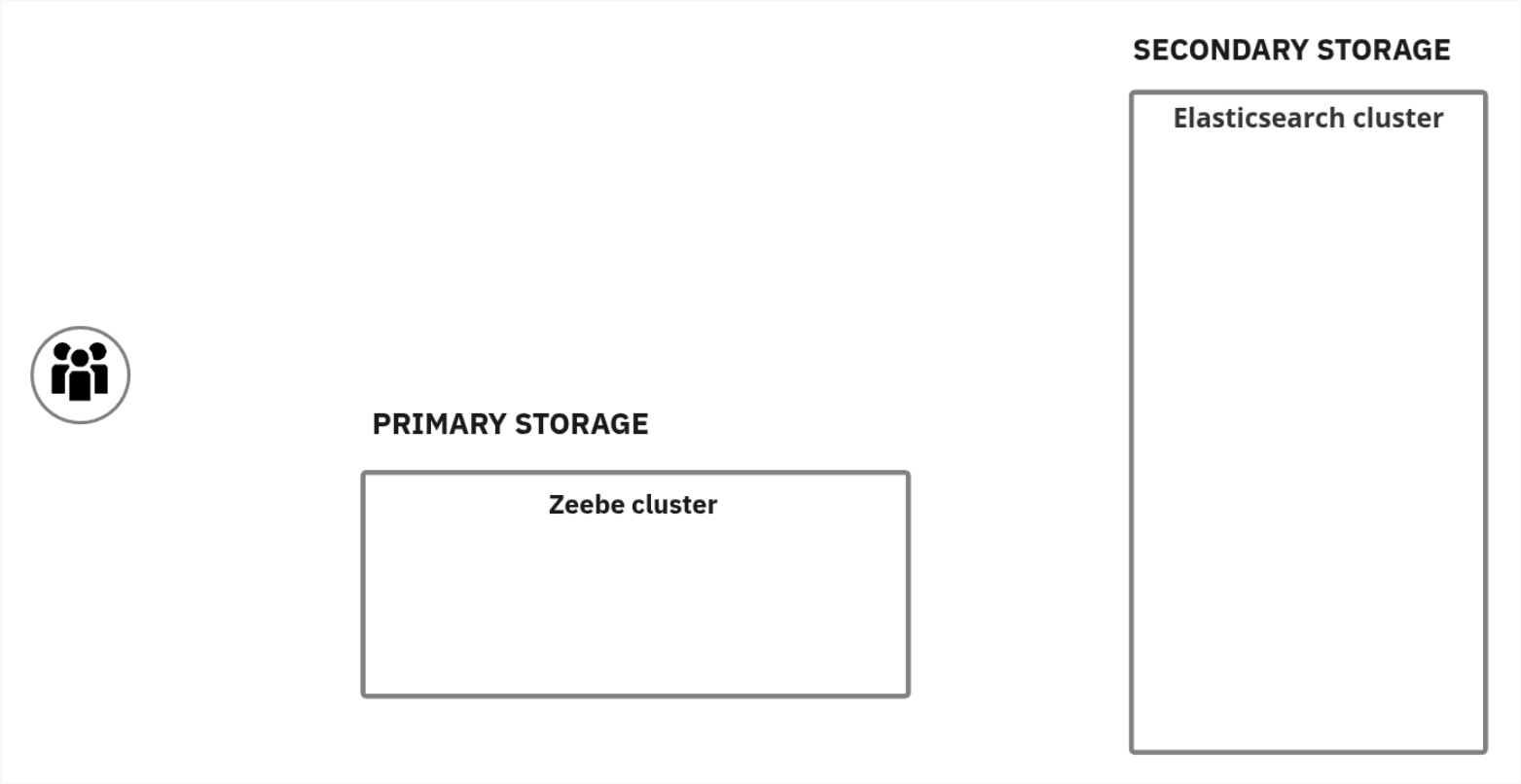
Orchestration Cluster



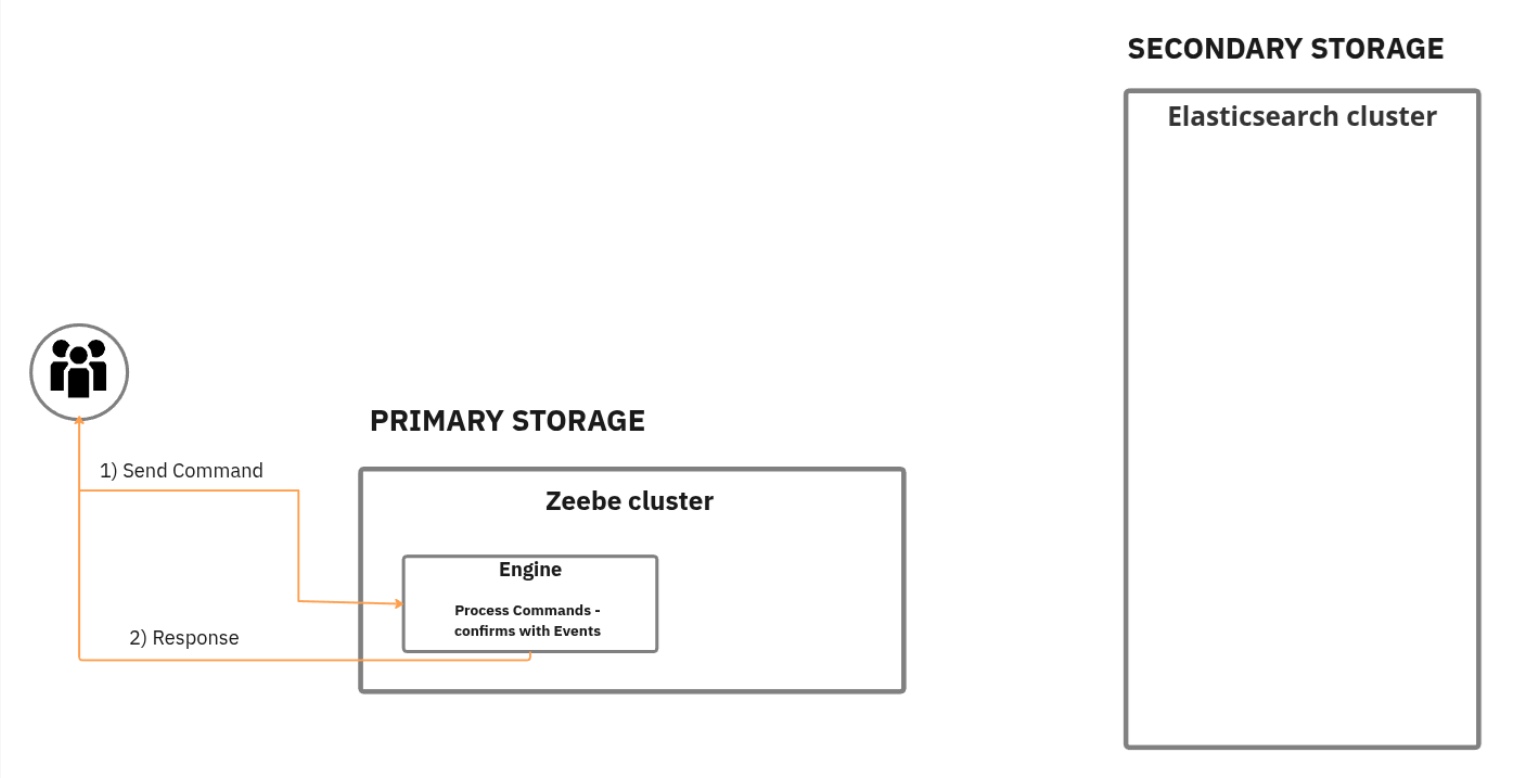
CAMUNDA CON 2025 AMSTERDAM

Data flow

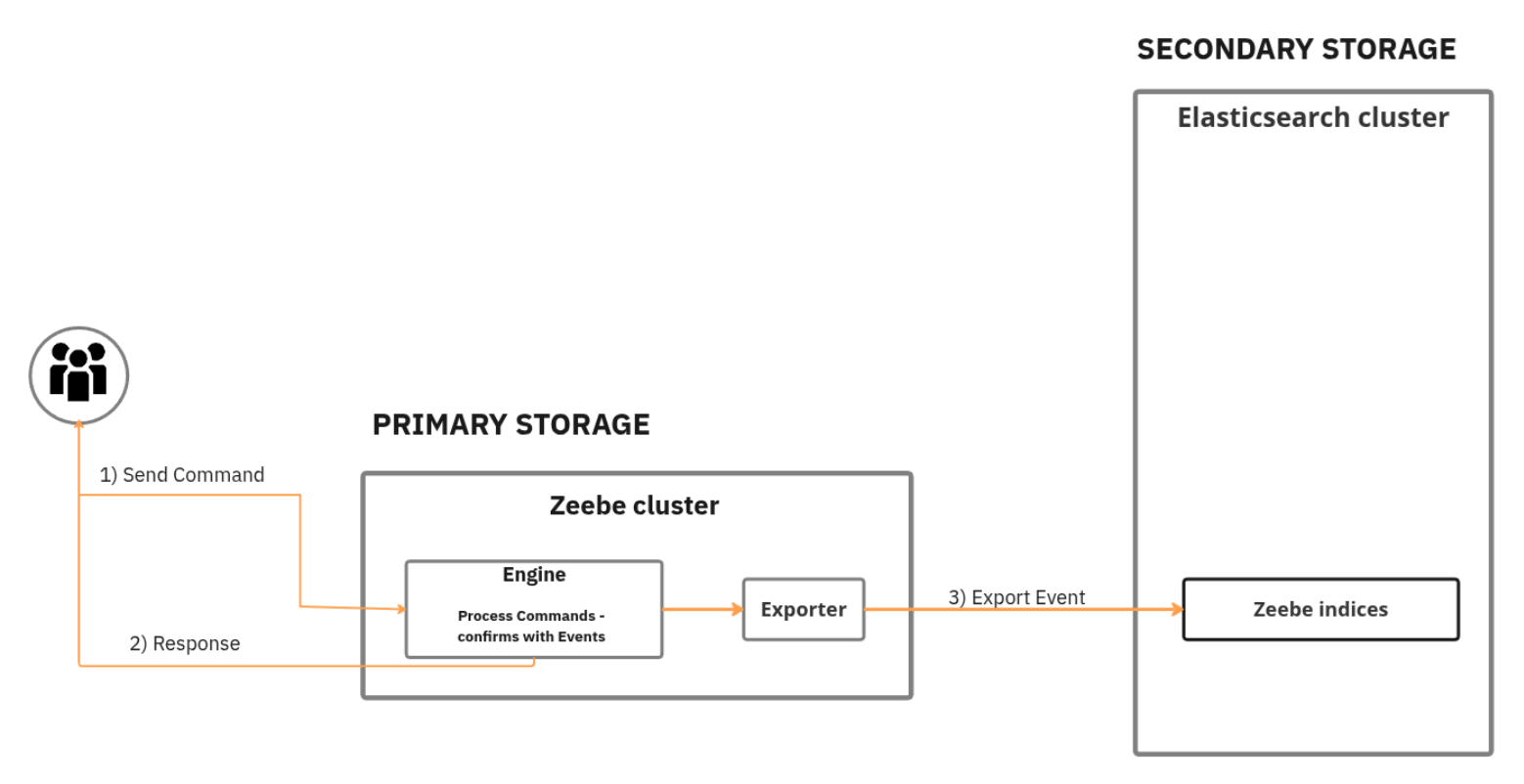
A Tale of Two Storages



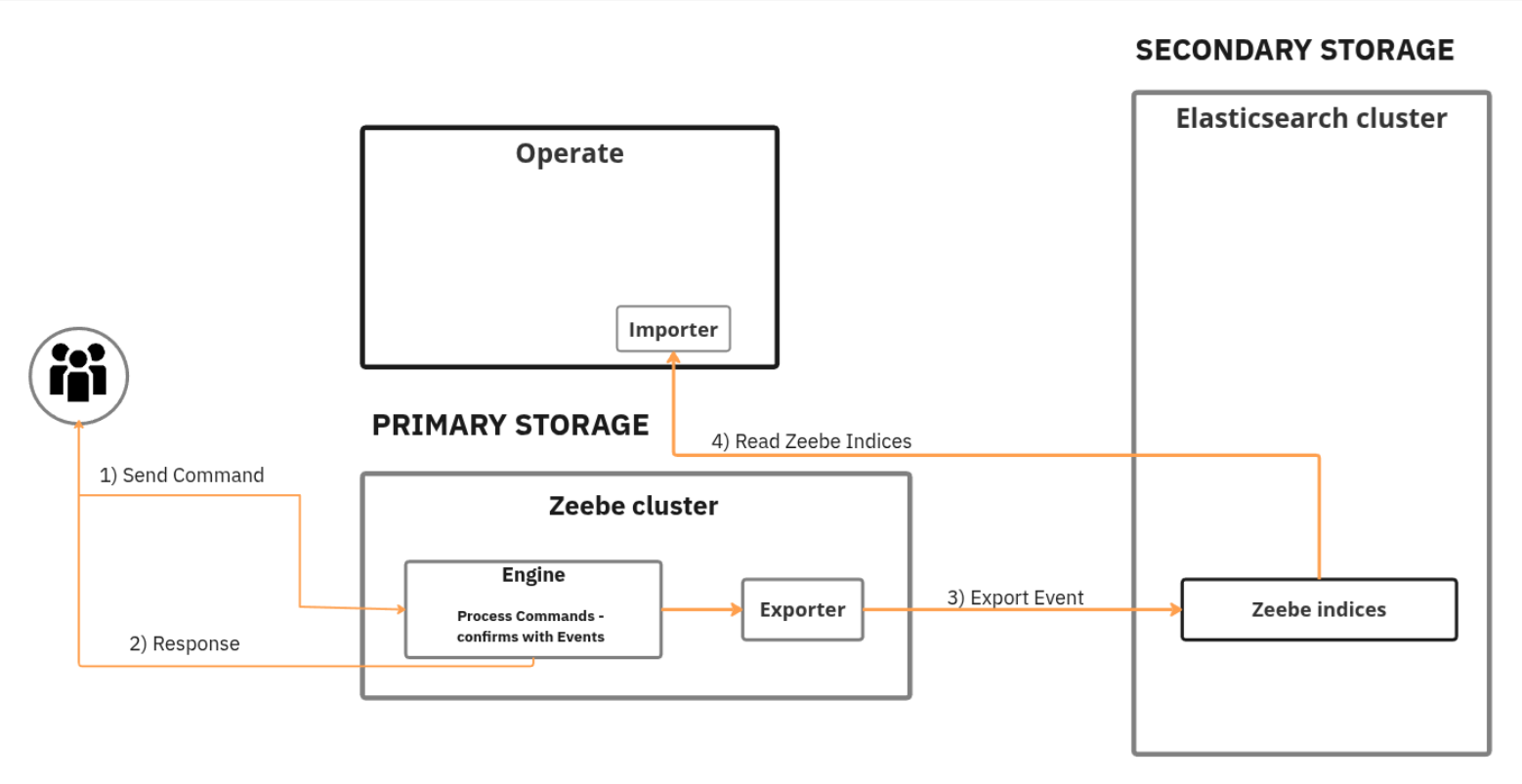
Primary Storage



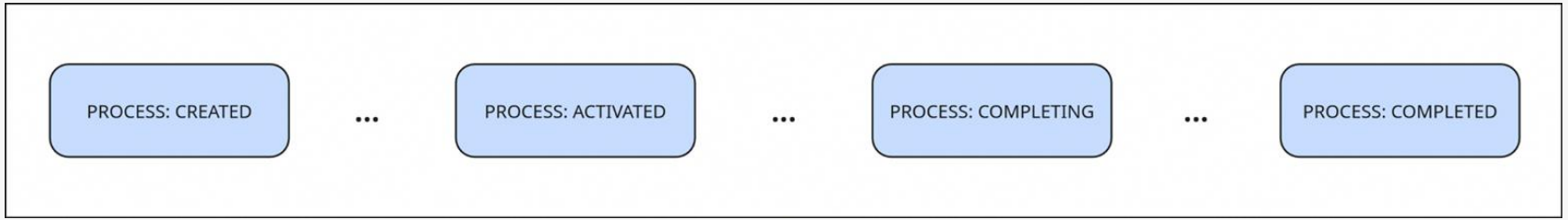
Secondary Storage



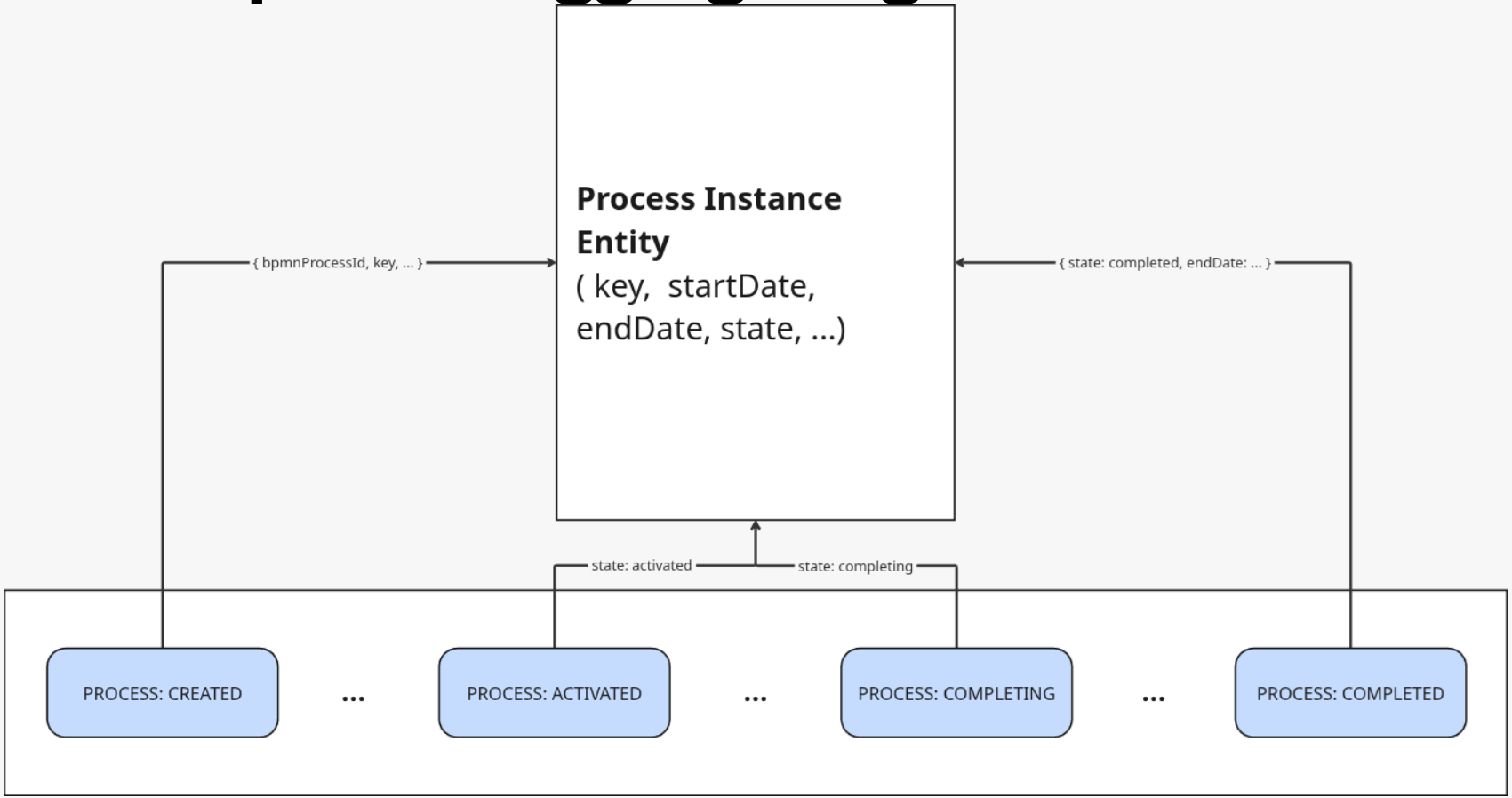
The Importer: Aggregating



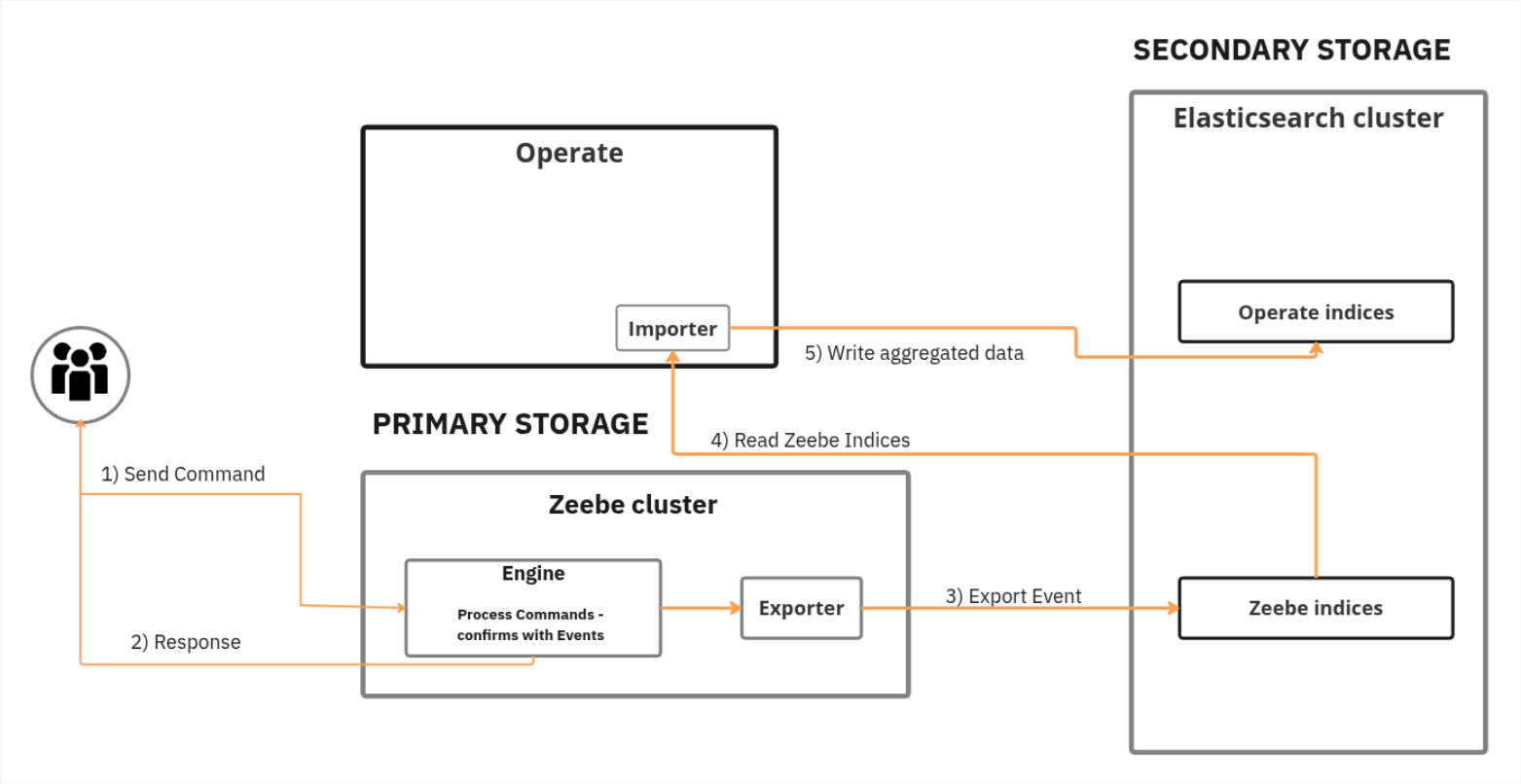
The Importer: Aggregating



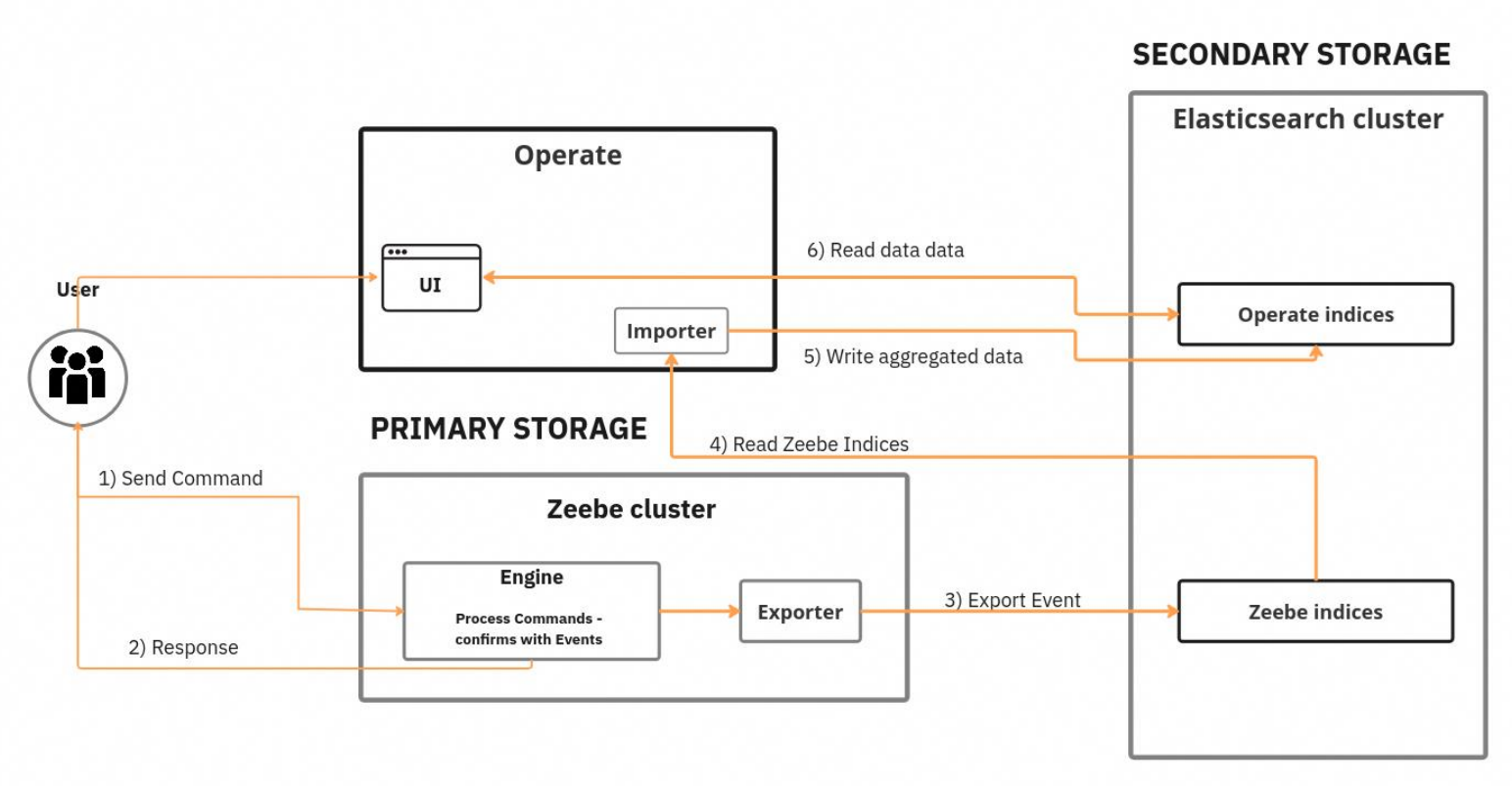
The Importer: Aggregating



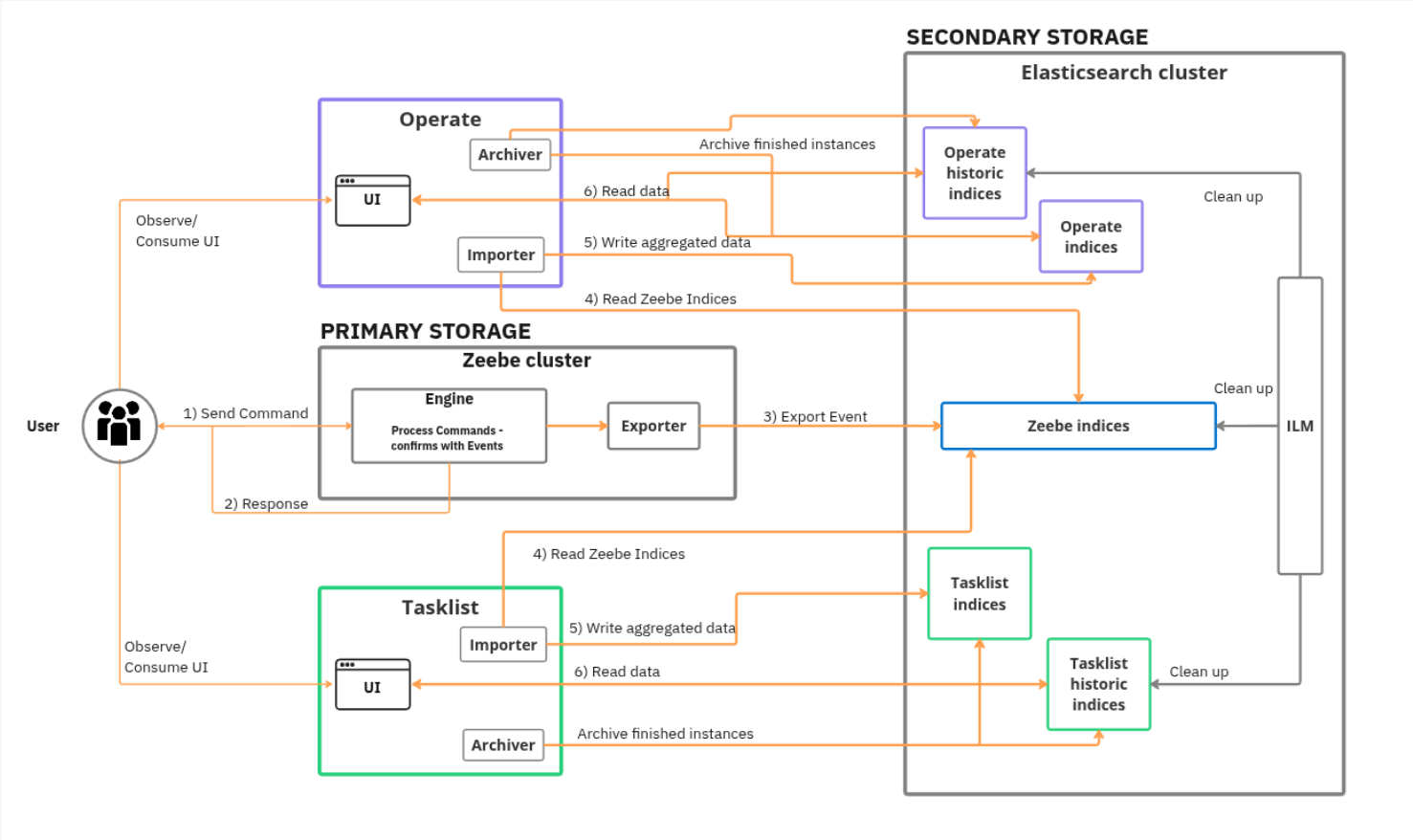
The Importer: Writeback



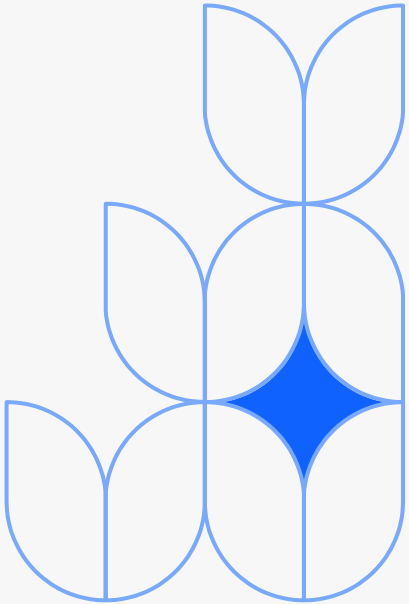
E2E Data Flow



And that’s only part of it...



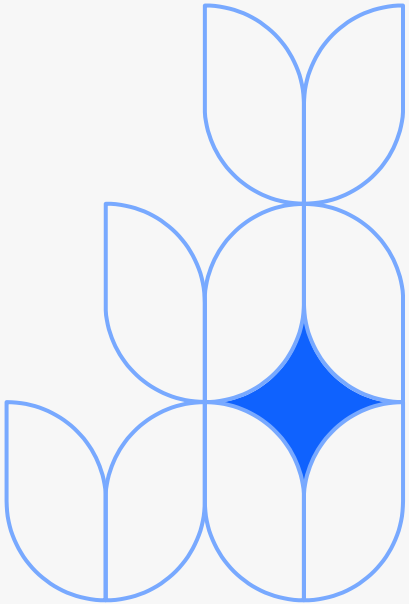
Mantra



Challenge(s) handling

Mantra

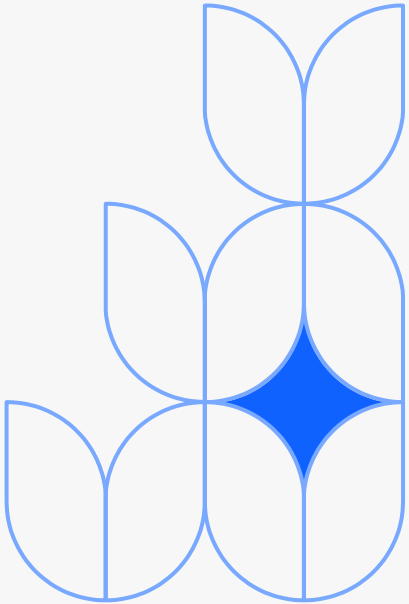
There are no problems, only challenges;



Mantra

There are no problems, only challenges;

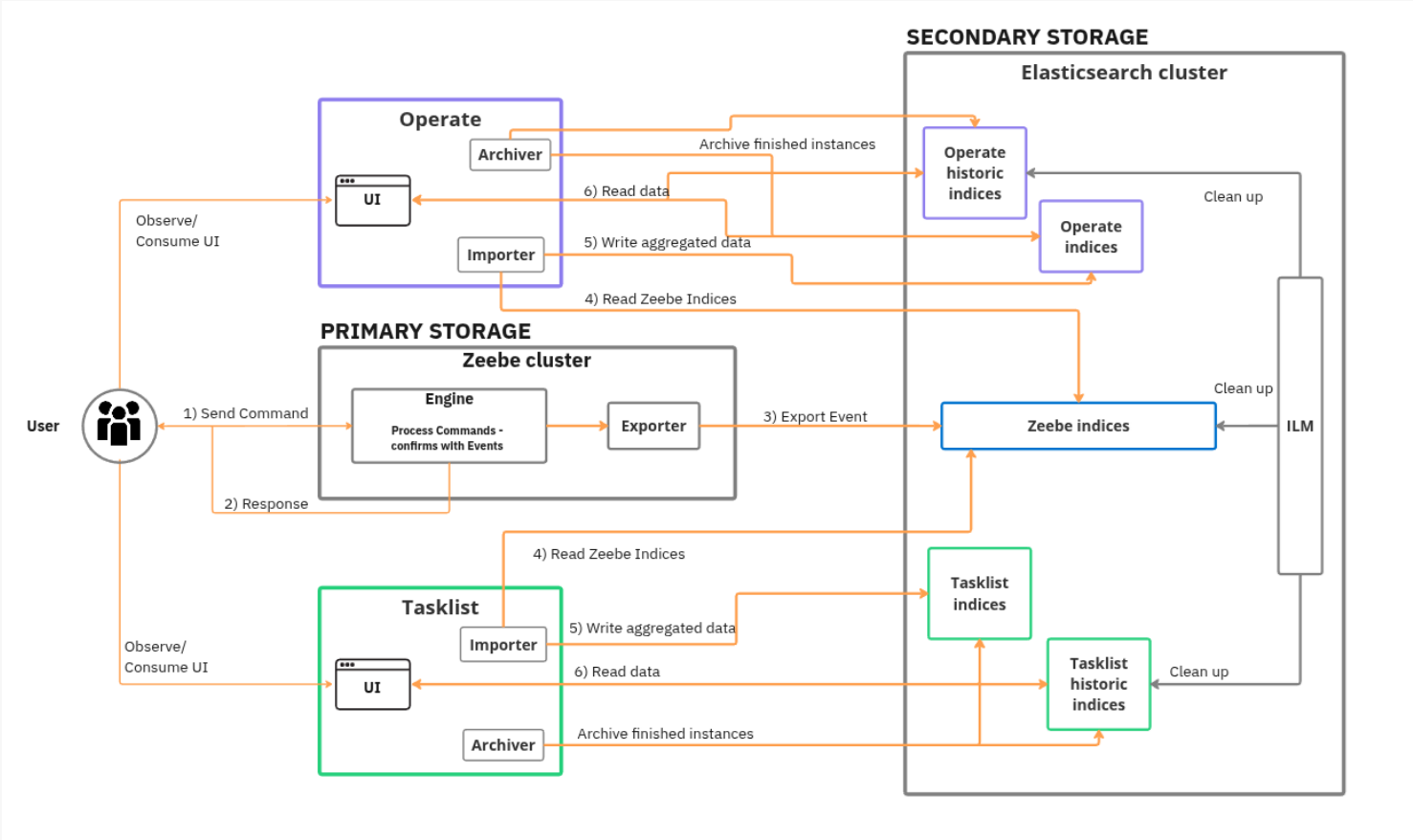
We have the opportunity to grow with every challenge.



CAMUNDA CON 2025 AMSTERDAM

CAMUNDA CON 2025 AMSTERDAM

Reviewing our architecture



Challenges with the architecture

Installation complexity

Resource consumption

Scalability

Performance

Challenges with the architecture

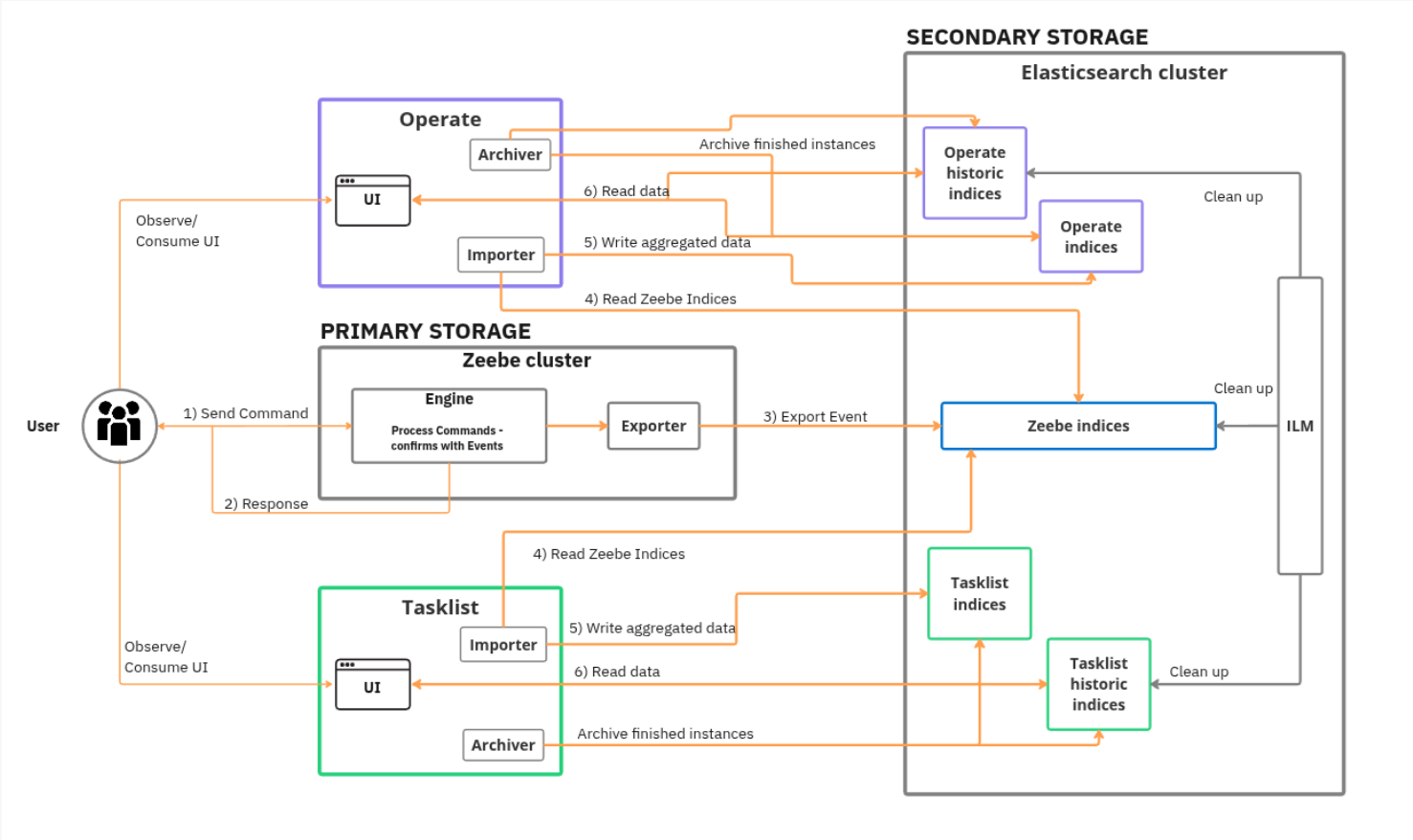
Installation complexity

Resource consumption

Scalability

Performance

Installation complexity



Challenges with the architecture

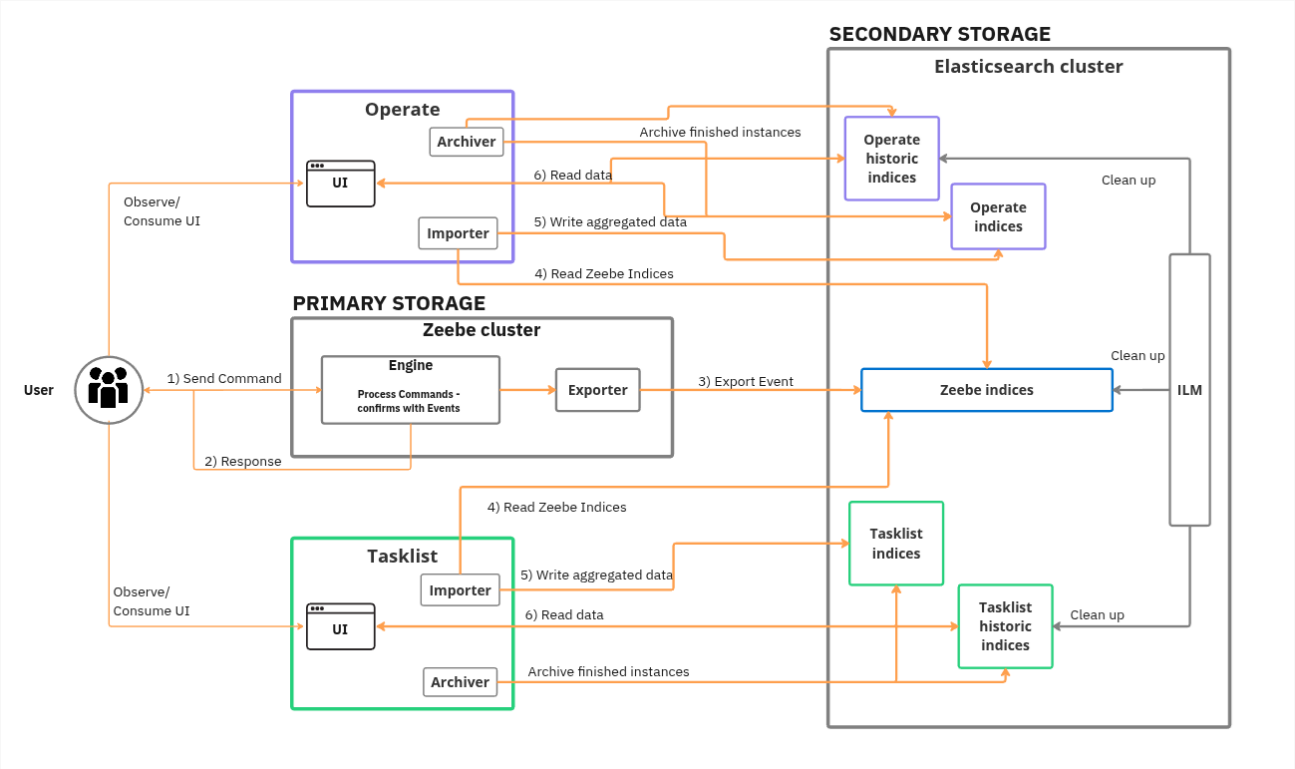
Installation complexity

Resource consumption

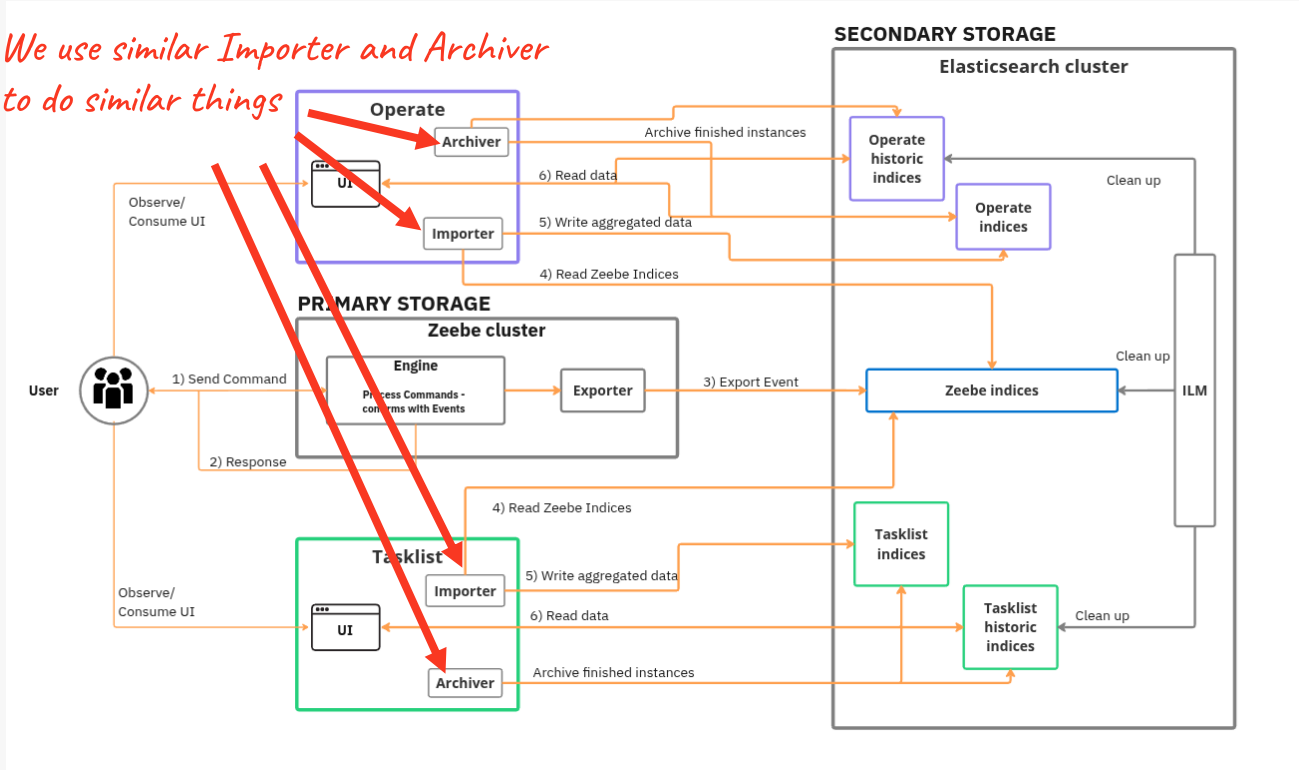
Scalability

Performance

Secondary storage: Resource consumption



Secondary storage: Resource consumption

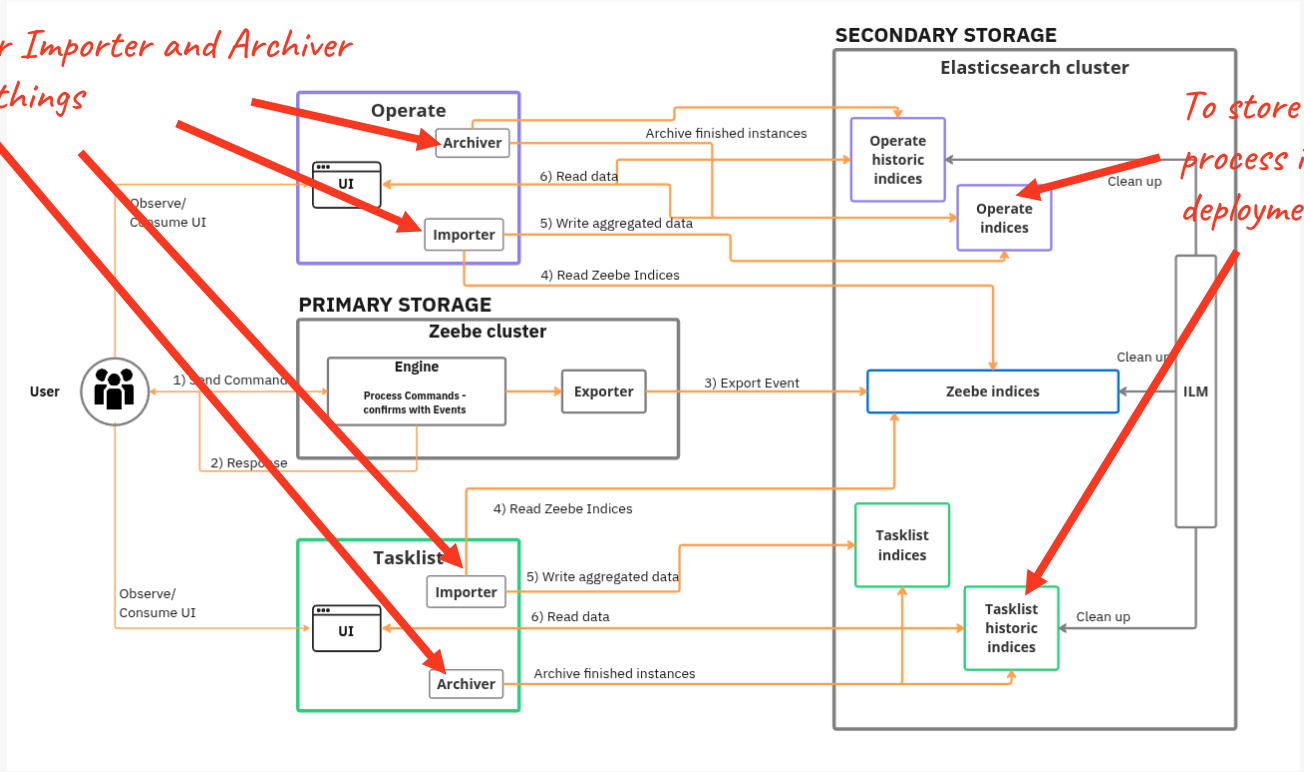


Challenge(s) handling > Identify

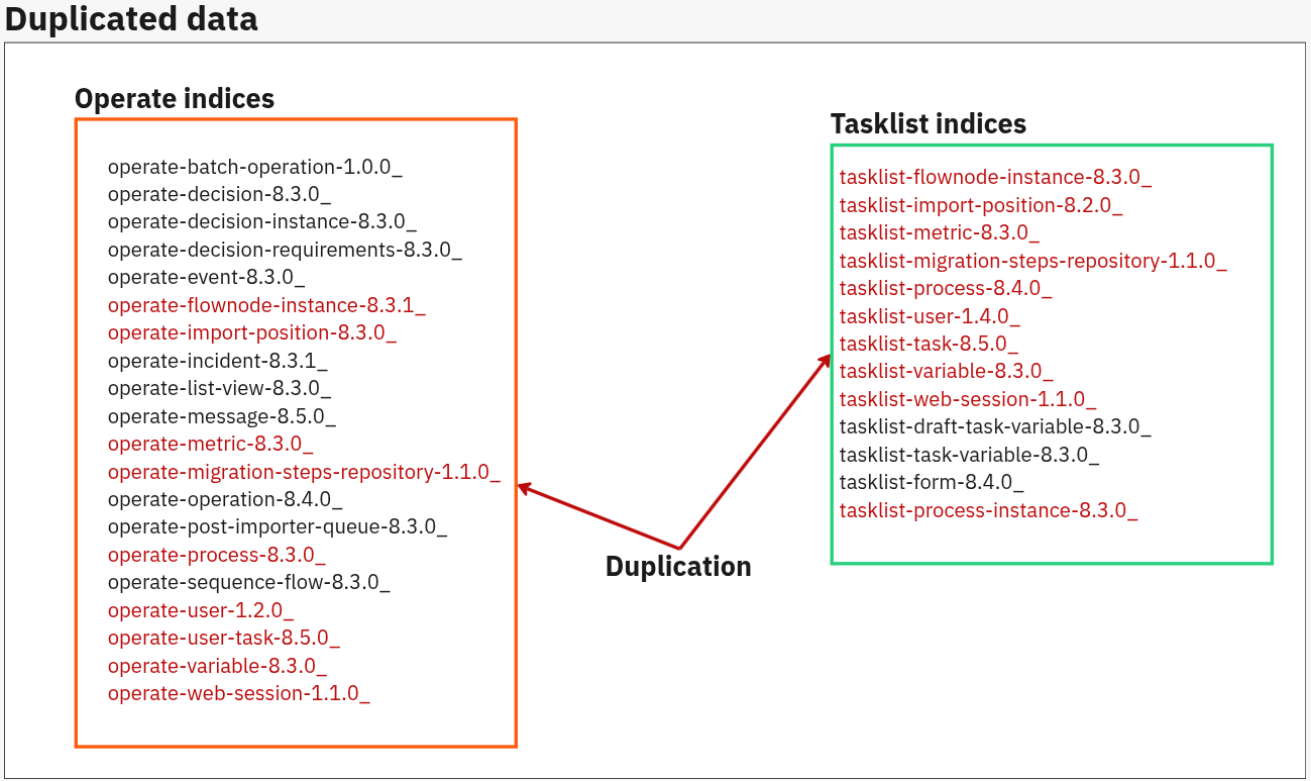
Secondary storage: Resource consumption

We use similar Importer and Archiver to do similar things

To store similar data, like: process instance, deployment, etc



Secondary storage: Resource consumption



Challenges with the architecture

Installation complexity

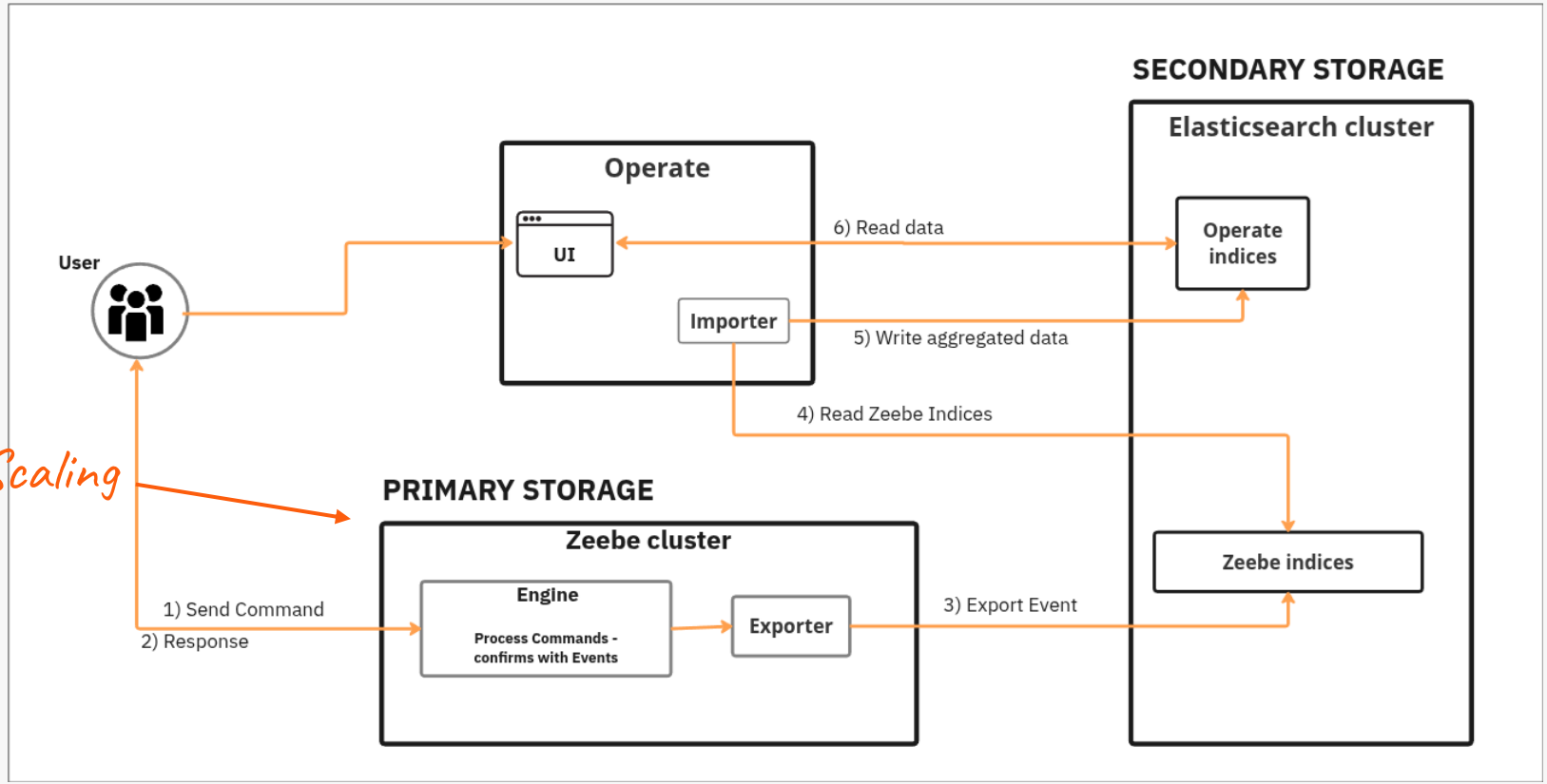
Resource consumption

Scalability

Performance

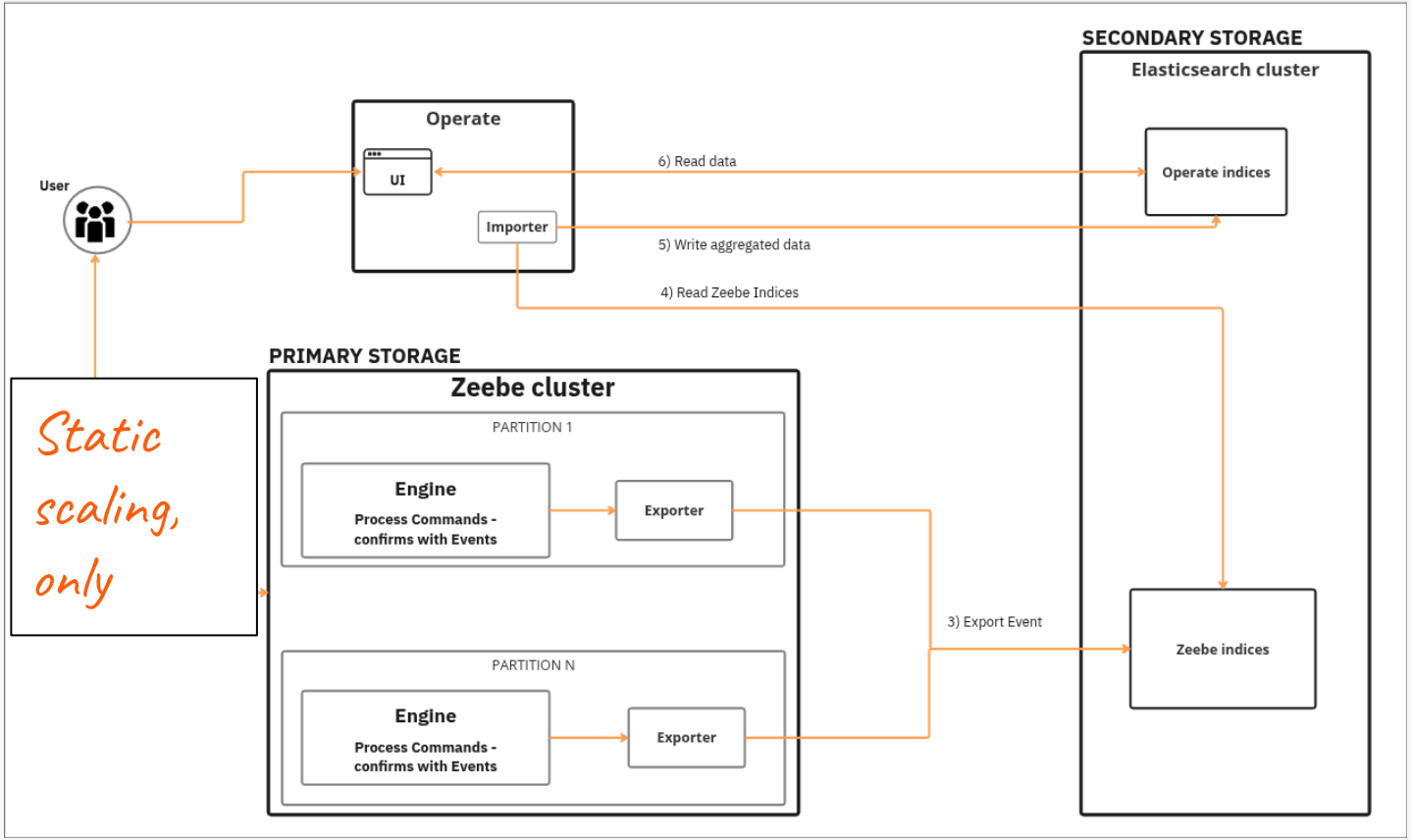
Scalability

Overview - 8.7 state (simplified)



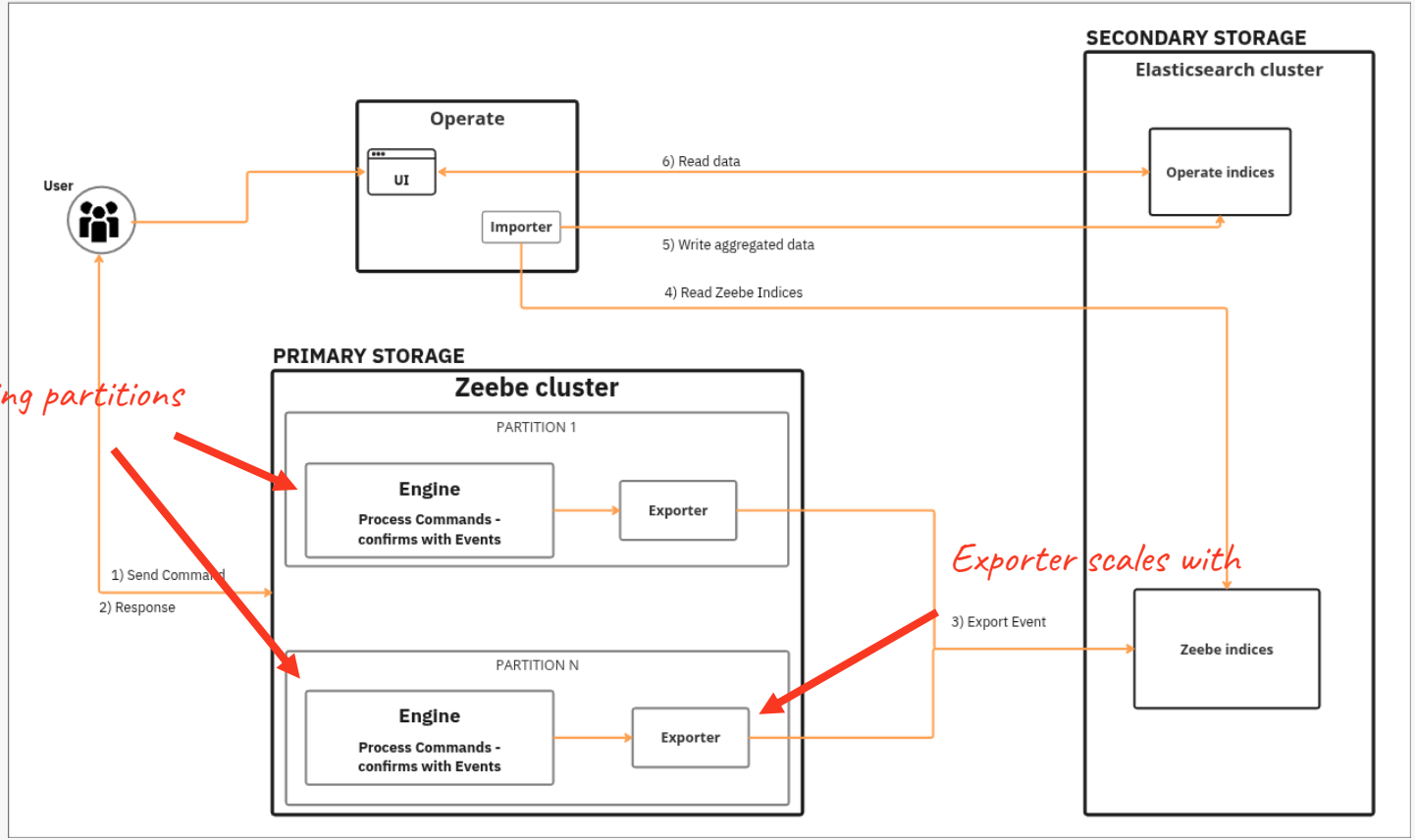
Scalability

Overview - 8.7 state (simplified)



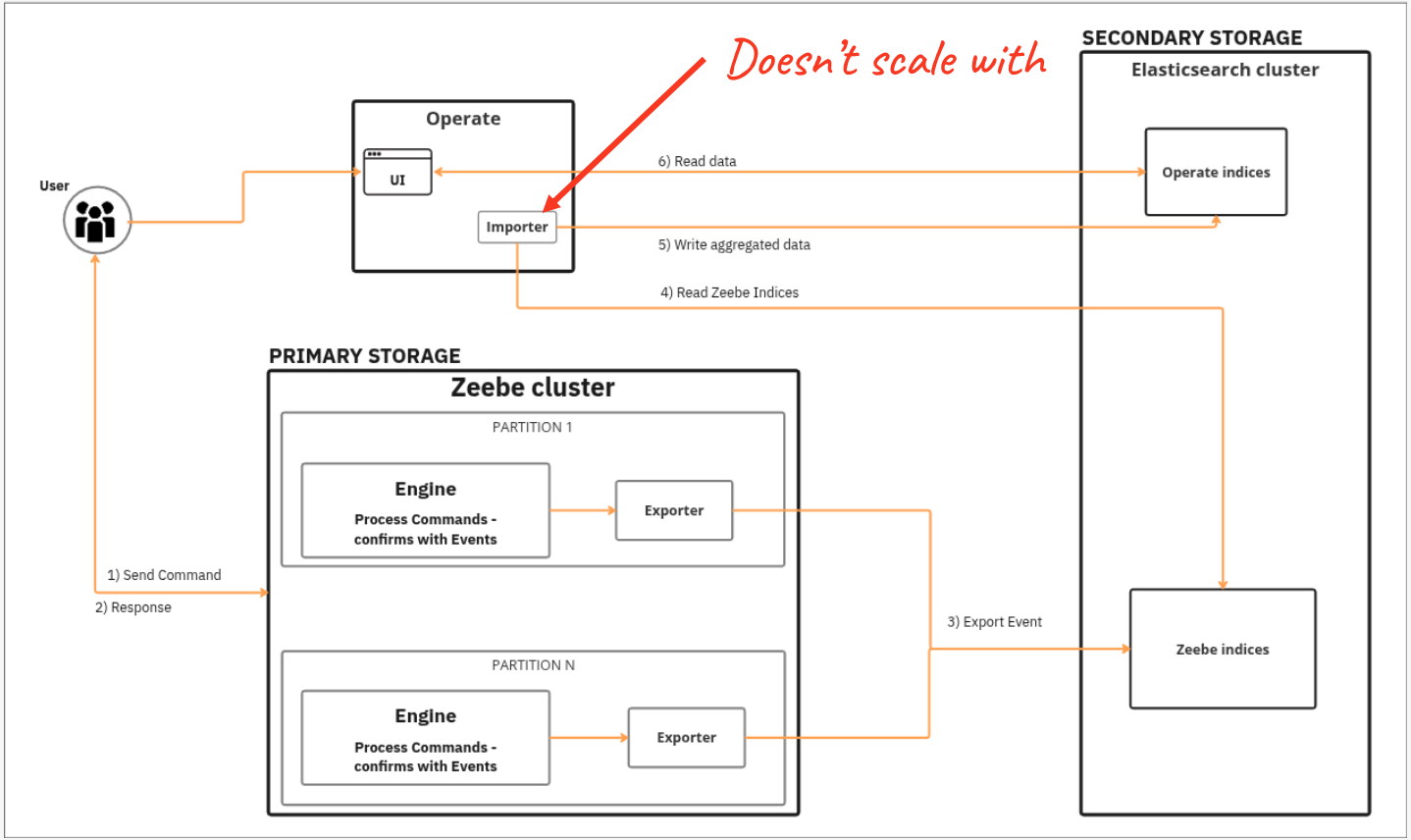
Scalability

Overview - 8.7 state (simplified)



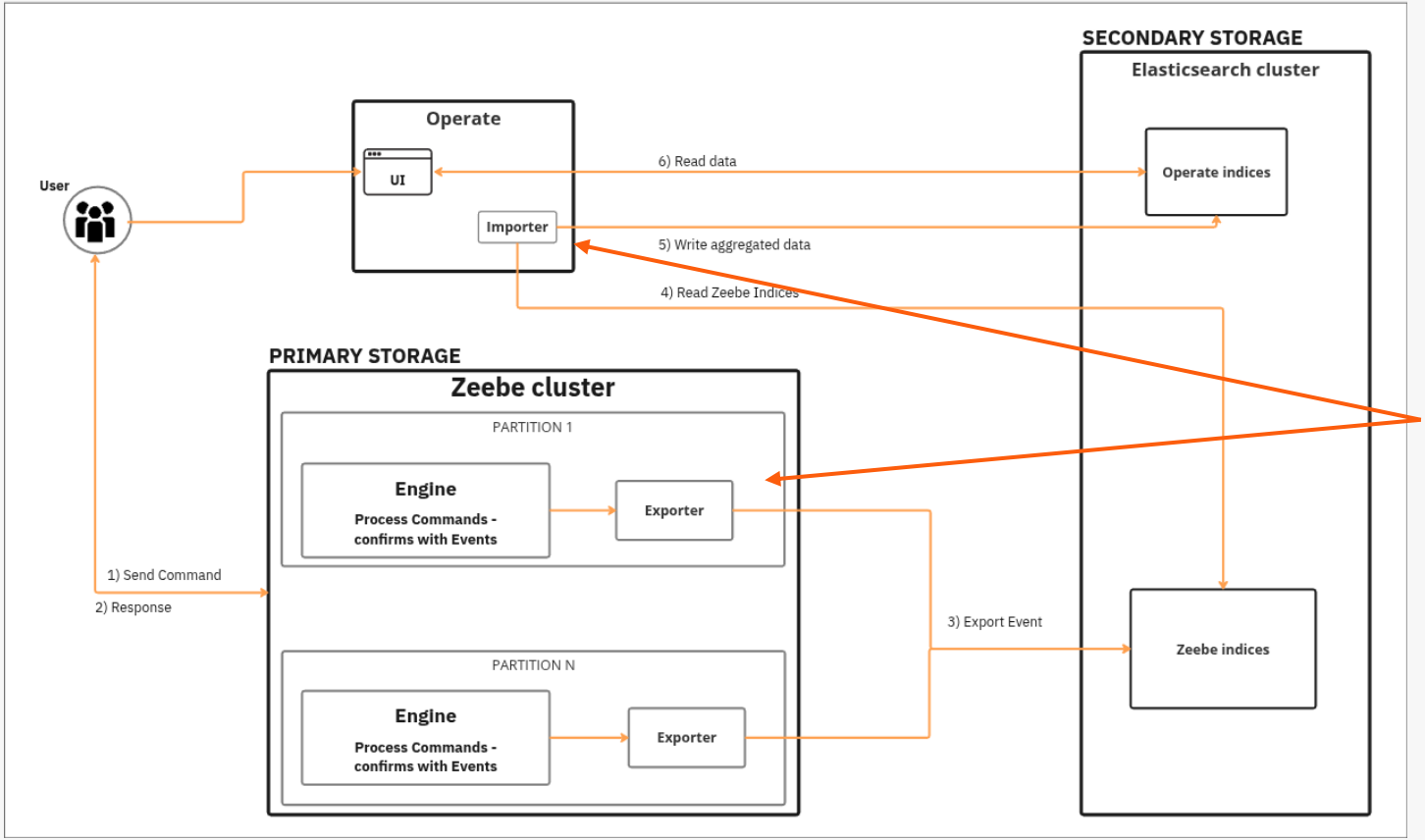
Scalability

Overview - 8.7 state (simplified)



Scalability

Overview - 8.7 state (simplified)



Decoupling, limits our dynamic scaling approach

Challenges with the architecture

Installation complexity

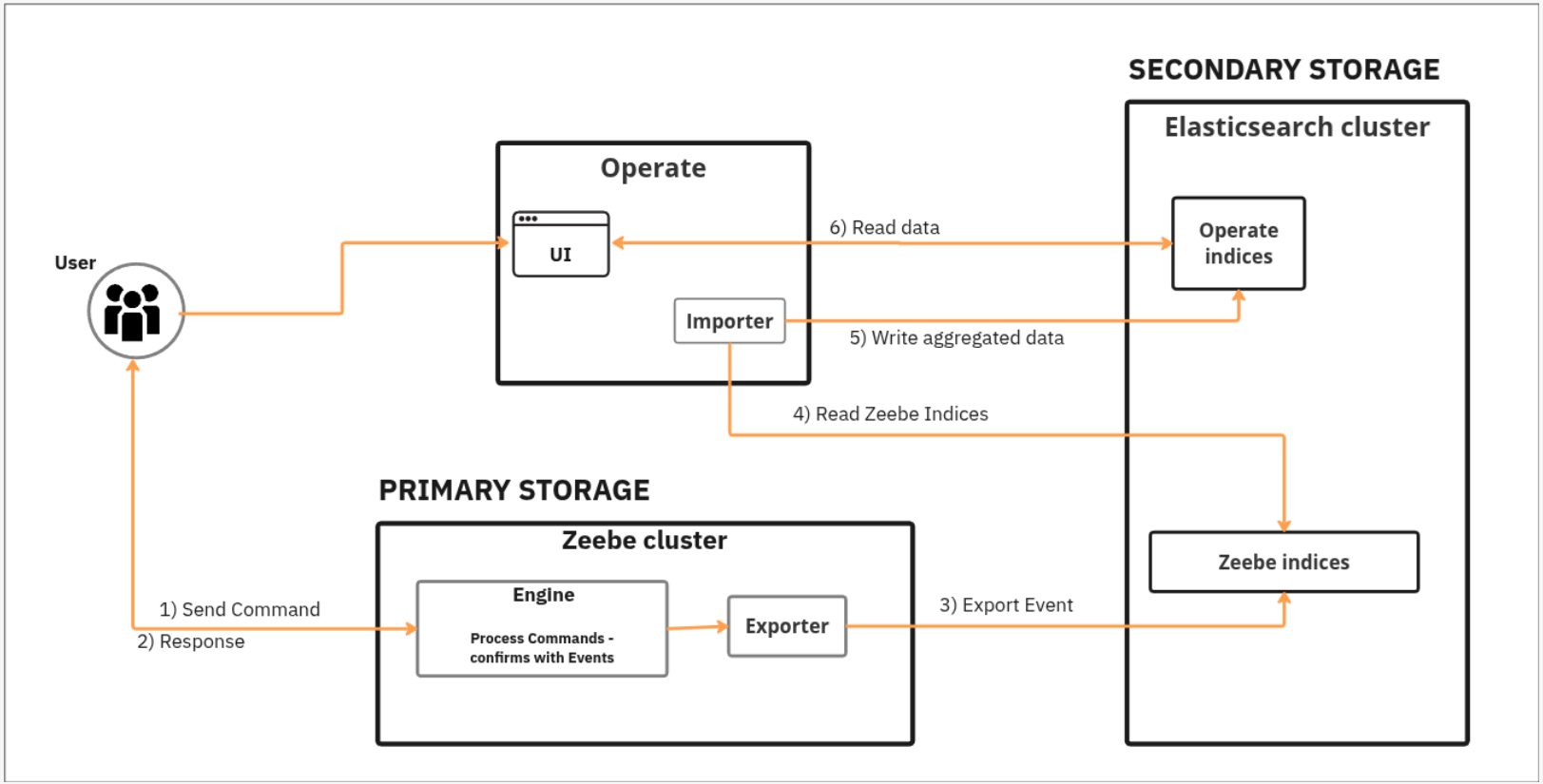
Resource consumption

Scalability

Performance

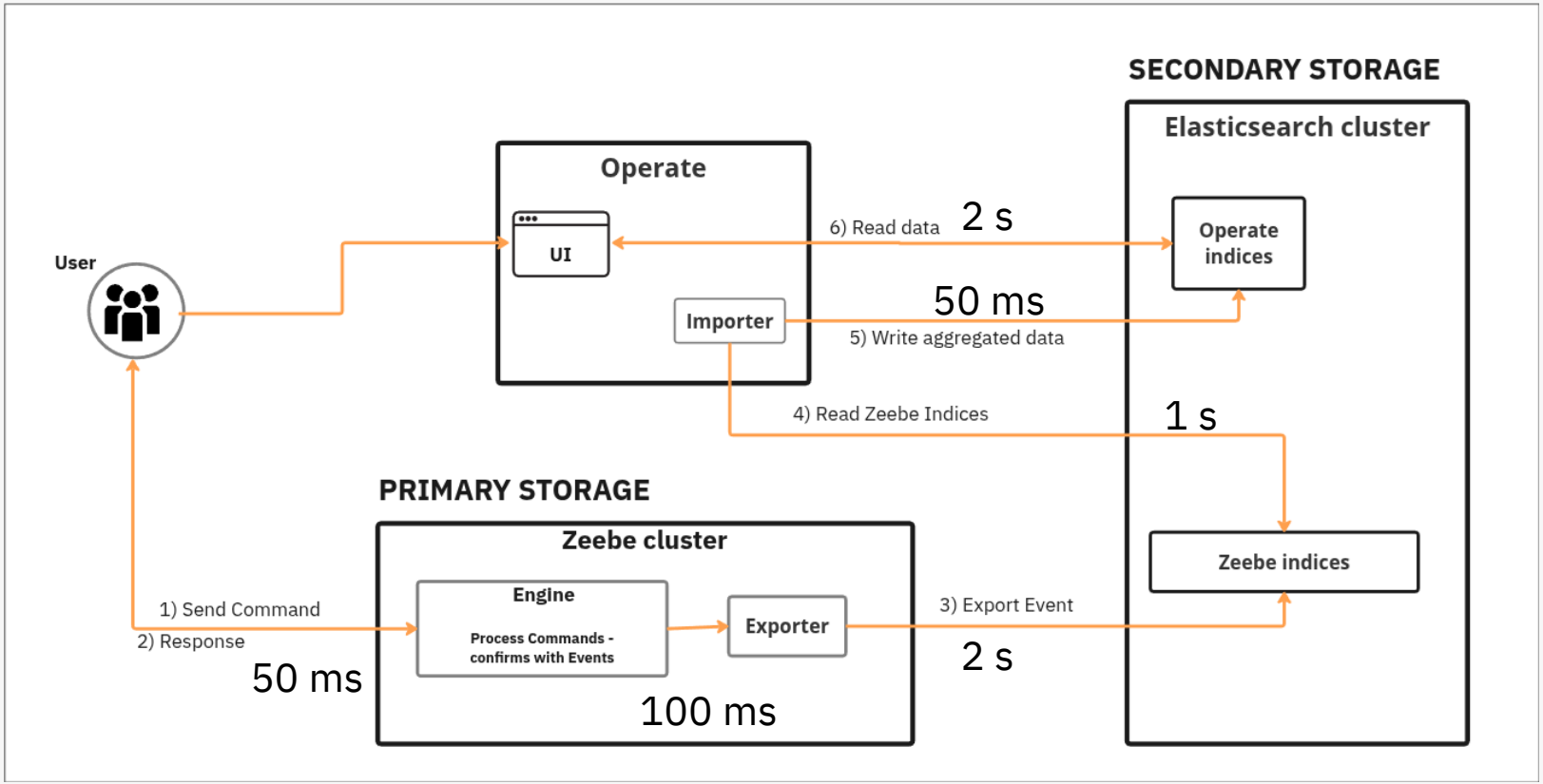
Performance

Overview - 8.7 state (simplified)



Performance

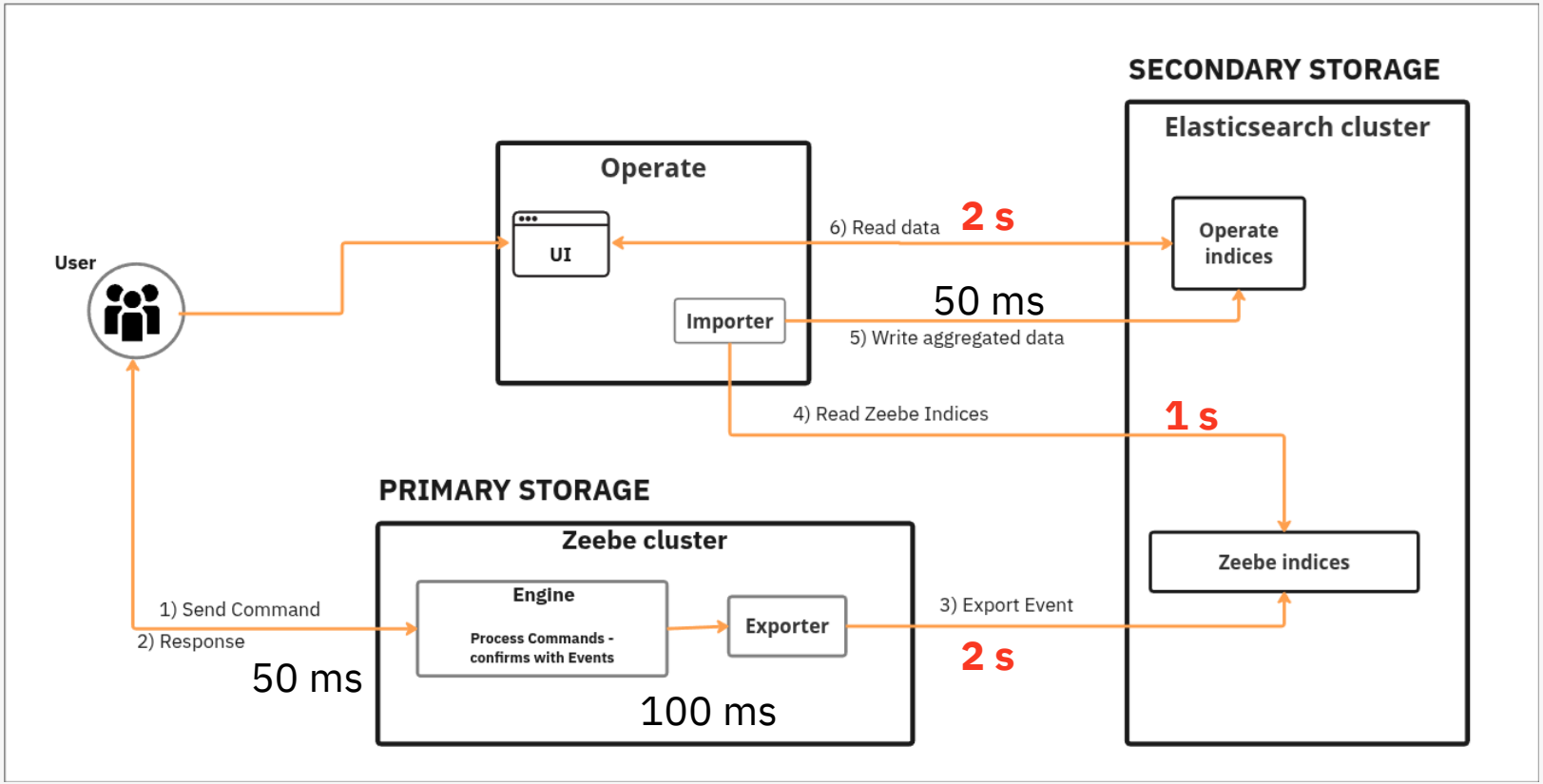
Overview - 8.7 state (simplified)



Challenge(s) handling > Identify

Performance

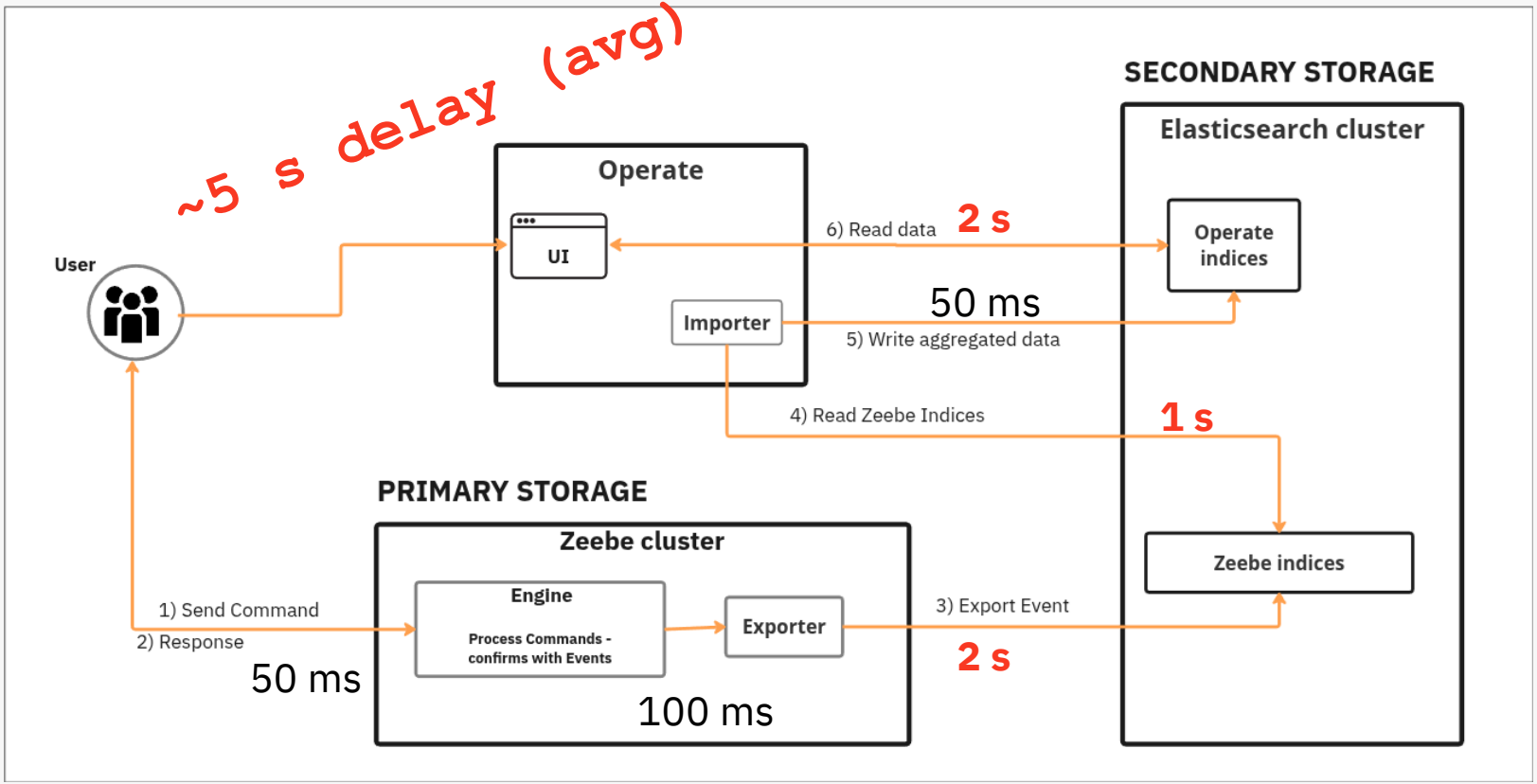
Overview - 8.7 state (simplified)



Challenge(s) handling > Identify

Performance

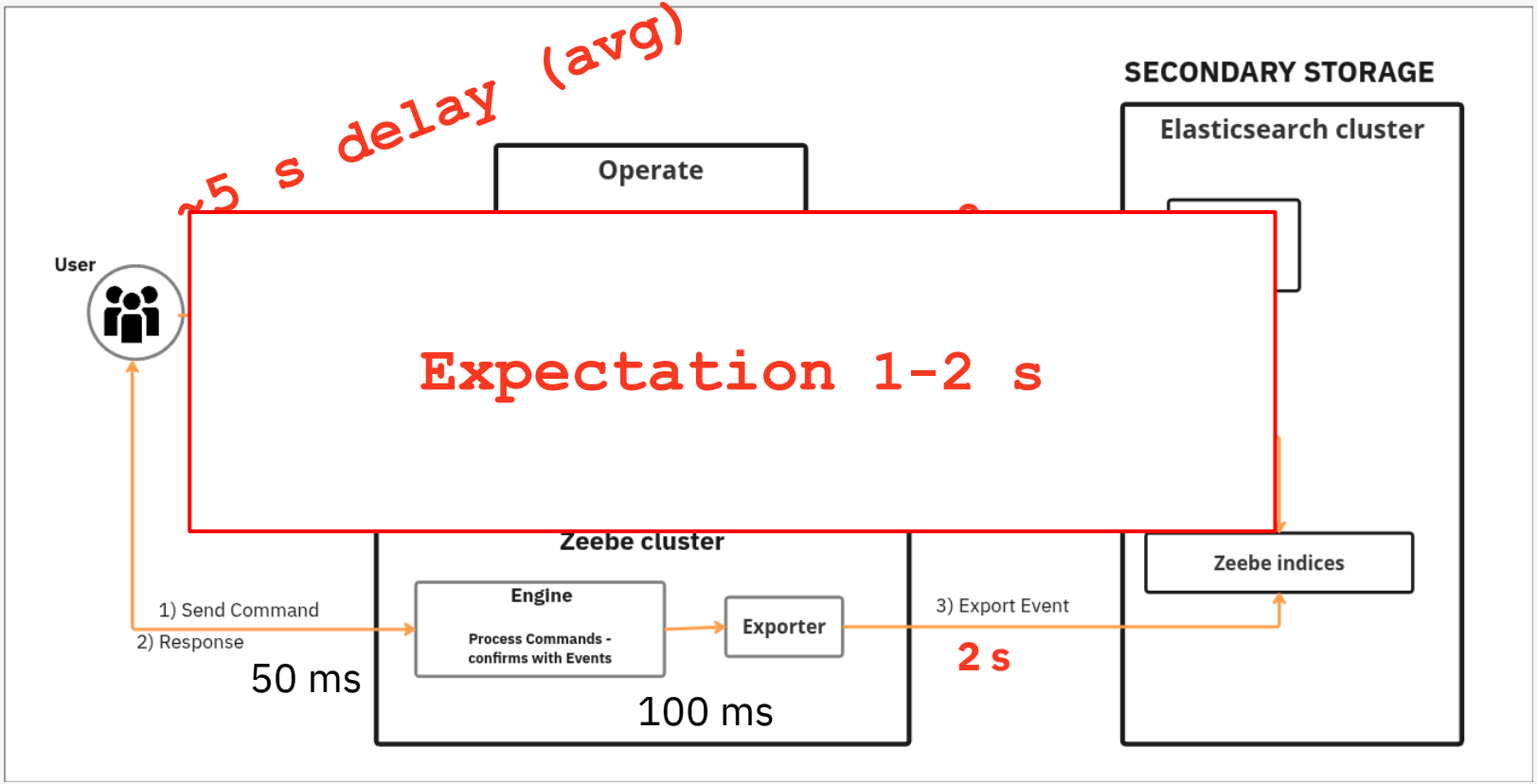
Overview - 8.7 state (simplified)



Challenge(s) handling > Identify

Performance

Overview - 8.7 state (simplified)



Challenges with the architecture

Installation complexity

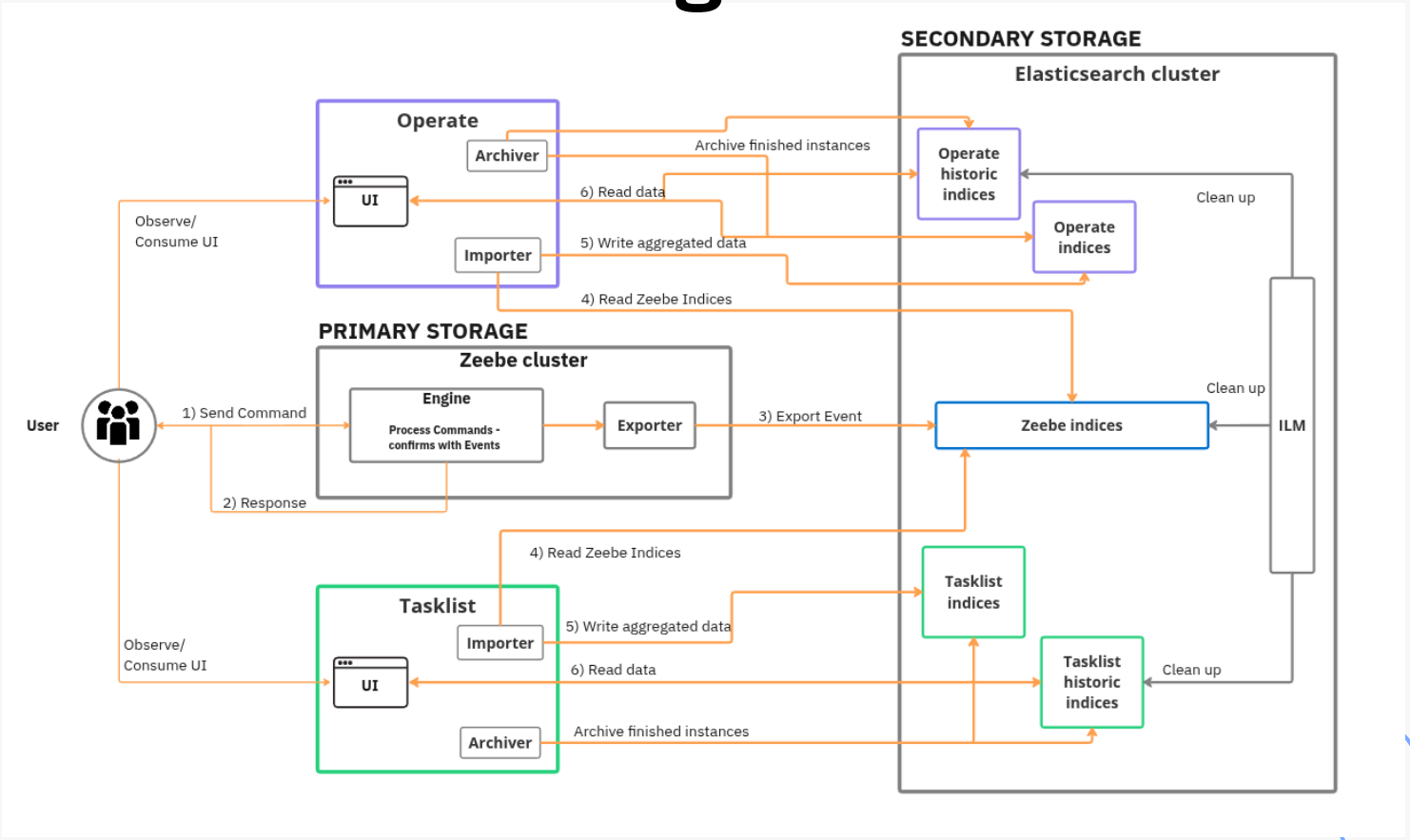
Resource consumption

Scalability

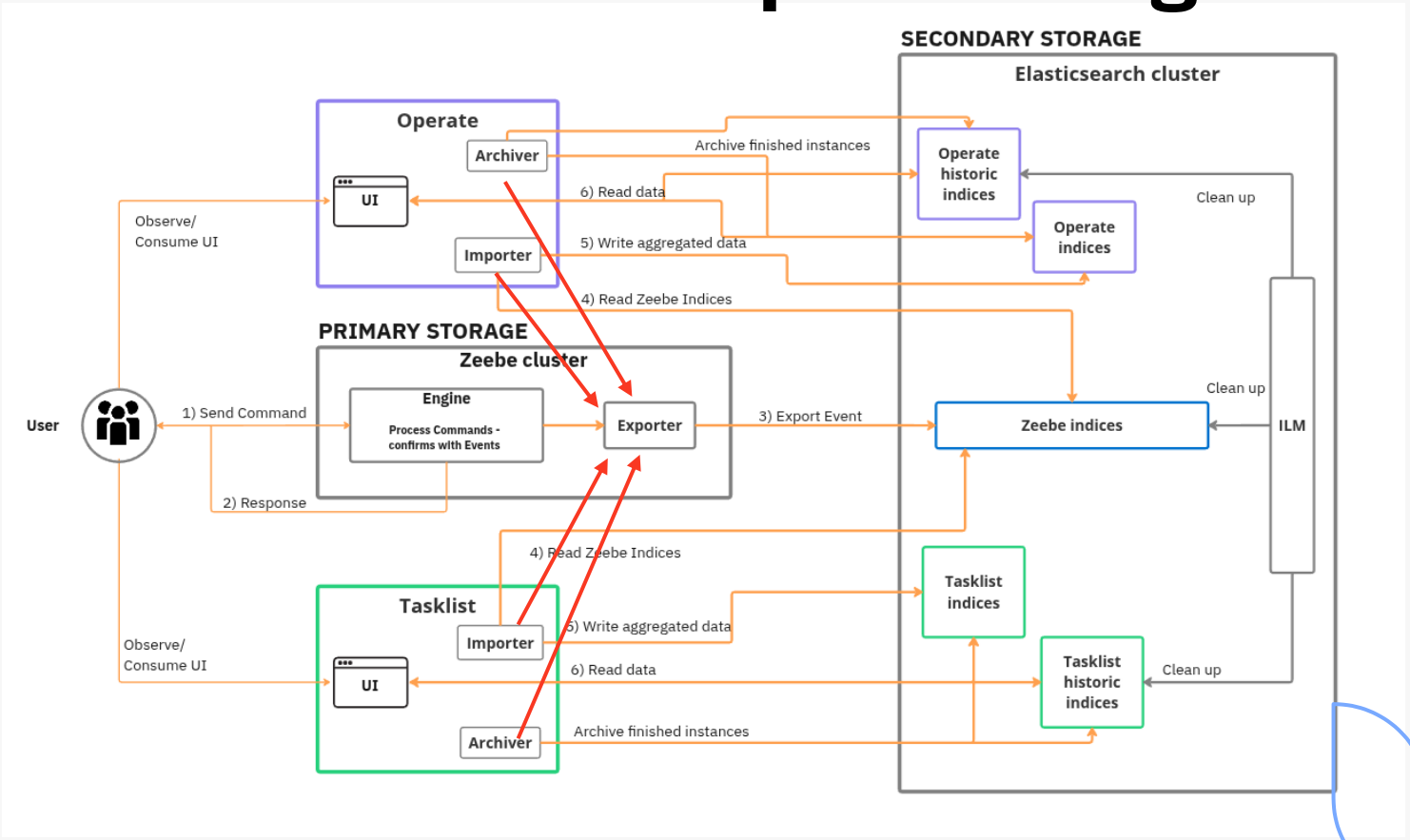
Performance

CAMUNDA CON 2025 AMSTERDAM

We need to change our architecture

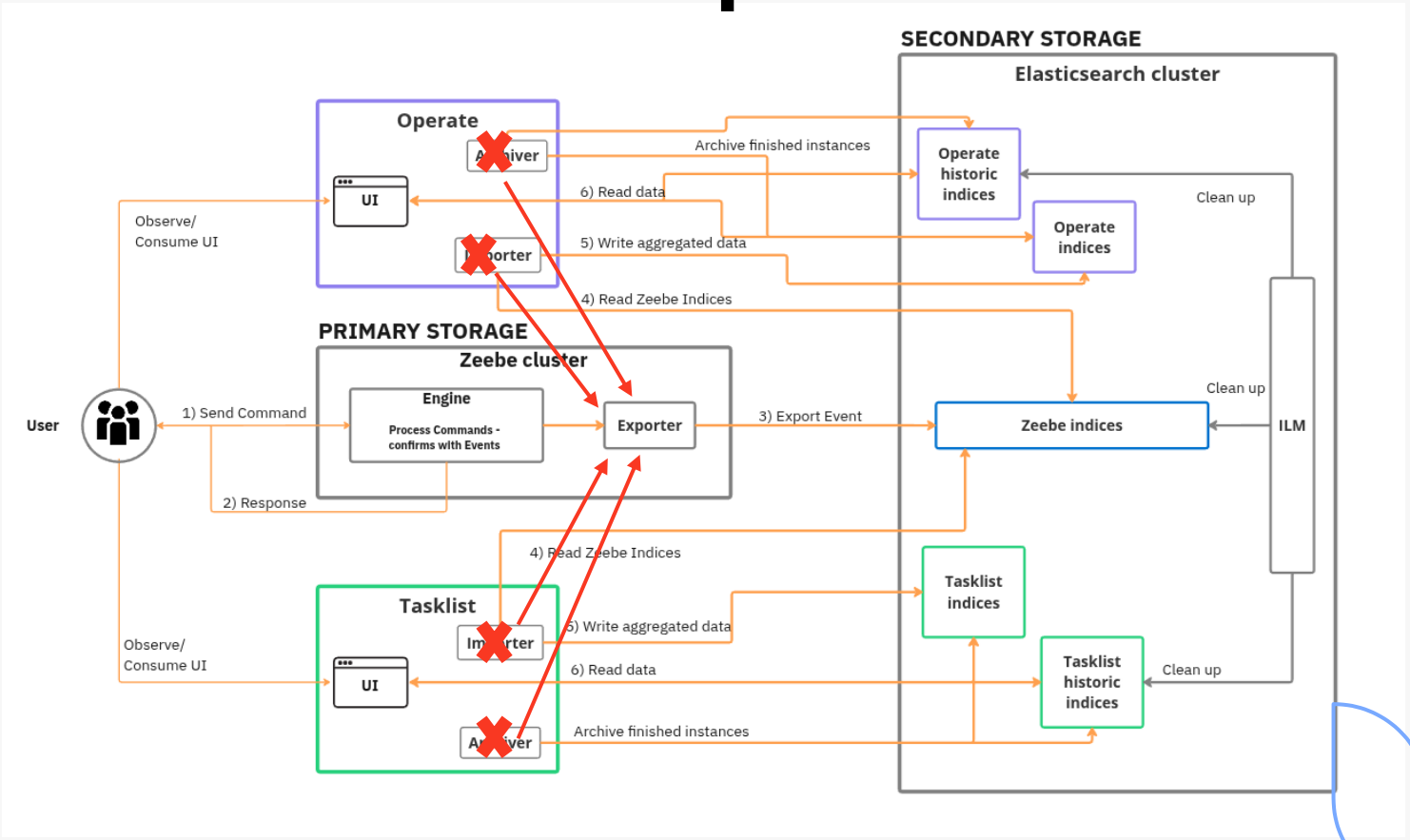


Move closer to the processing

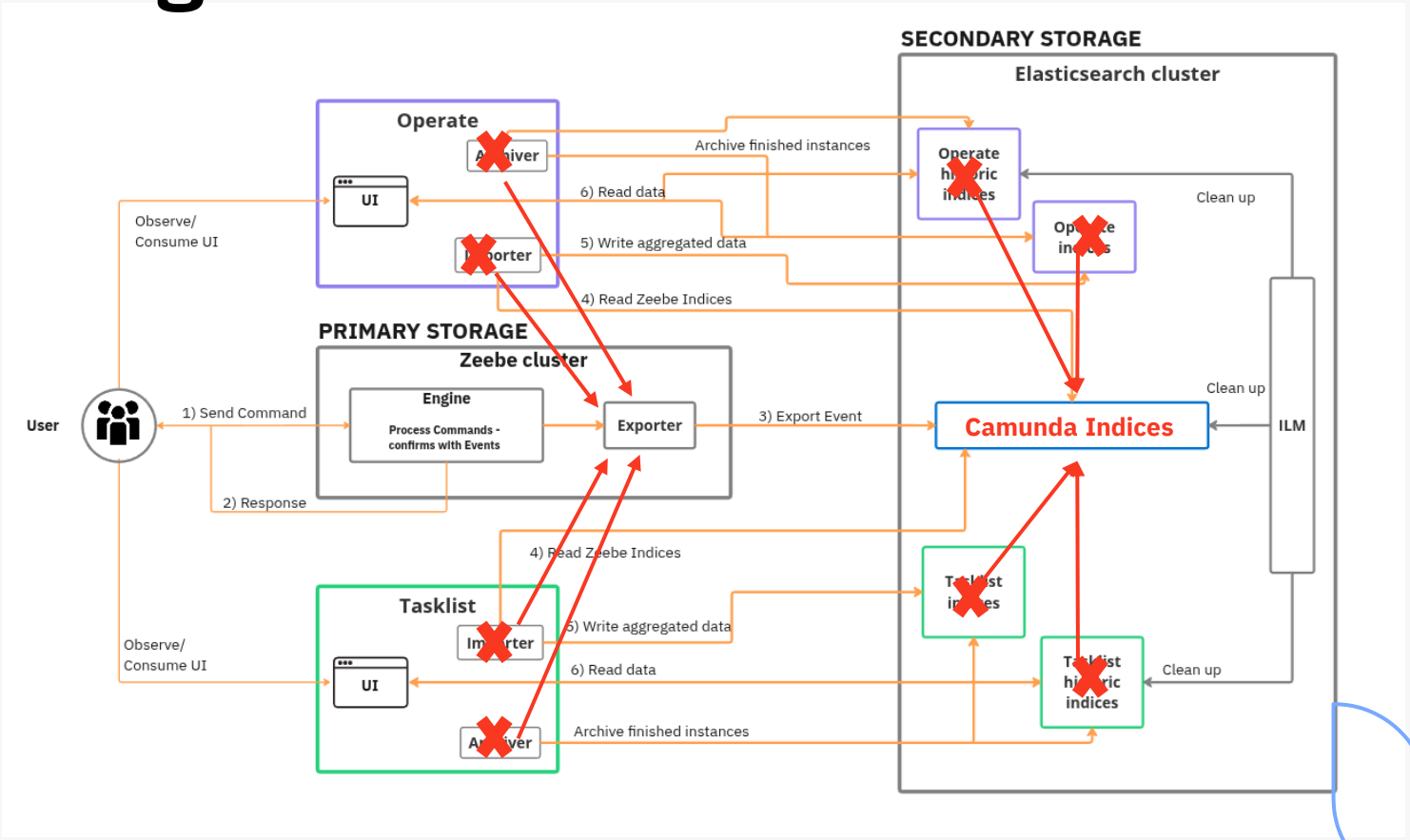


Challenge(s) handling > Plan

Get rid of old components



Merge data structure



CAMUNDA CON 2025 AMSTERDAM

Long way to go

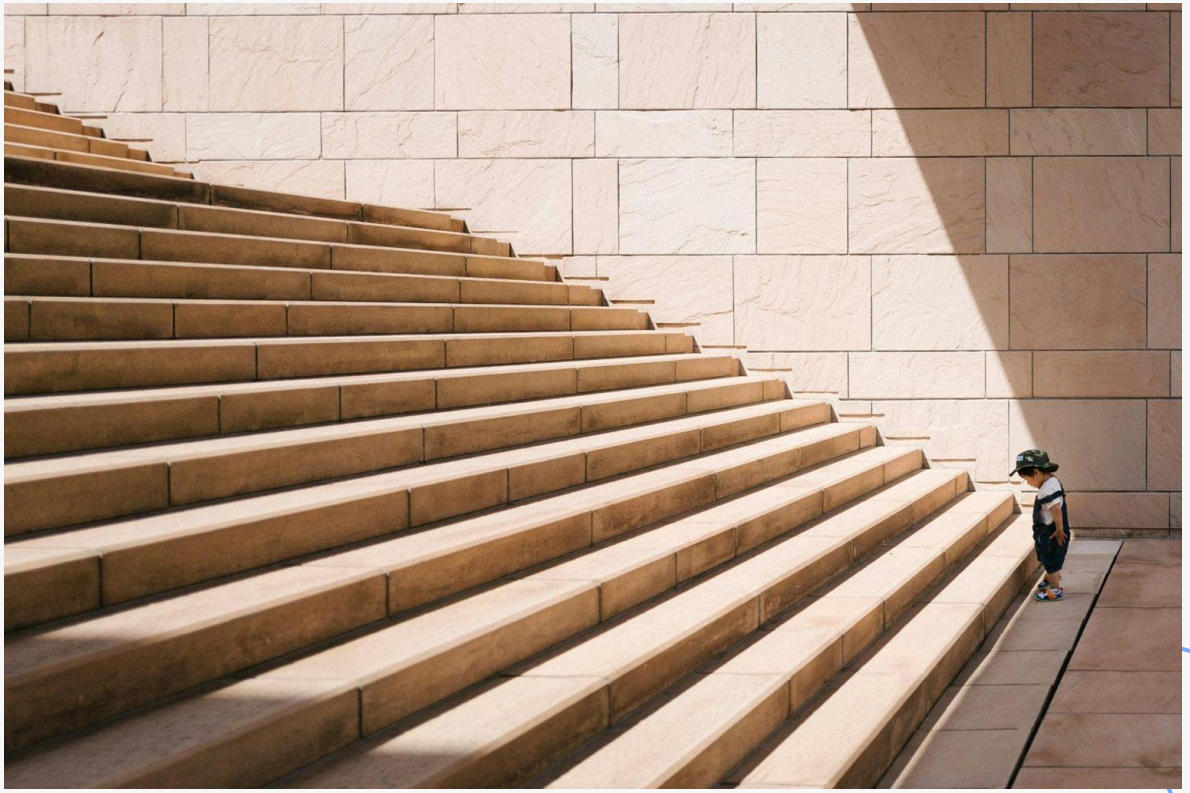


Photo by Jukan Tateisi on Unsplash

Challenge(s) handling > Implement

Encountering obstacles

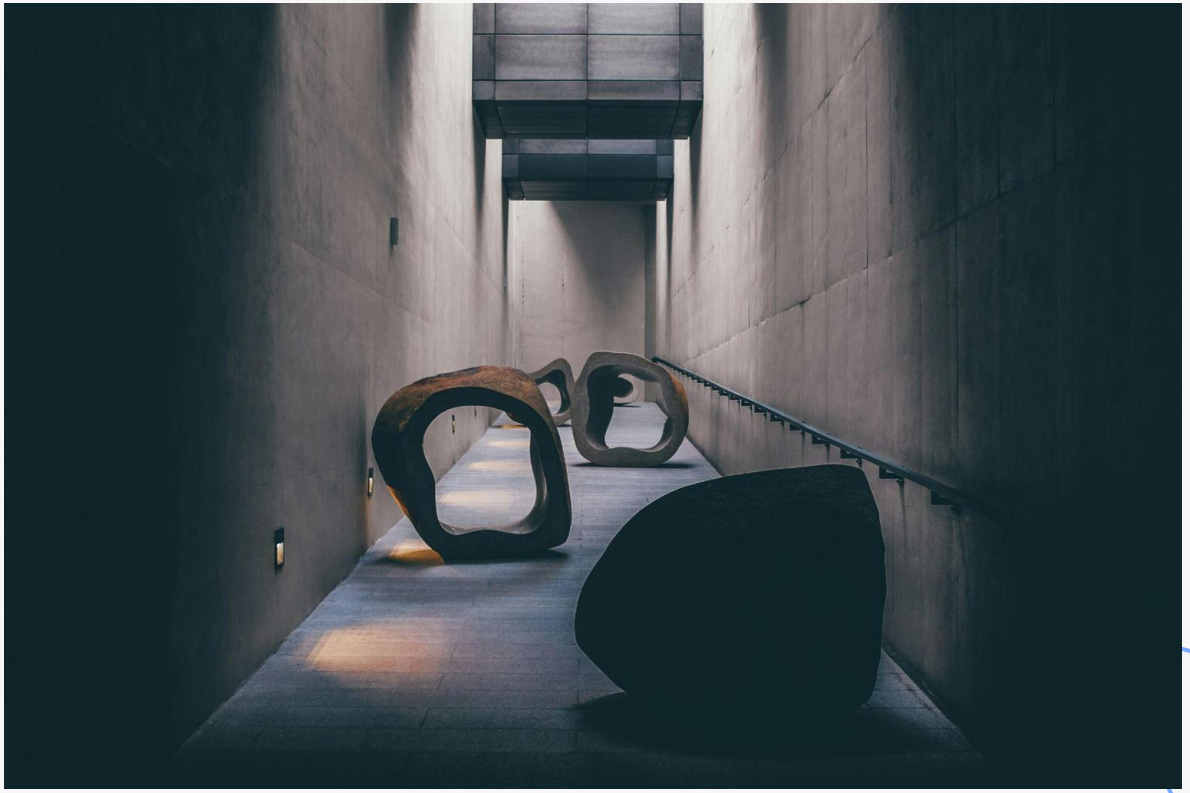
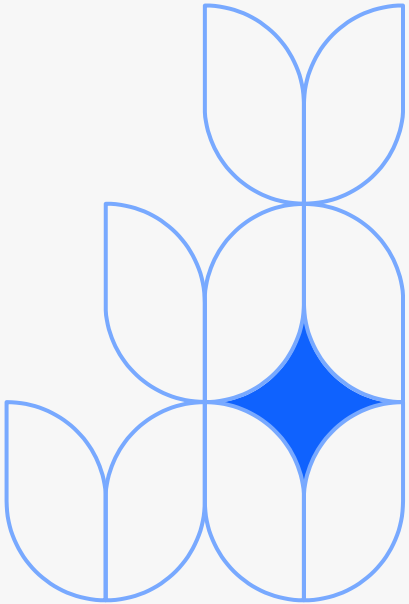
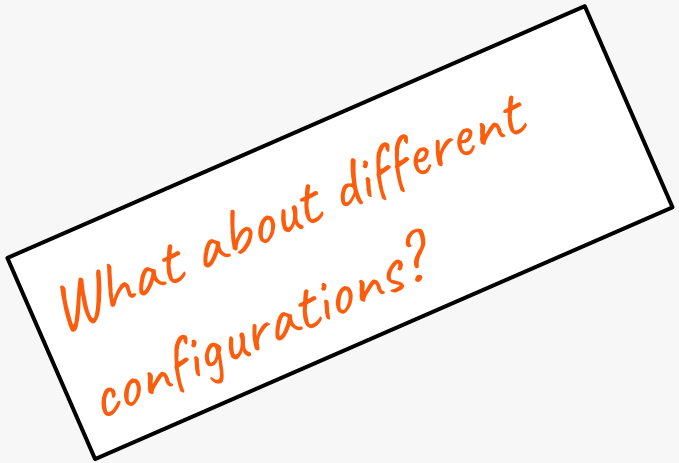


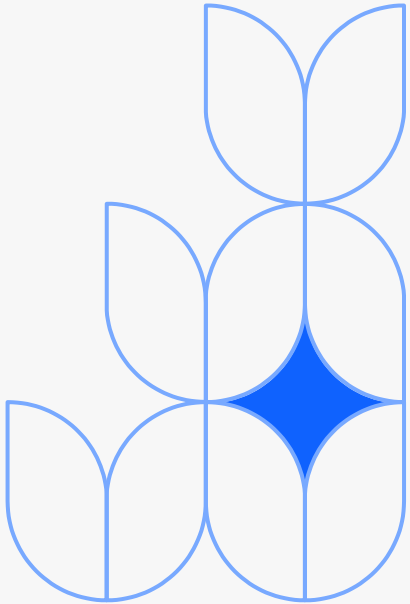
Photo by Andrea De Santis on Unsplash

Encountering obstacles



Encountering obstacles

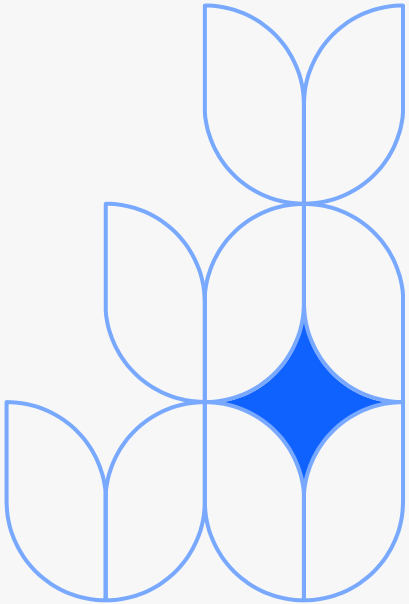




Encountering obstacles

What to do with old installations (brown field)?

What about different configurations?

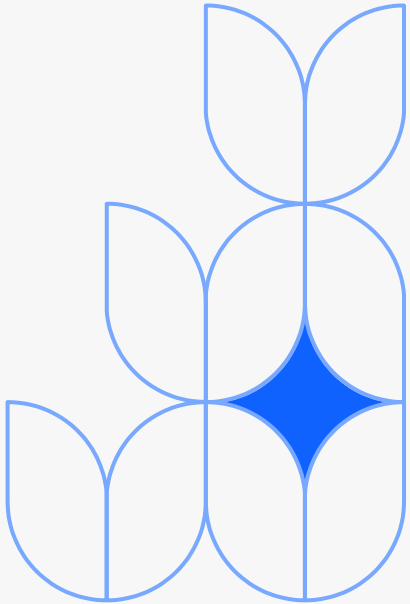


Encountering obstacles

What to do with old installations (brown field)?

Which indices to use? Operate vs Tasklist

What about different configurations?



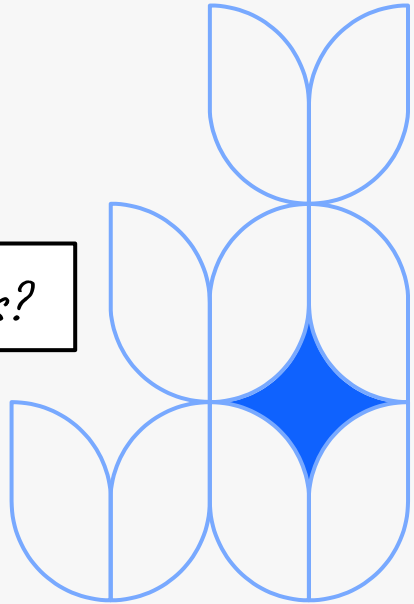
Encountering obstacles

What to do with old installations (brown field)?

Which indices to use? Operate vs Tasklist

What about different configurations?

What about custom index prefixes?



Encountering obstacles

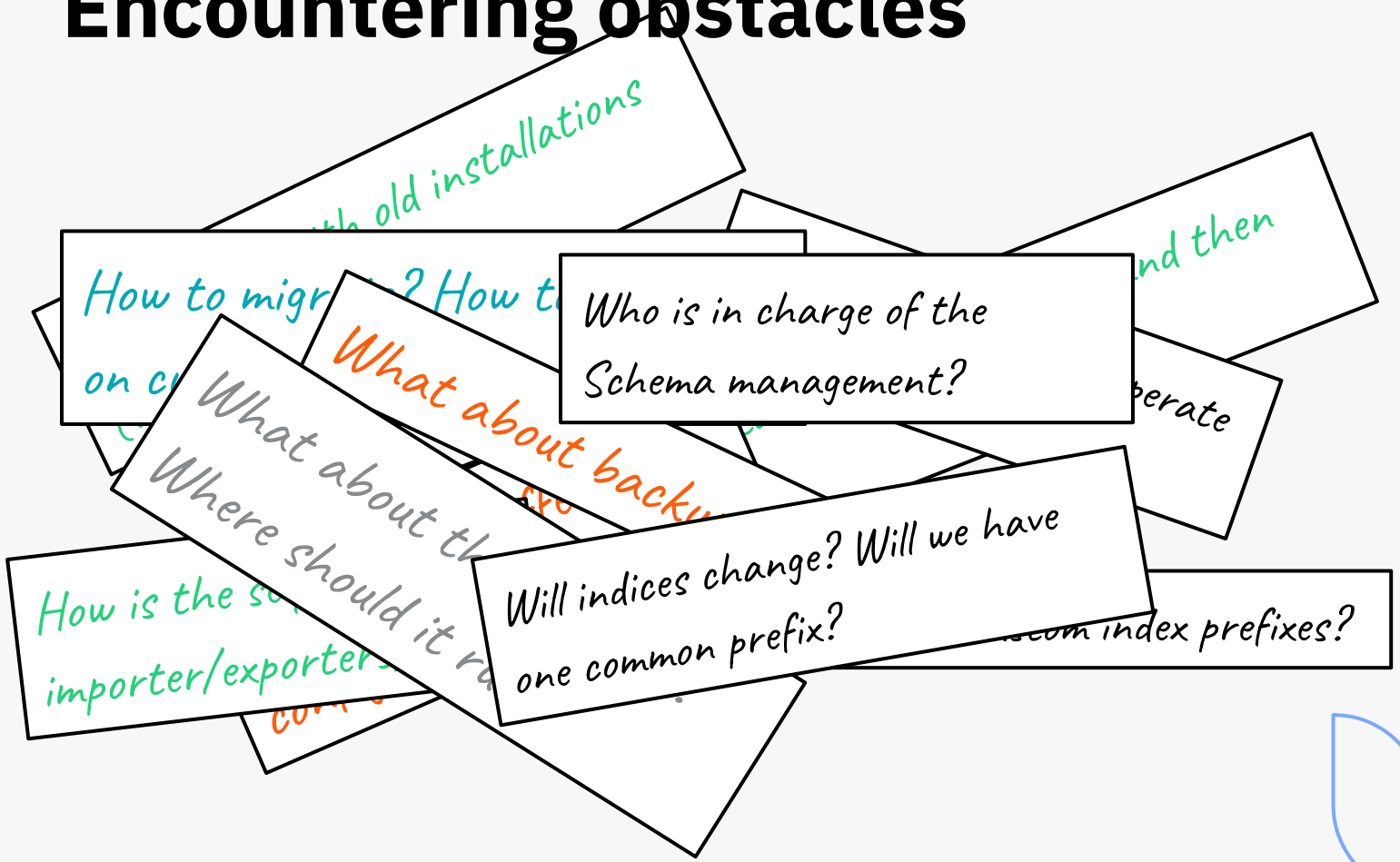


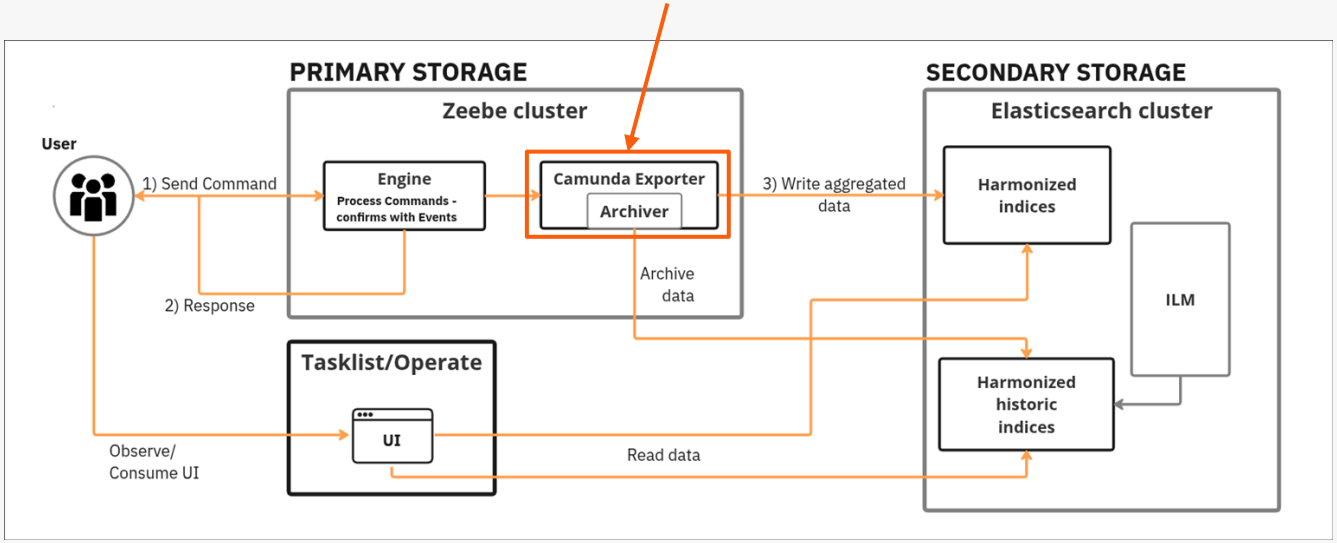
Photo by Frankie Cordoba on Unsplash

Challenge(s) handling > Implement

One exporter to rule them all

Photo by D A V I D S O N L U N A on Unsplash

One exporter to rule them all



Brownfield

Software engineering is not hard because we have to create new things.

Brownfield

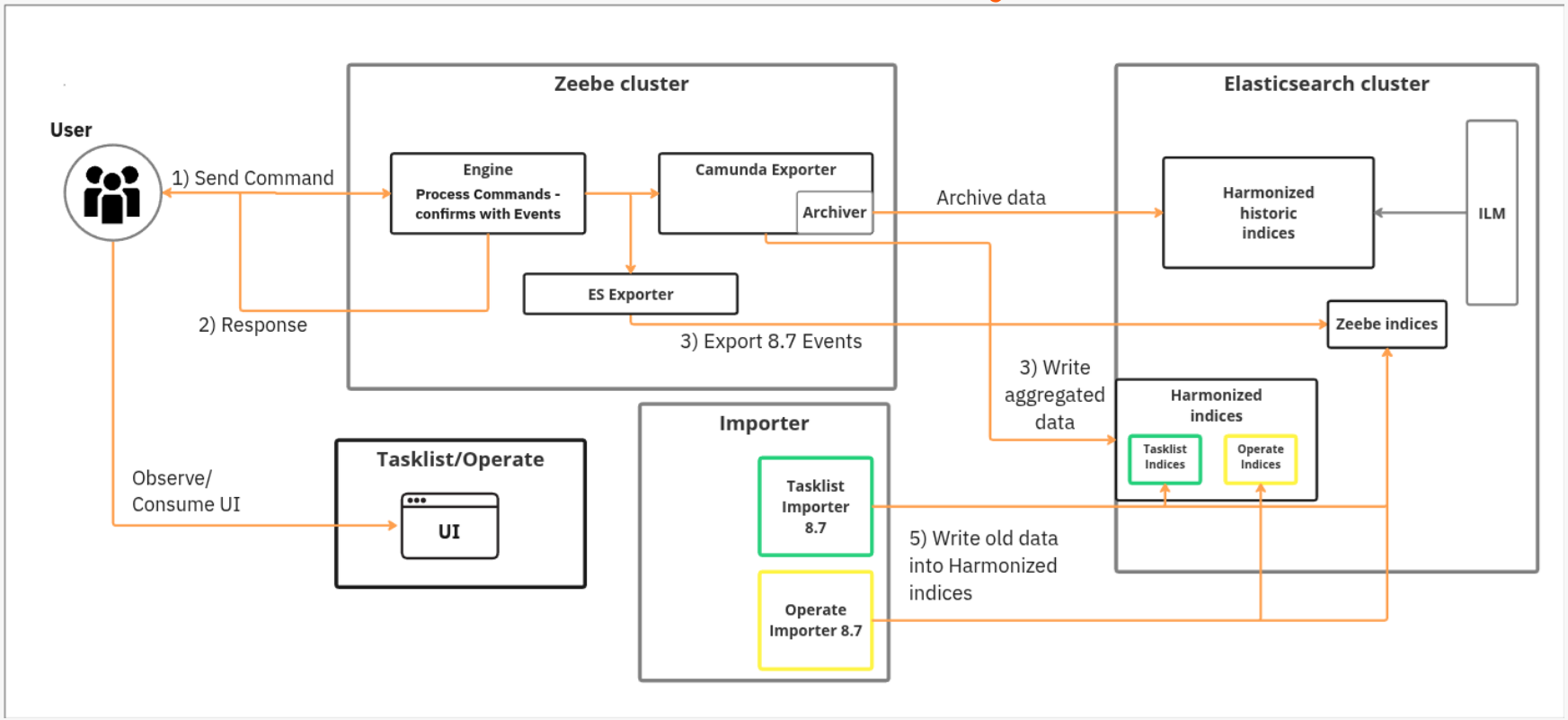
Software engineering is not hard because we have to create new things.

It is hard because we have to maintain old products and versions.

Brownfield

New Architecture (simplified)

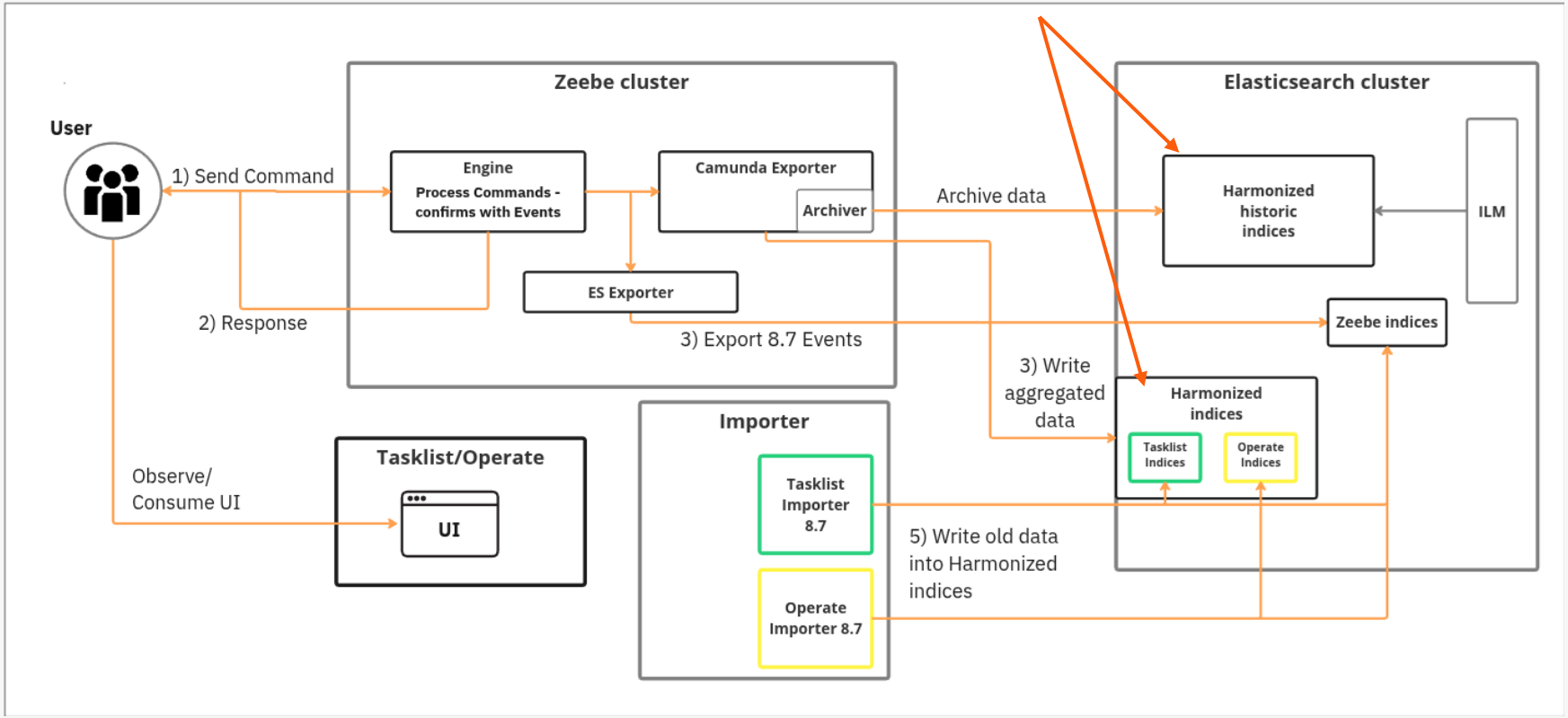
We covered you



Brownfield

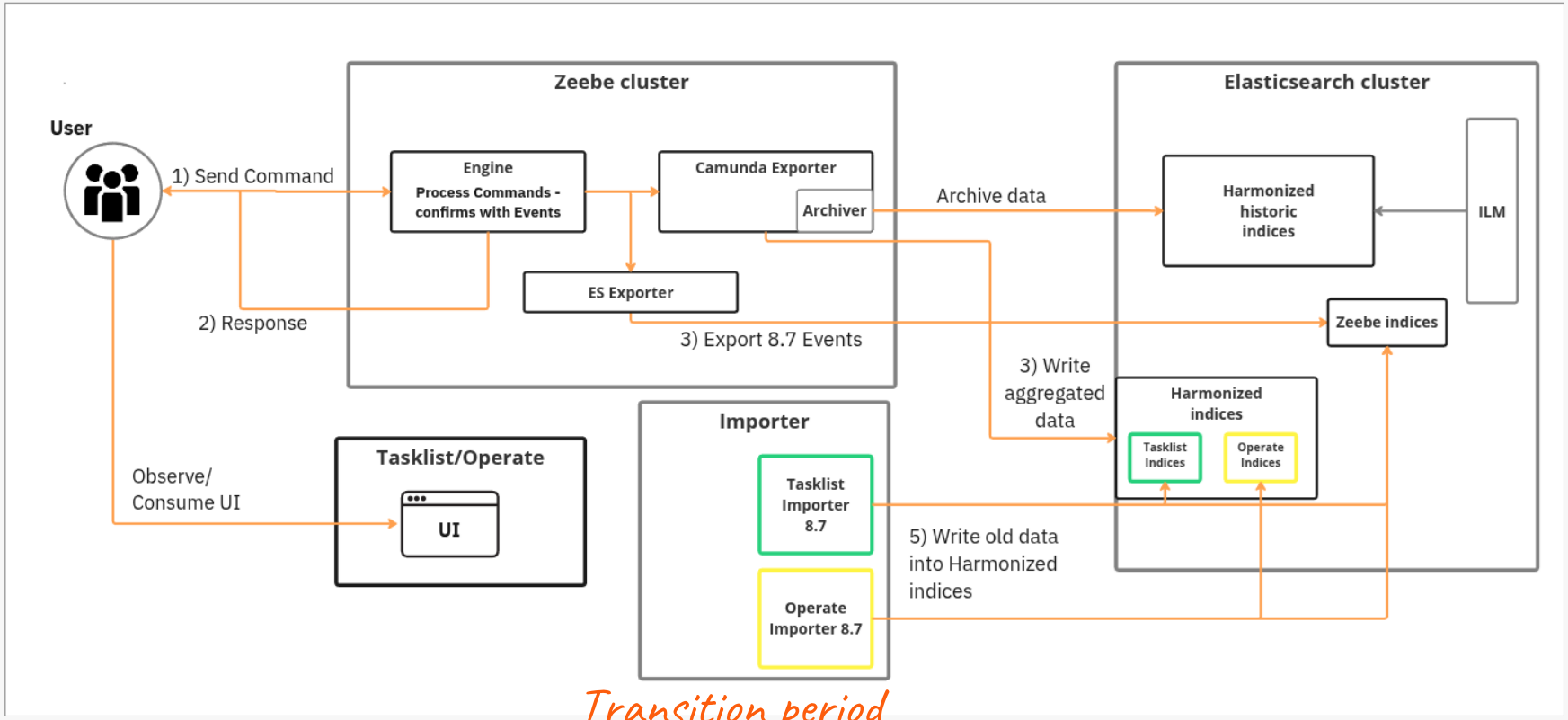
New Architecture (simplified)

No manual data migration



Brownfield

New Architecture (simplified)



Brownfield

Photo by Markus Winkler on Unsplash

For more details,
please check
our upcoming update guide.

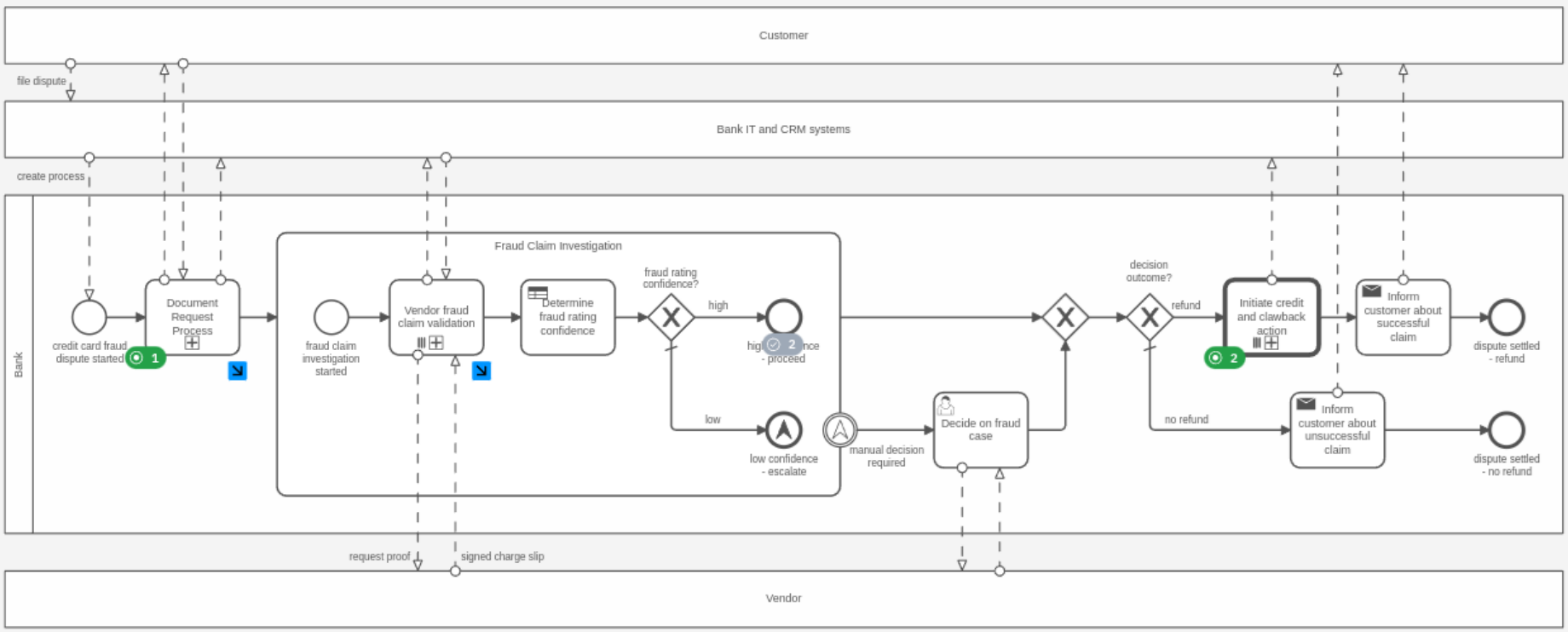
CAMUNDA CON 2025 AMSTERDAM

We are here now

Load testing

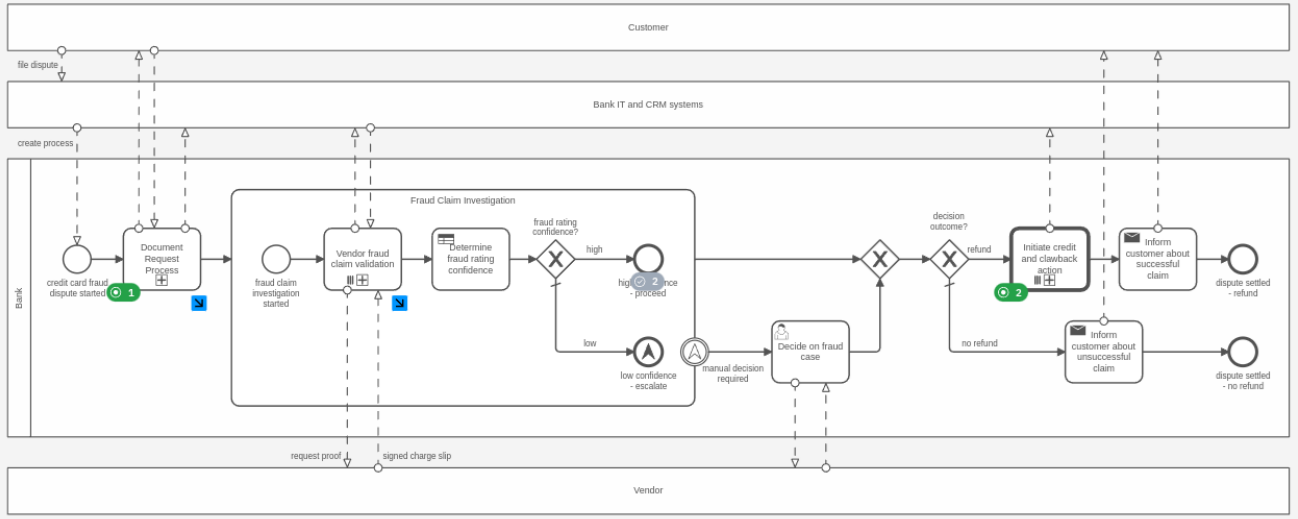
Photo by Eric Prouzet on Unsplash

Load testing



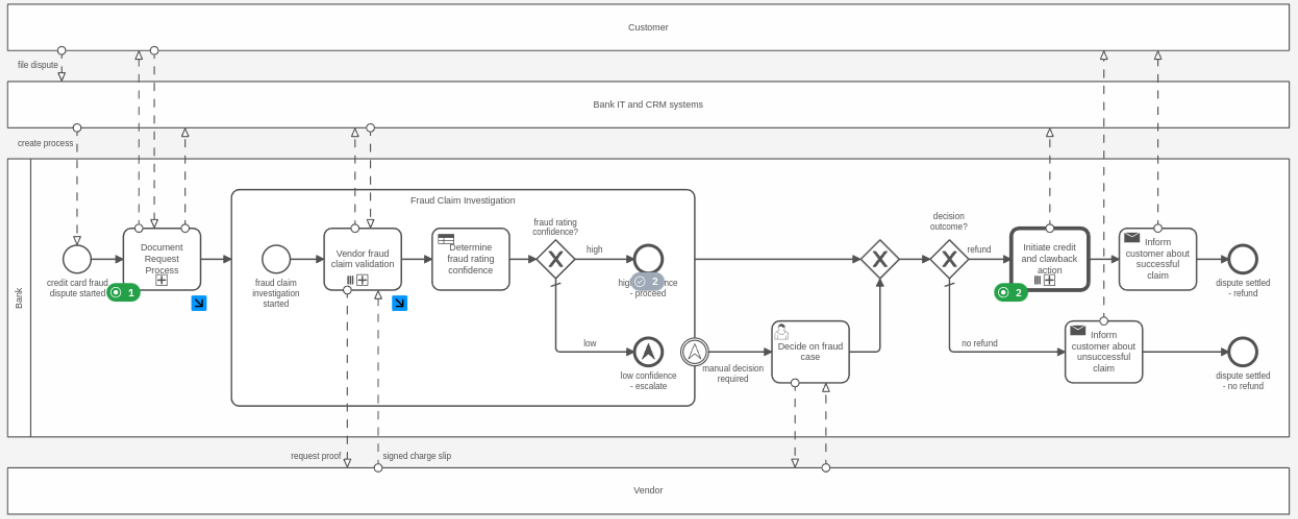
Challenge(s) handling > Evaluate

Load testing



- Load testing with real use-case
- Based on [Credit Fraud Detection blueprint]

Load testing

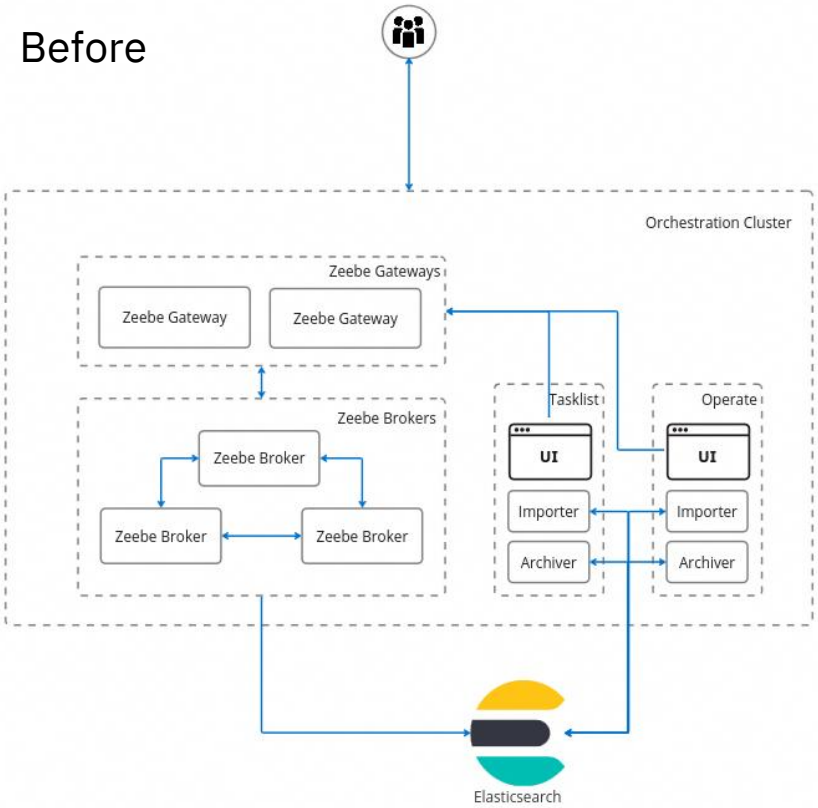


- Load testing with real use-case
- Based on [Camunda Fraud detection blueprint]
- 1 PI/s
- ~150 tasks/s

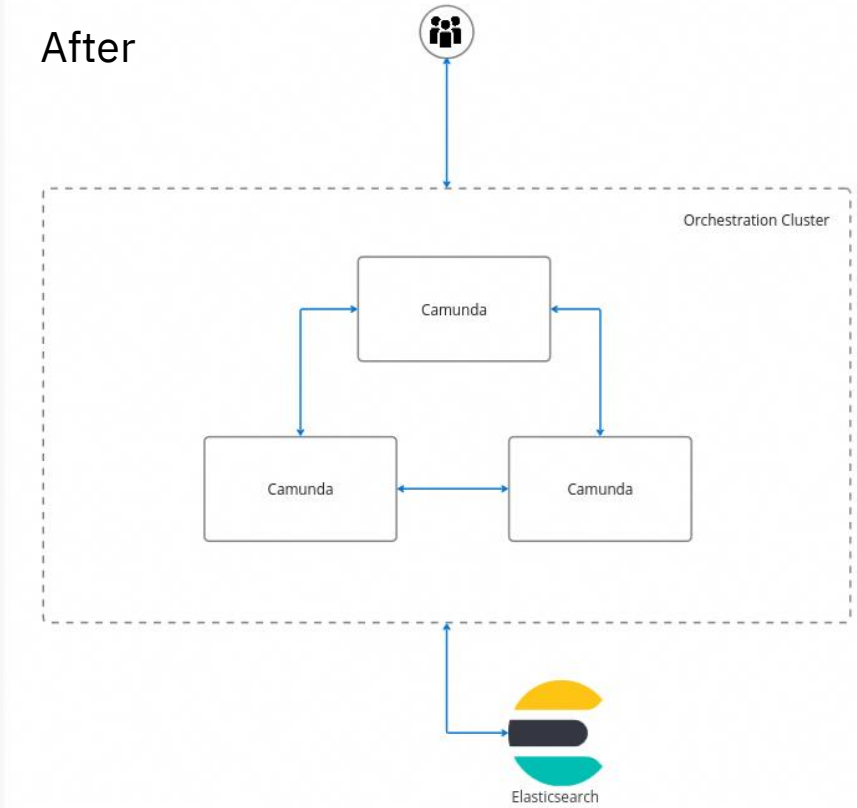
Challenge(s) handling > Evaluate

Load testing - Deployment

Before

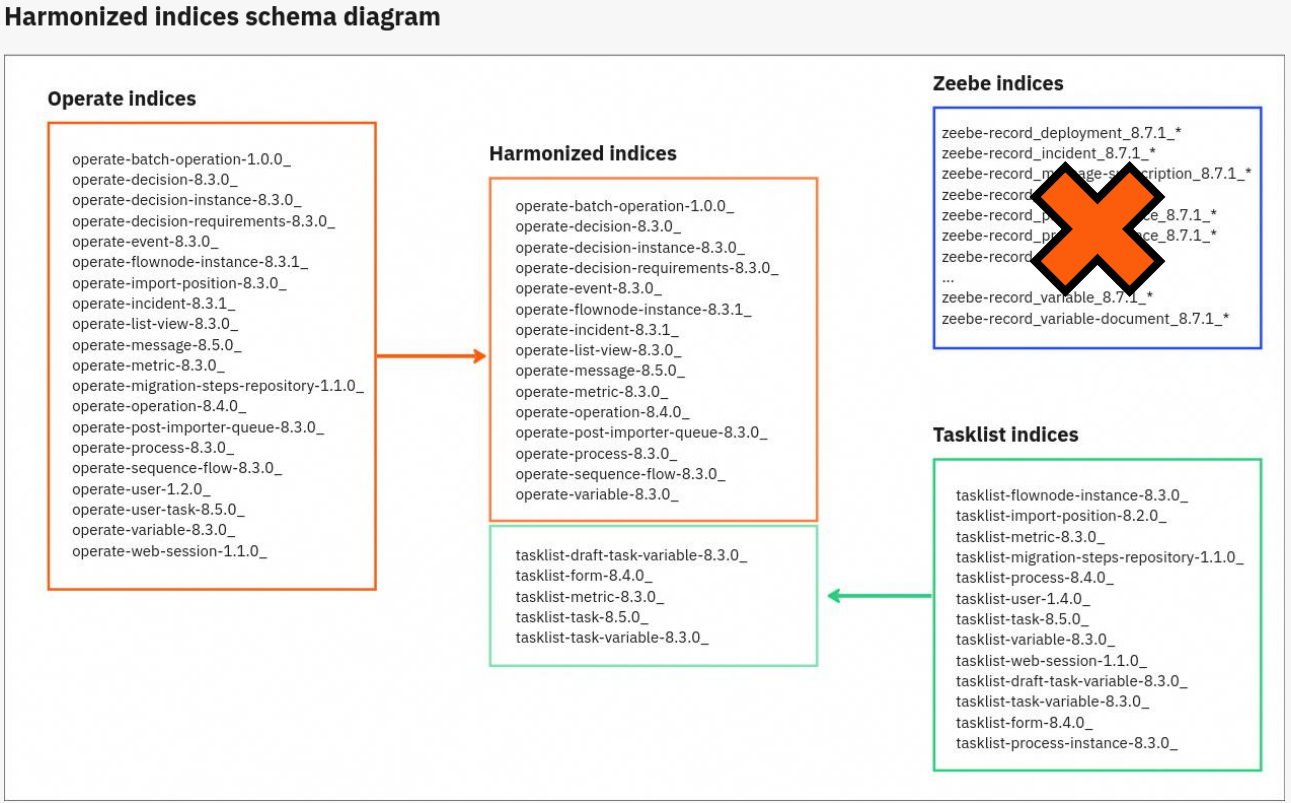


After

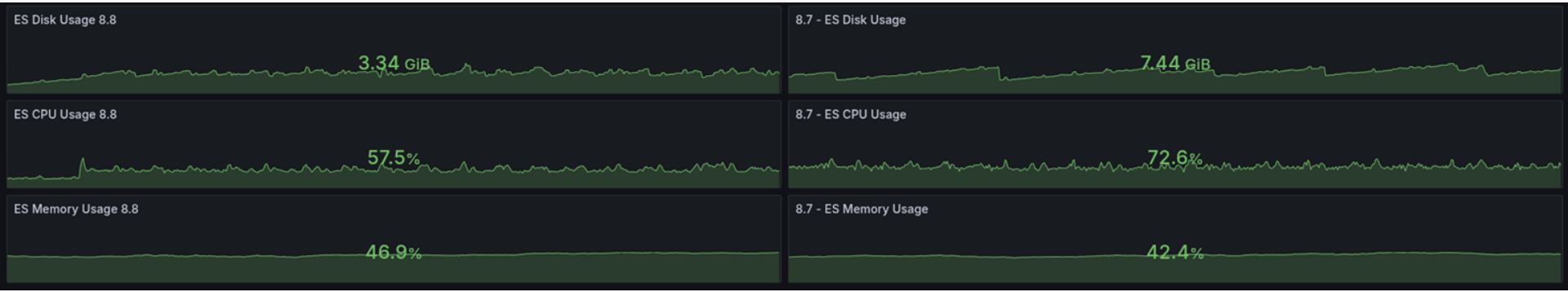


Challenge(s) handling > Evaluate

Resource consumption

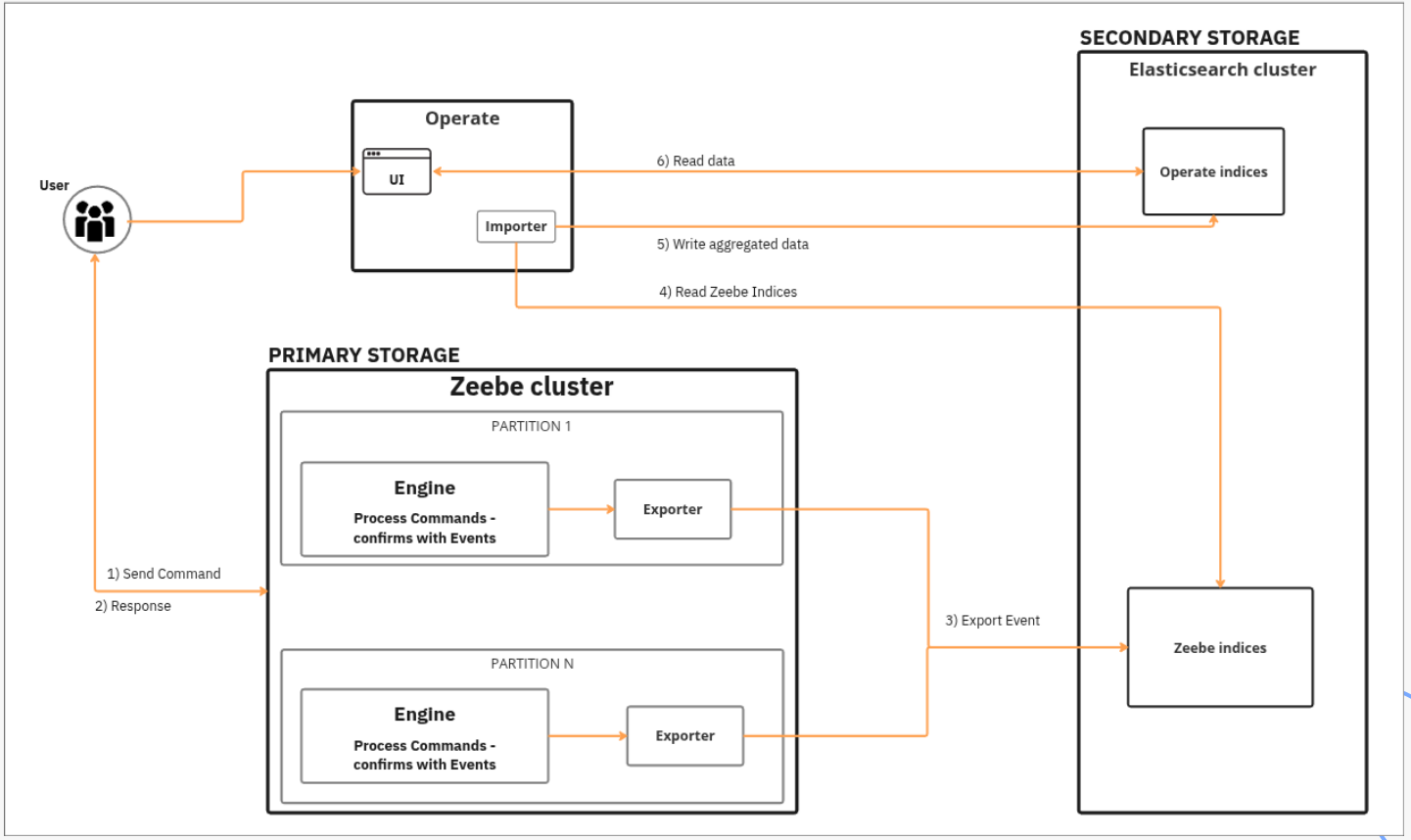


Resource consumption



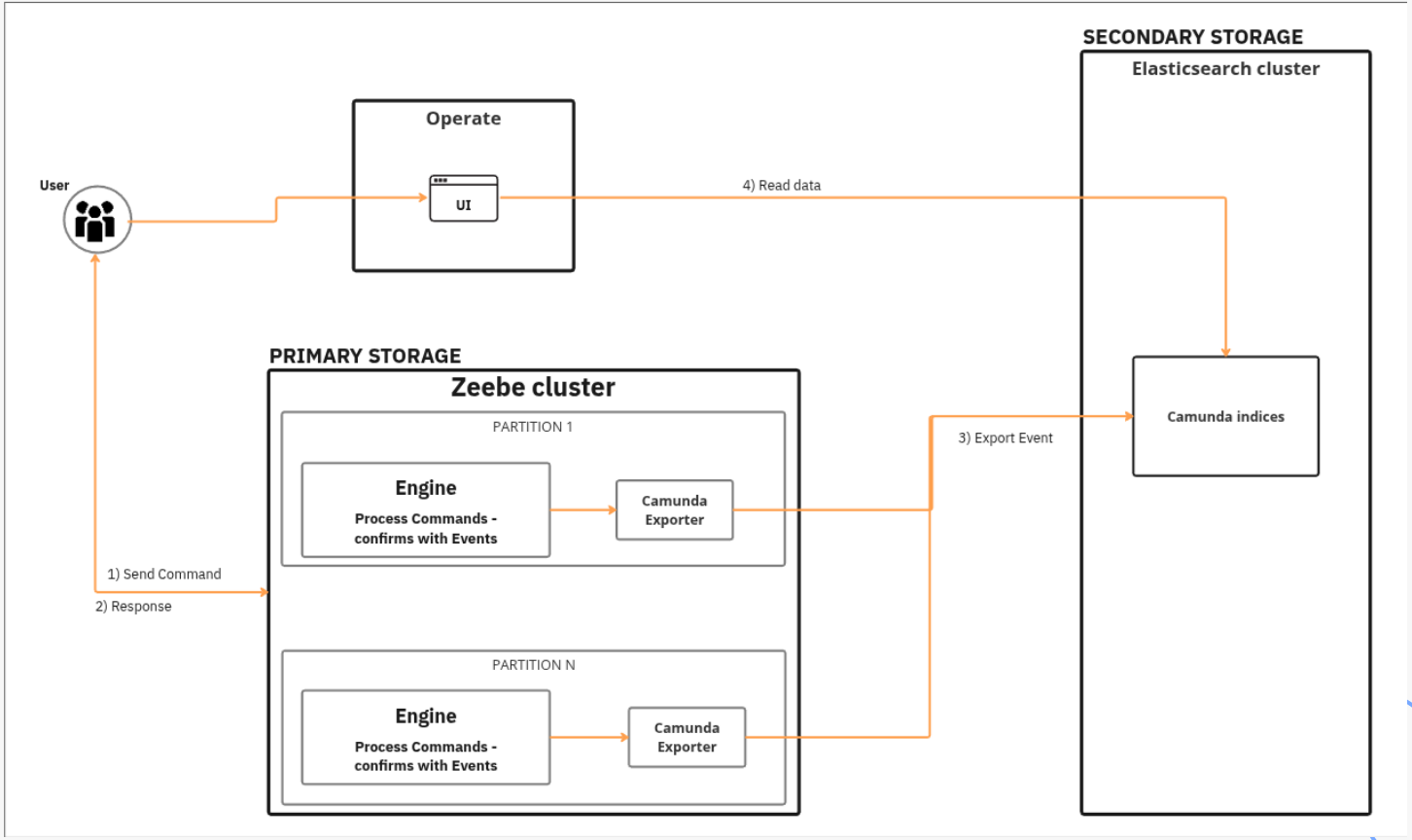
Scalability - Before

Overview - 8.7 state (simplified)



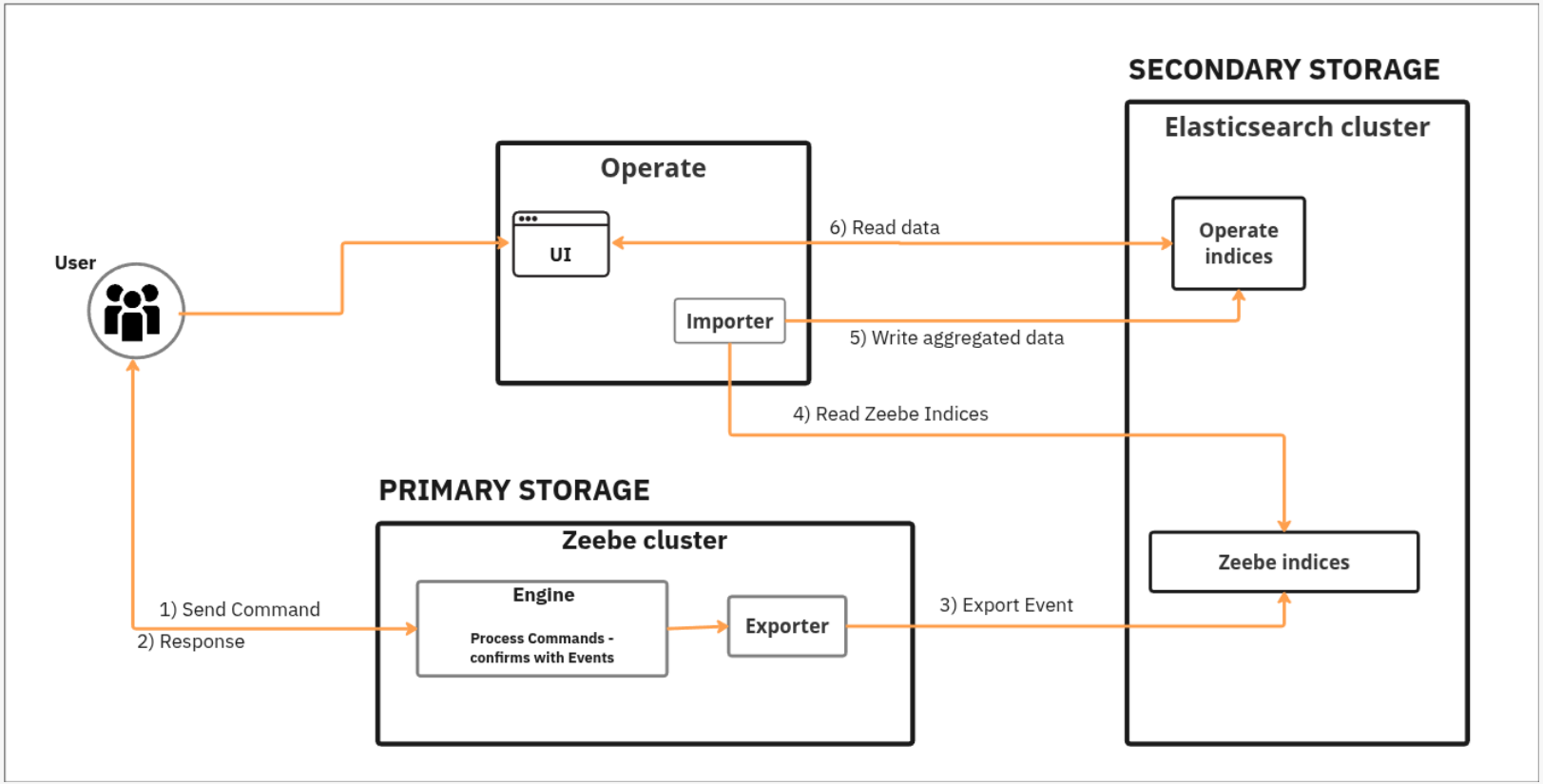
Scalability - After

Overview - 8.8 state (simplified)



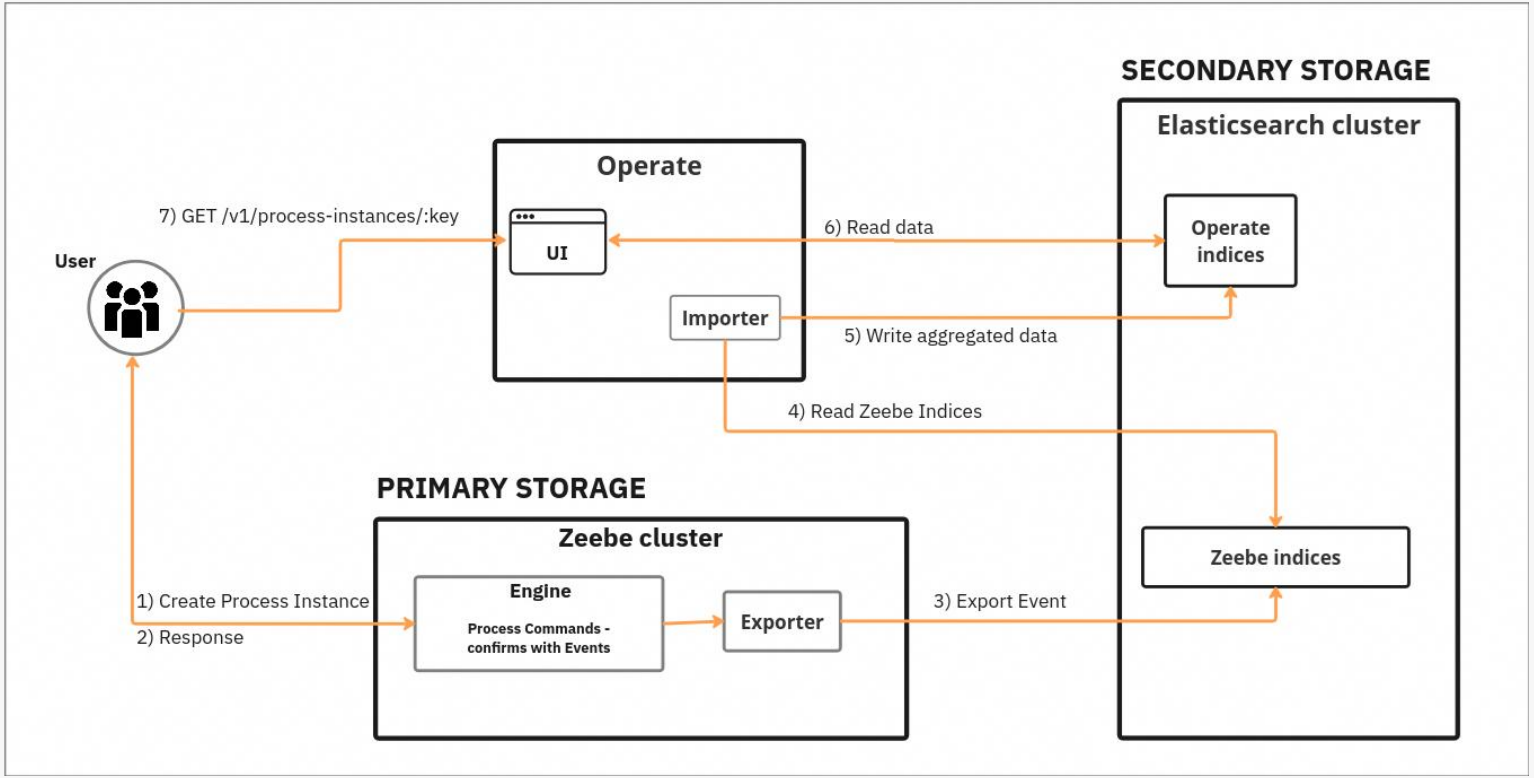
Performance - Before

Overview - 8.7 state (simplified)



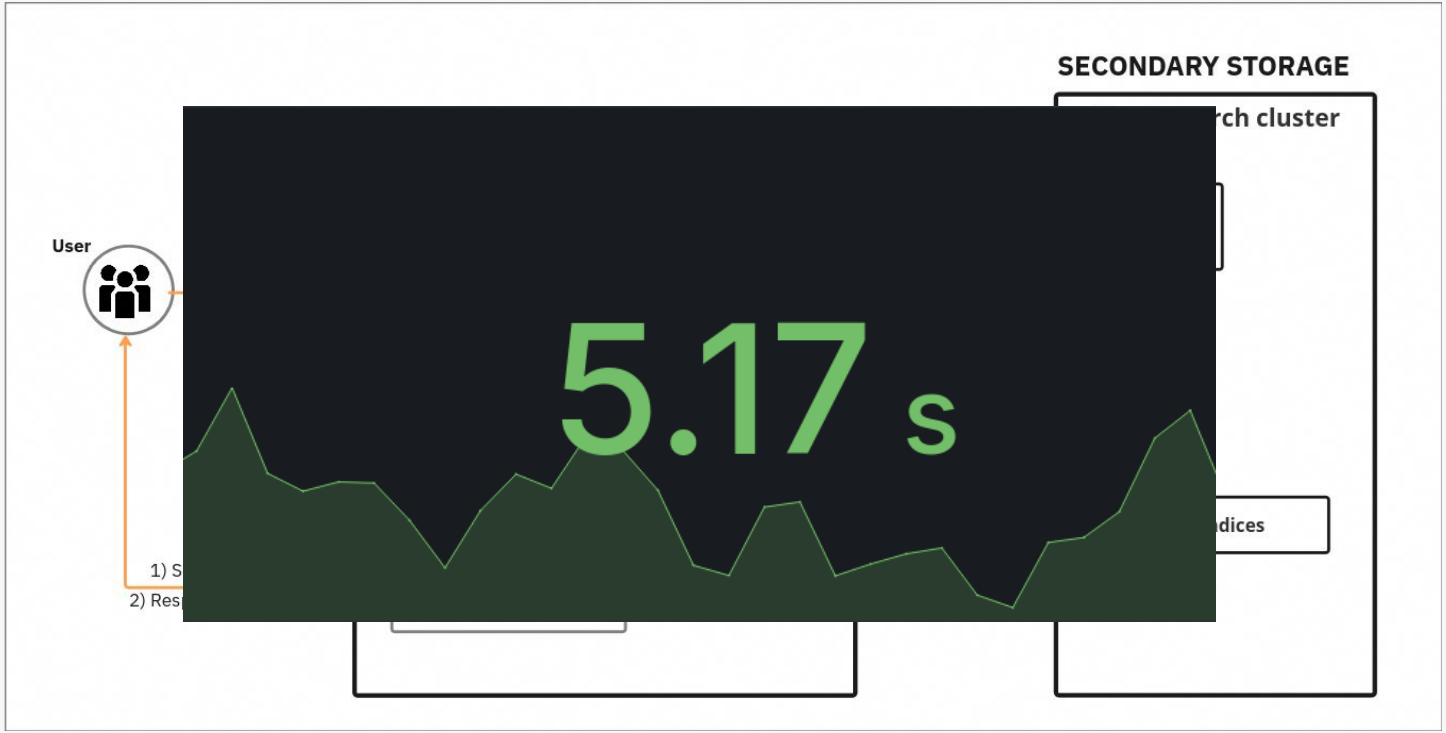
Performance - Before

Secondary storage data pipeline



Performance - Before

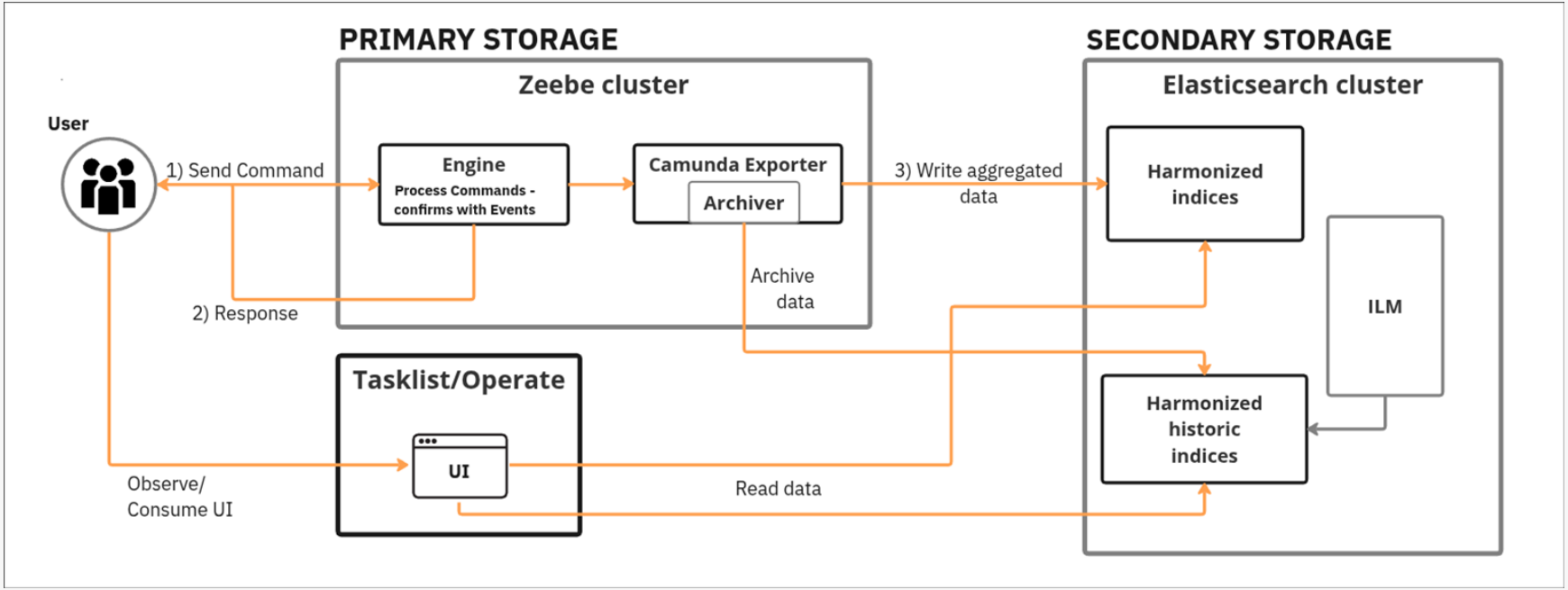
Secondary storage data pipeline



~5s on average from exported until it is visible by the API

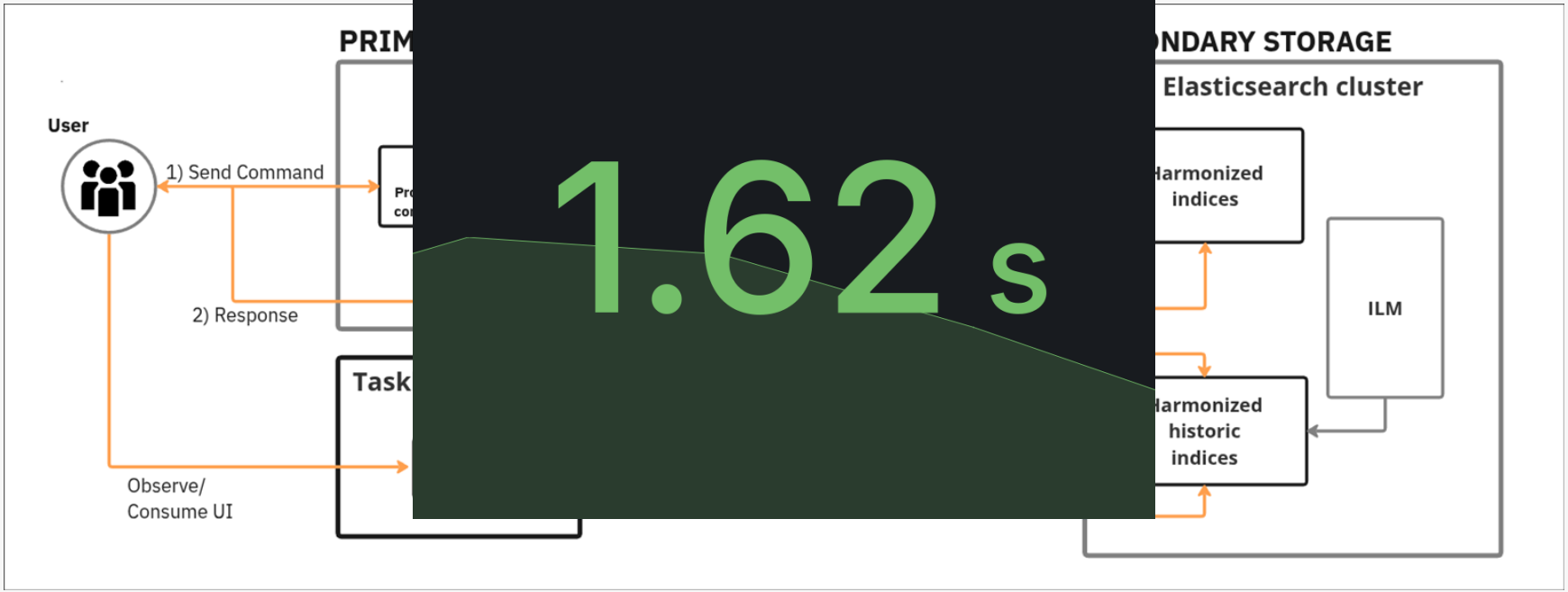
Challenge(s) handling > Evaluate

Performance - After



Challenge(s) handling > Evaluate

Performance - After

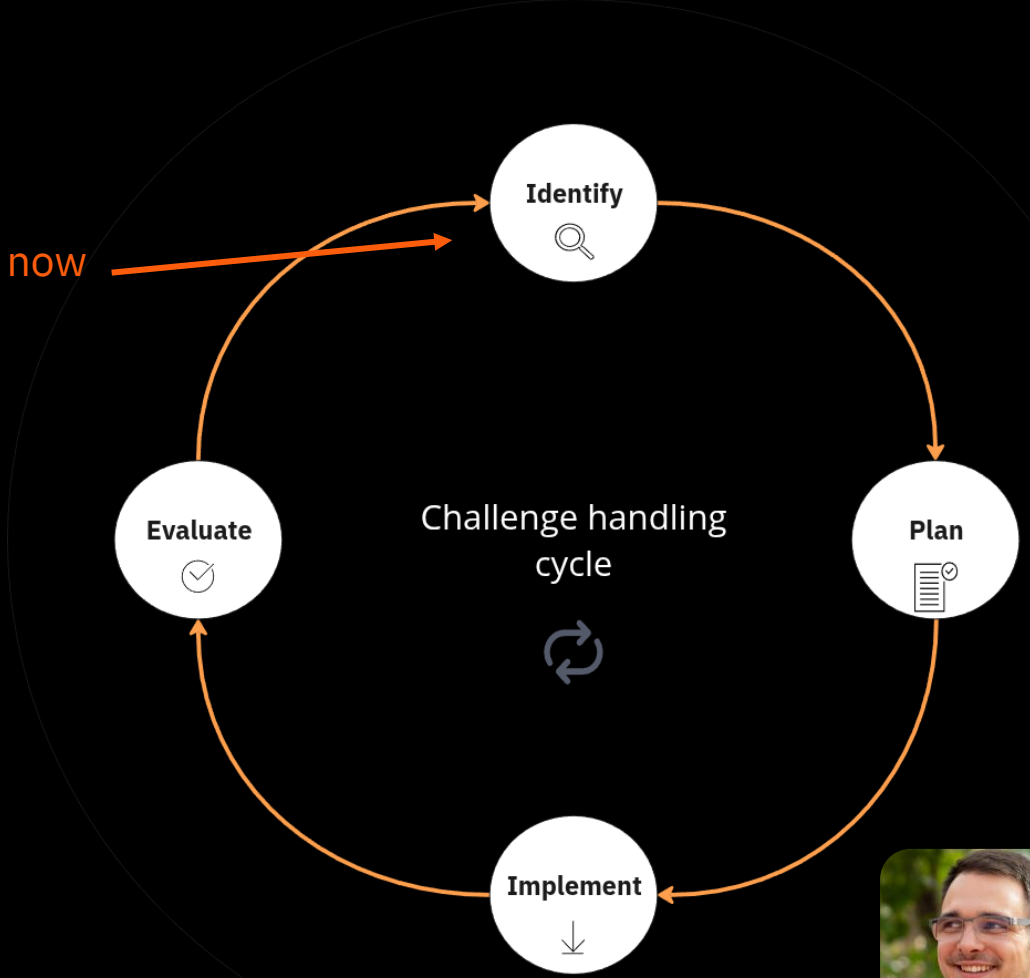


Challenge(s) handling > Evaluate

Performance - After

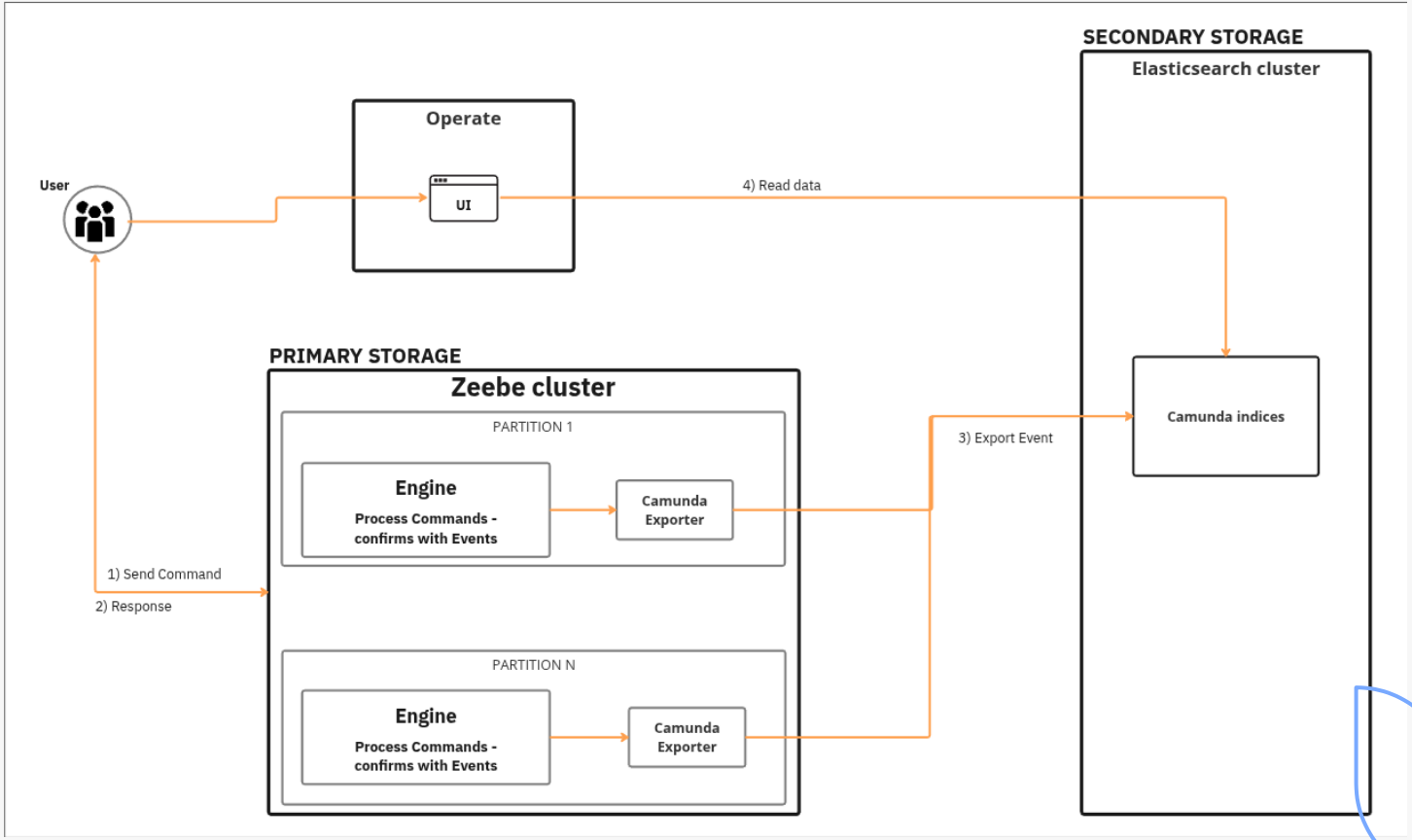
CAMUNDA CON 2025 AMSTERDAM

We are here now



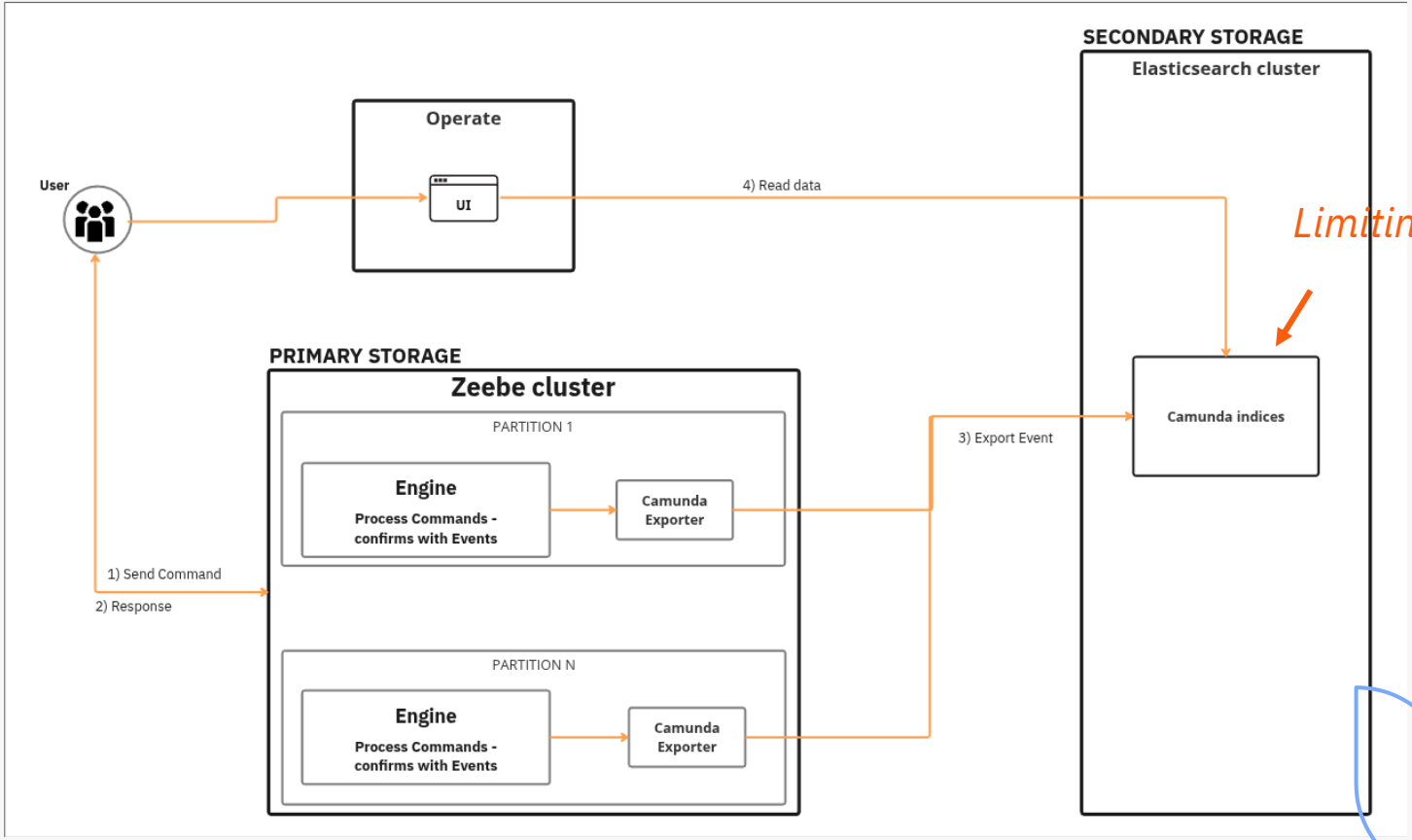
What’s next

Overview - 8.8 state (simplified)



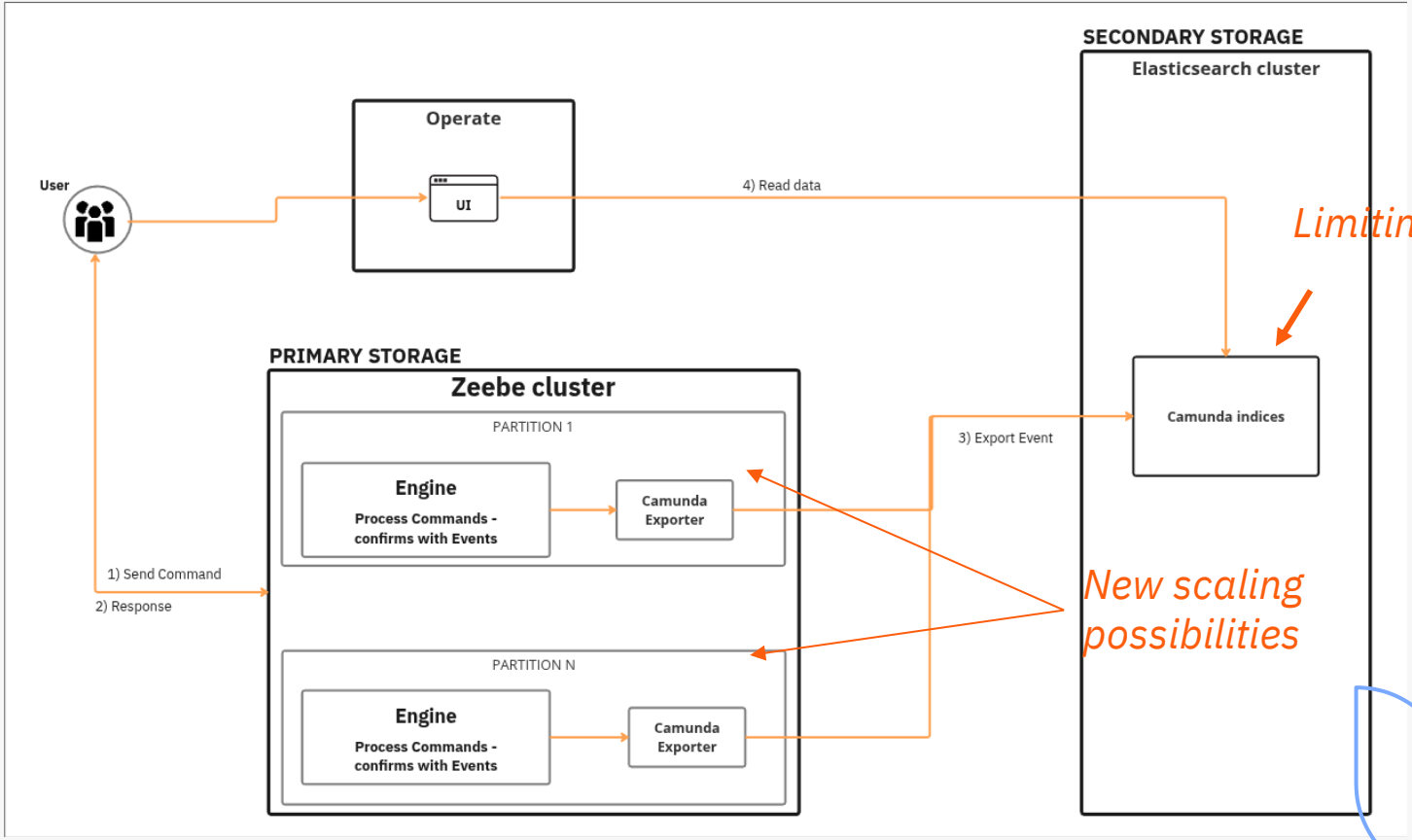
What’s next

Overview - 8.8 state (simplified)



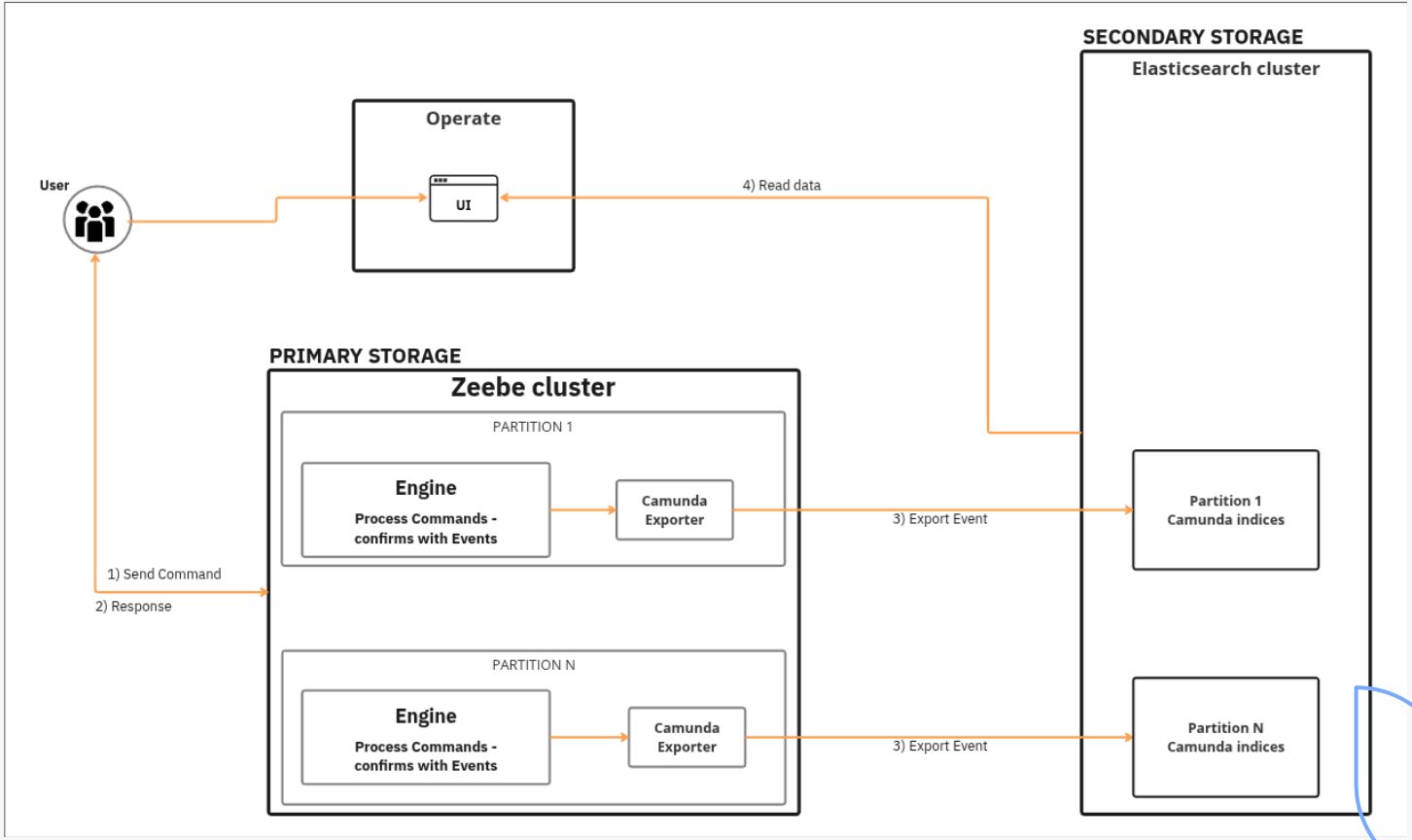
What’s next

Overview - 8.8 state (simplified)



What’s next

Overview - 8.8 state (simplified)



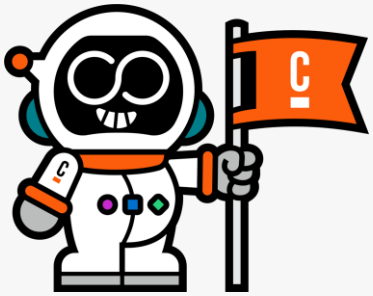
Several other new possibilities

Always improve

All of this to improve and provide a kick-ass user experience;

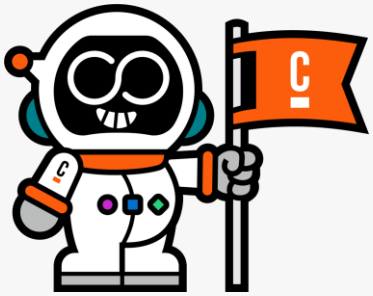
and a product you can rely on.

Team



- Thorben Lindhauer
- Svetlana Dorokhova
- Deepthi Akkoorath
- Mustafa Dagher
- Euro Lew
- Carlo Sana
- Panagiotis Goutis
- Rodrigo Lopes
- Marcos Vieira
- Joshua Windels
- Aleksander Dytko
- Nicolas Pepin-Perreault
- Christopher Kujawa

Team



- Thorben Lindhauer
- Svetlana Dorokhova
- Deepthi Akkoorath
- Mustafa Dagher
- Euro Lew
- Carlo Sana
- Panagiotis Goutis
- Rodrigo Lopes
- Marcos Vieira
- Joshua Windels
- Aleksander Dytko
- Nicolas Pepin-Perreault
- Christopher Kujawa

THANK YOU!

Thank You

- nicolas.pepin-perreault@camunda.com
- christopher.kujawa@camunda.com

- npepinpe
- kujawa-christopher

Zeebe Chaos Blog

Questions?