RTB HOUSE =

bigdata TECHNOLOGY SUMMIT

Real-Time Data Processing at RTB House

How we have grown 10x within 2 years

Bartosz Łoś, 2019

AGENDA

- our RTB platform

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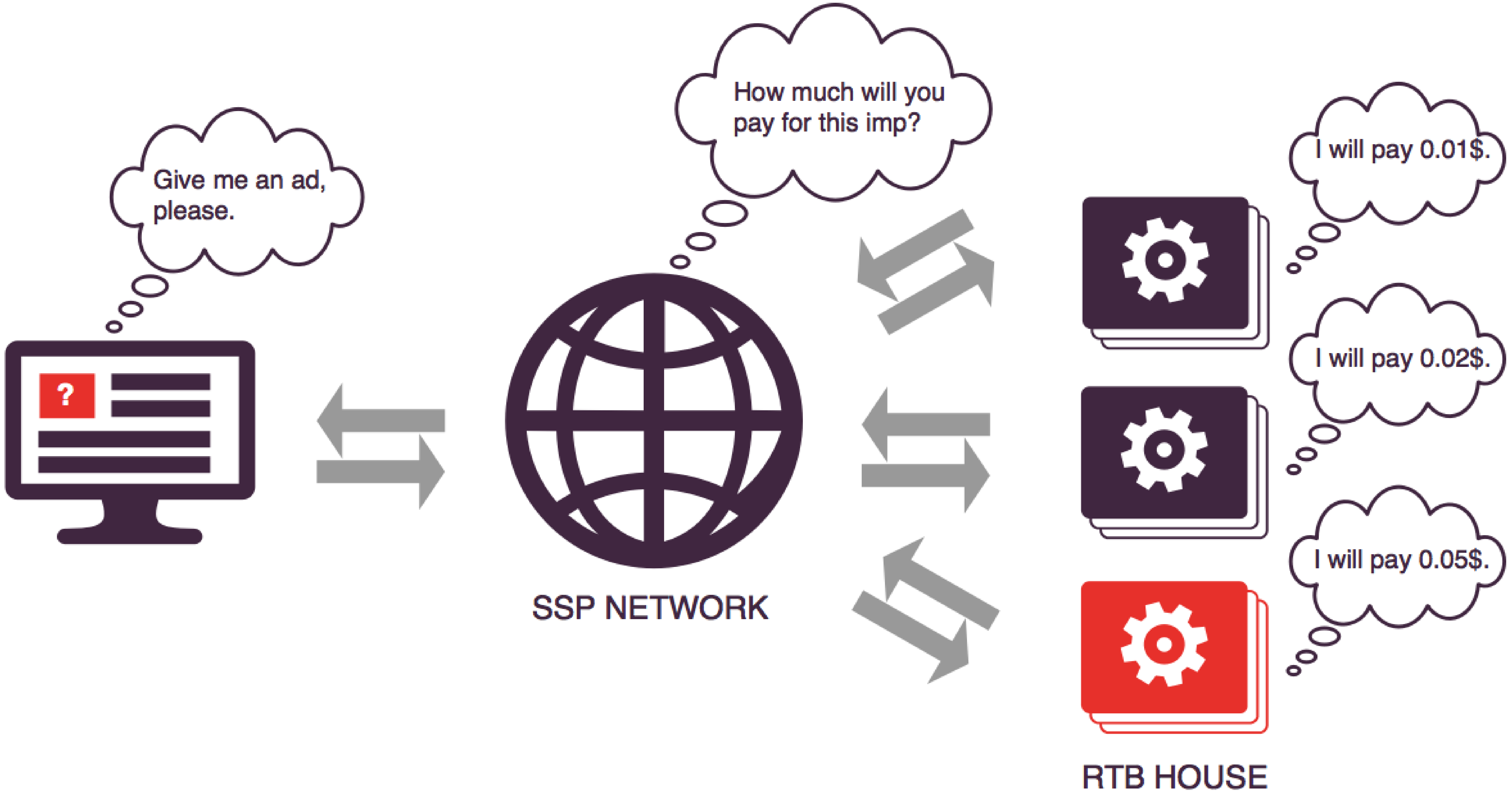
- kafka workers

OUR RTB PLATFORM

OUR RTB PLATFORM: THE CONTEXT



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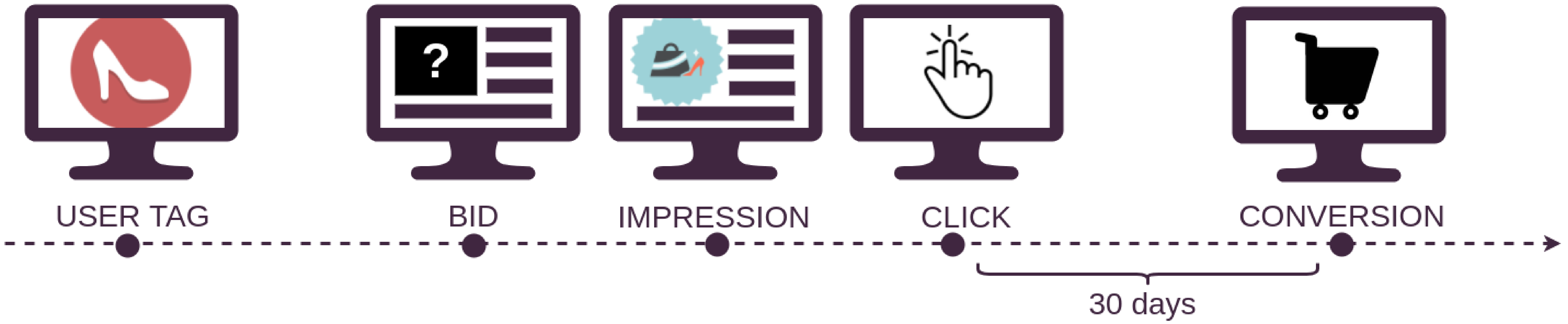
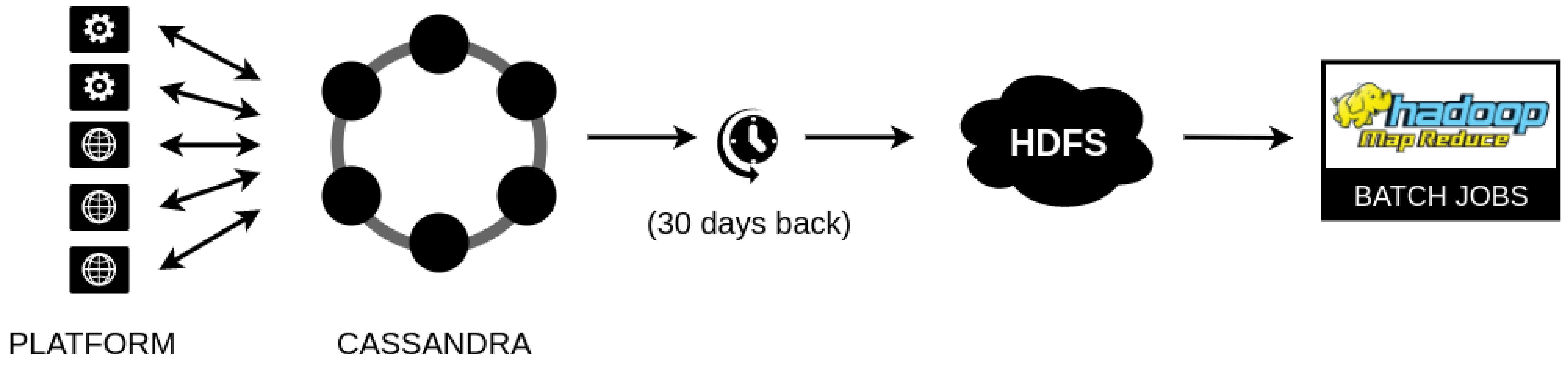
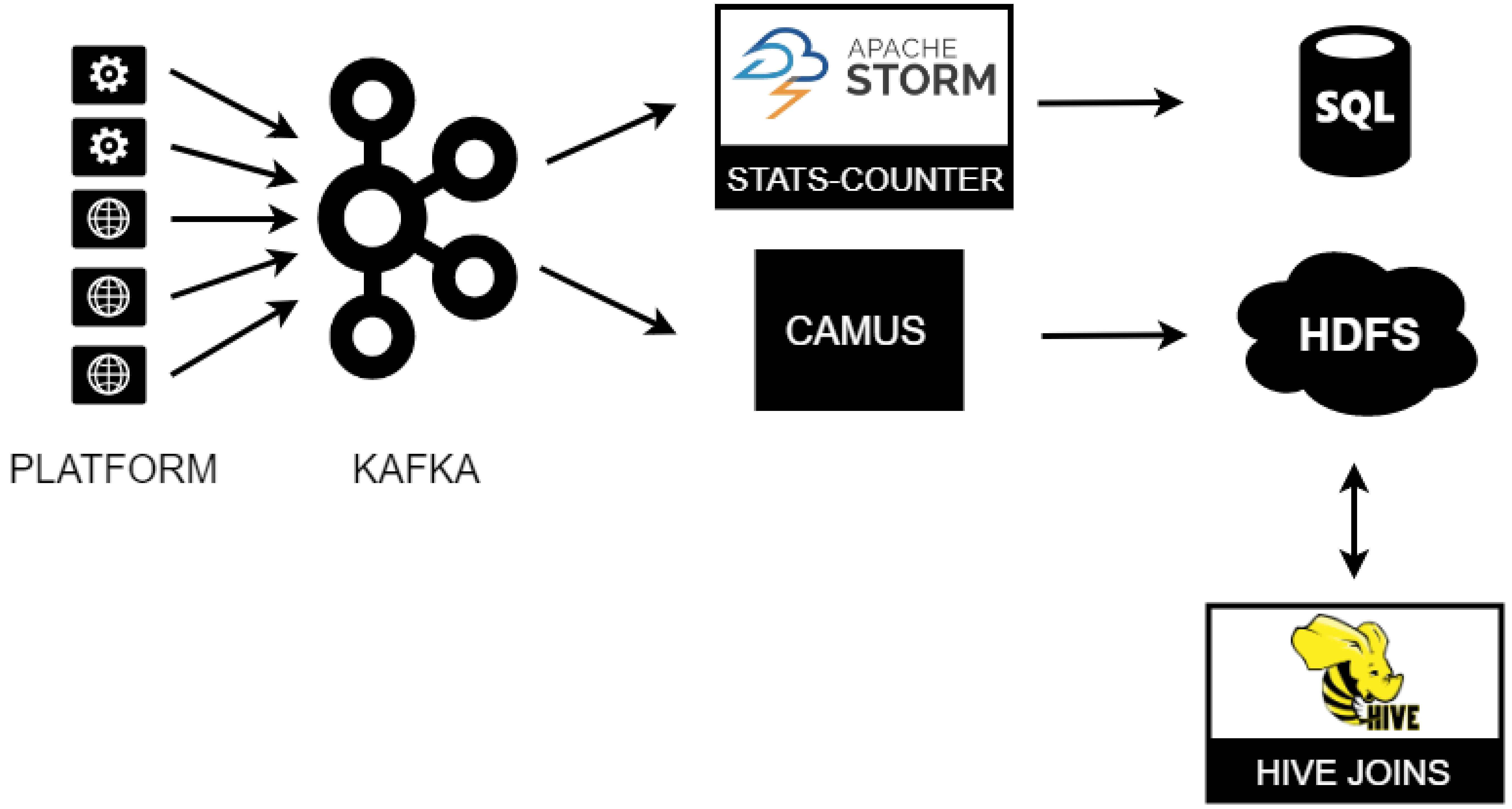


THE PREVIOUS ITERATIONS

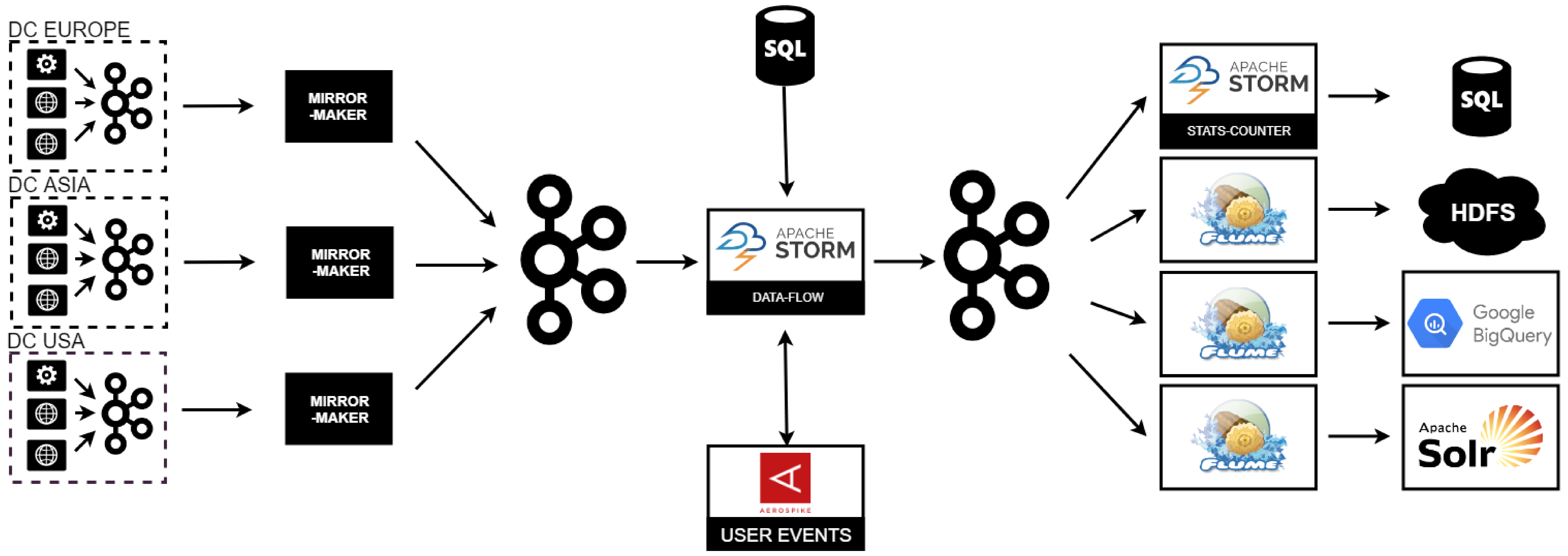
THE 1ST ITERATION: MUTABLE IMPRESSIONS



THE 2ND ITERATION: LAMBDA ARCHITECTURE



THE 3RD ITERATION: IMMUTABLE STREAMS OF EVENTS



THE FOURTH ITERATION: MULTI-DC

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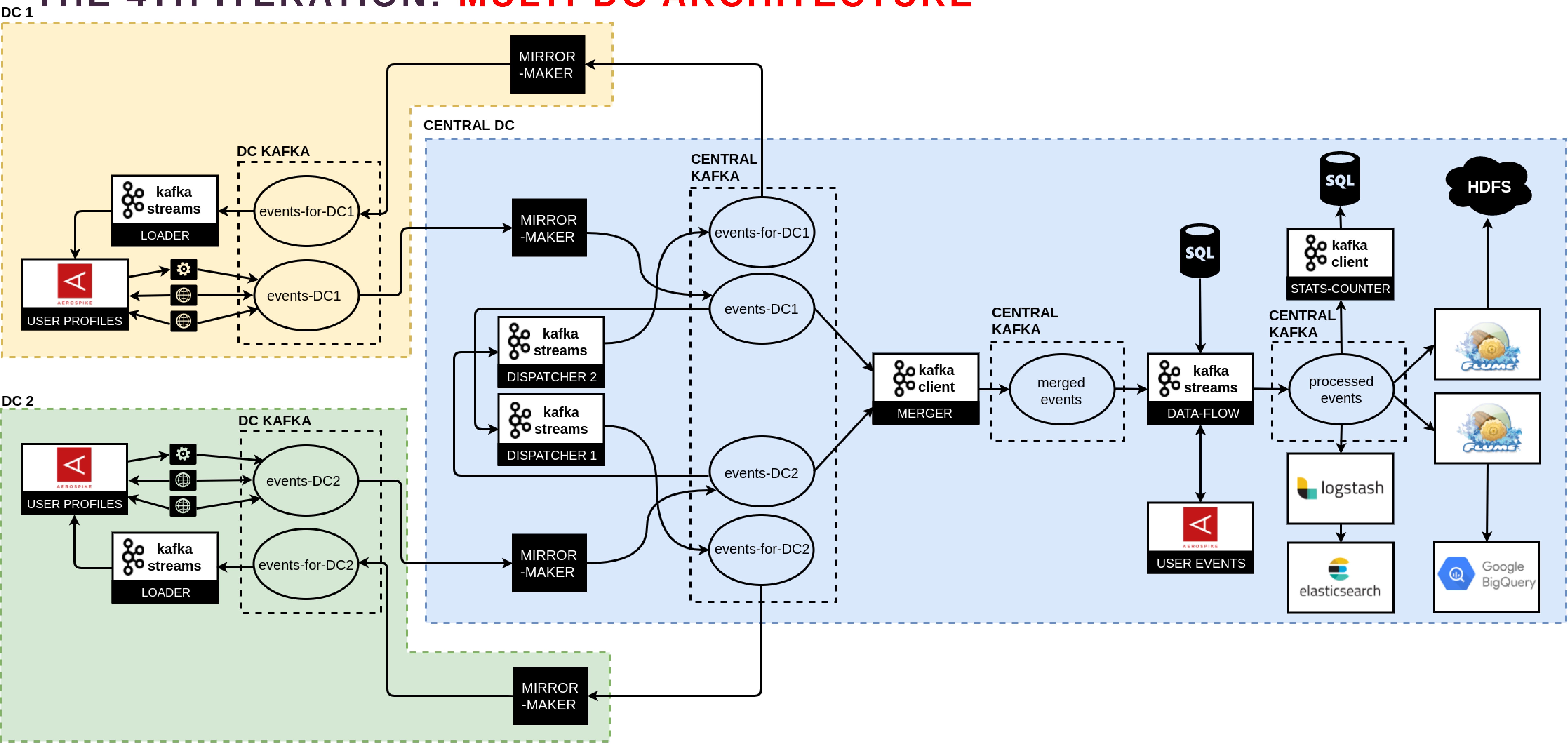
- a few better components:
  - new stats-counter, new data-flow
  - logstash
  - merger, dispatcher & loader

THE 4TH ITERATION: MULTI-DC ARCHITECTURE



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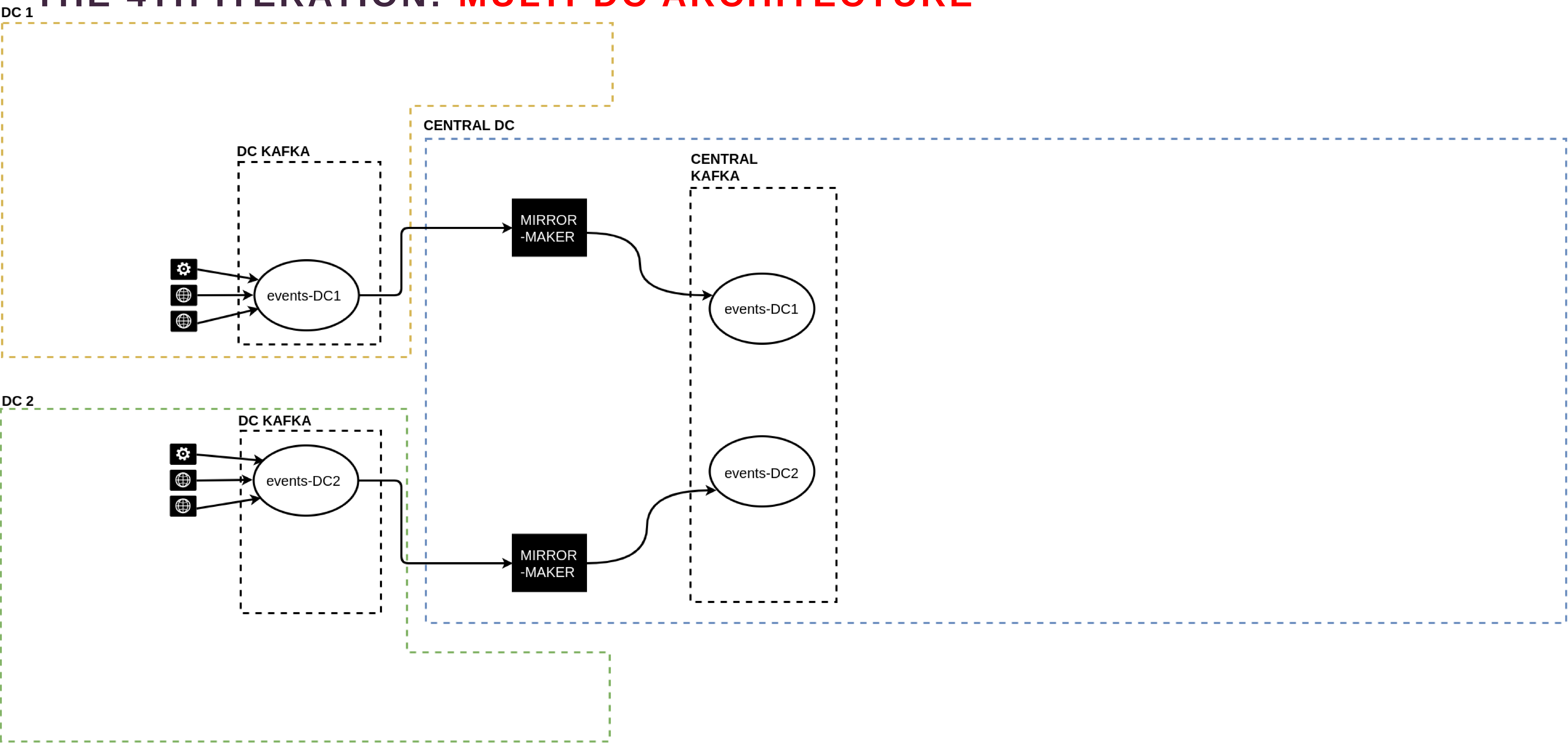

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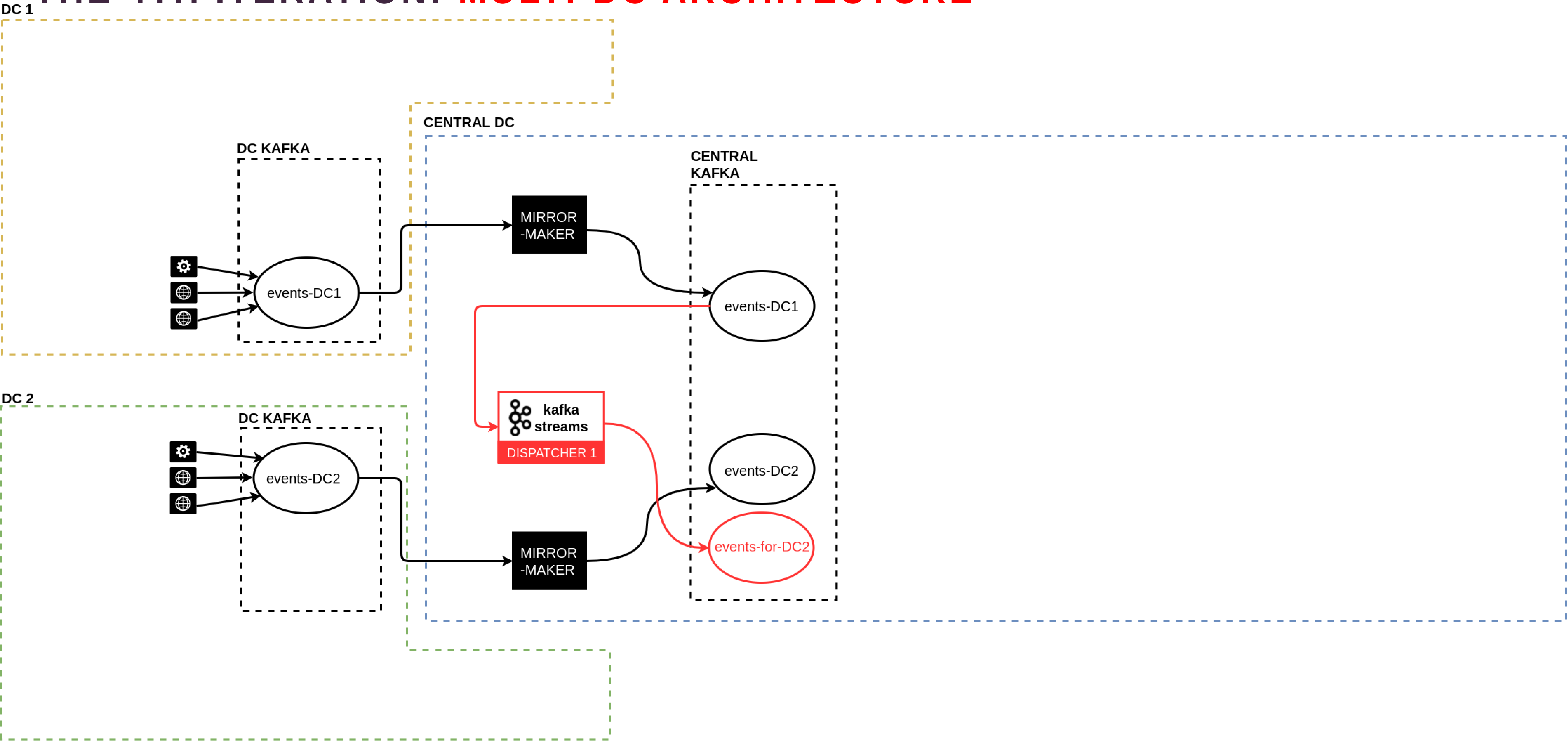

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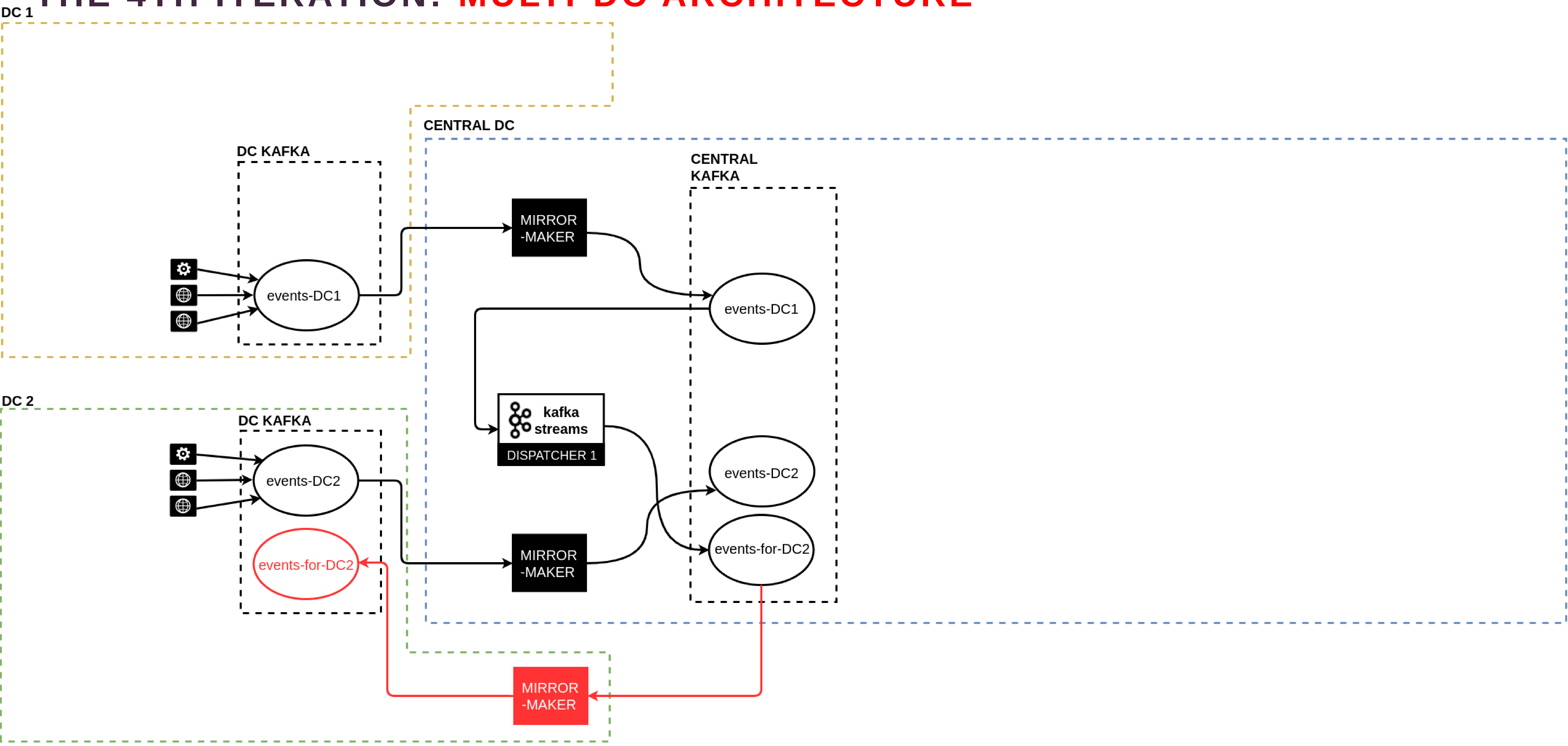

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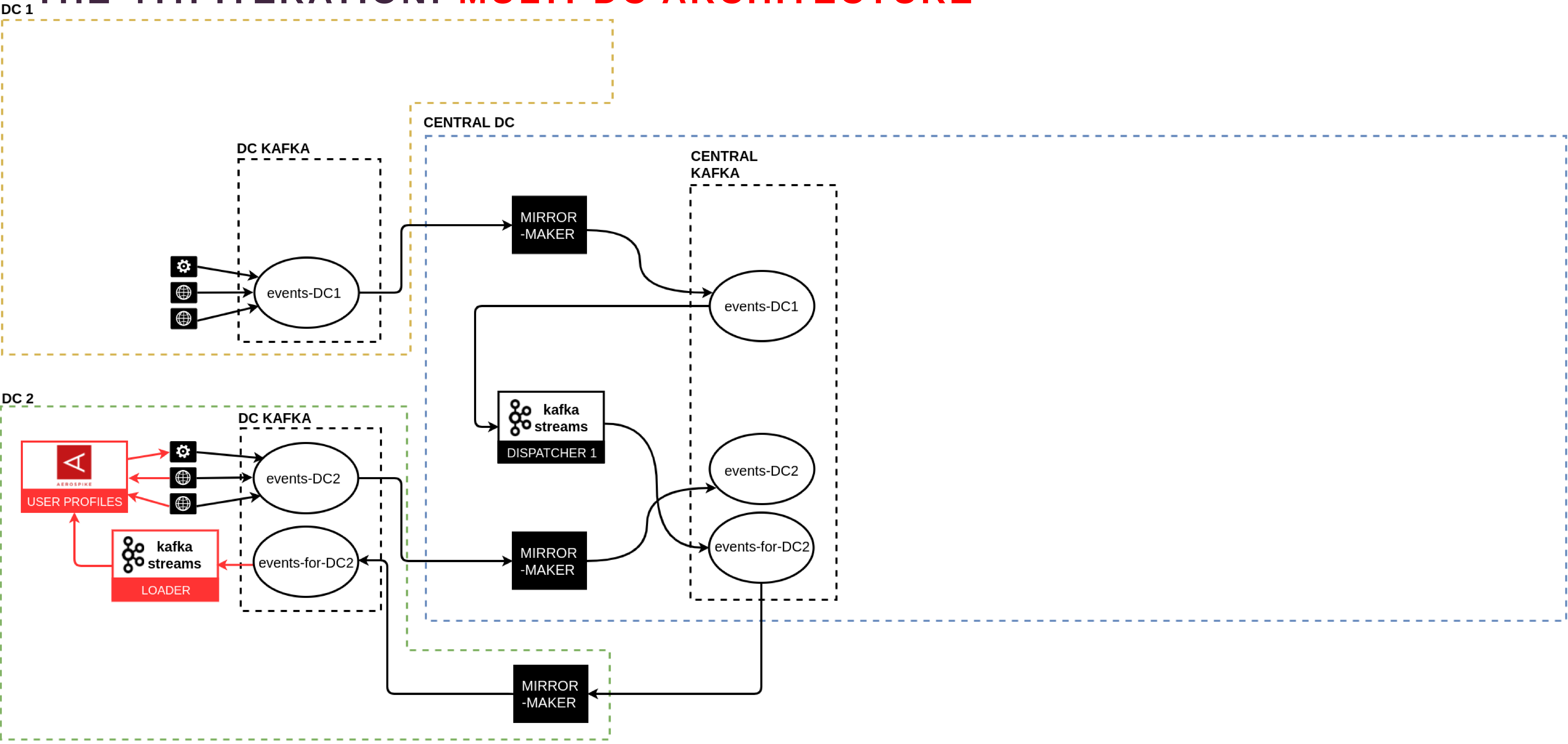

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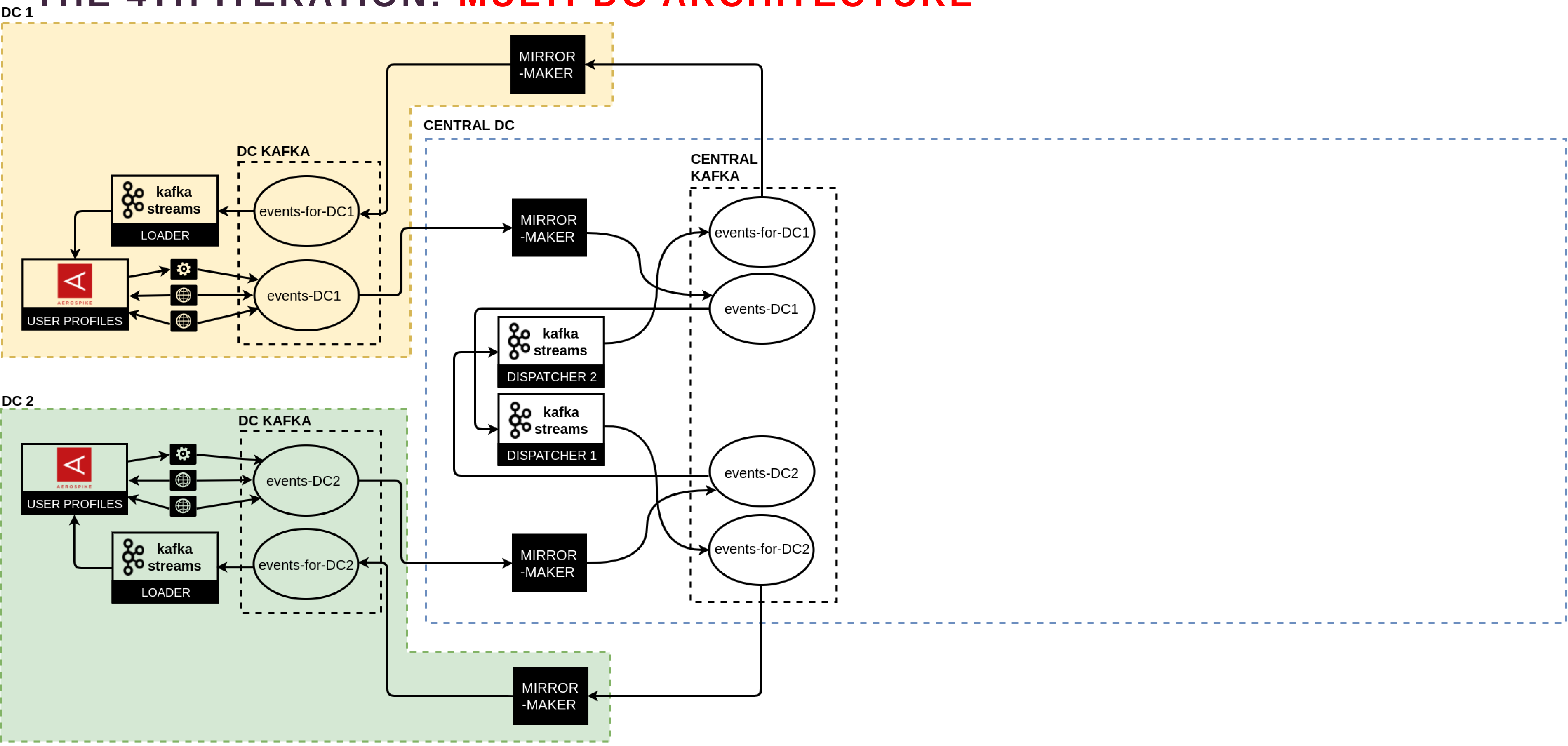

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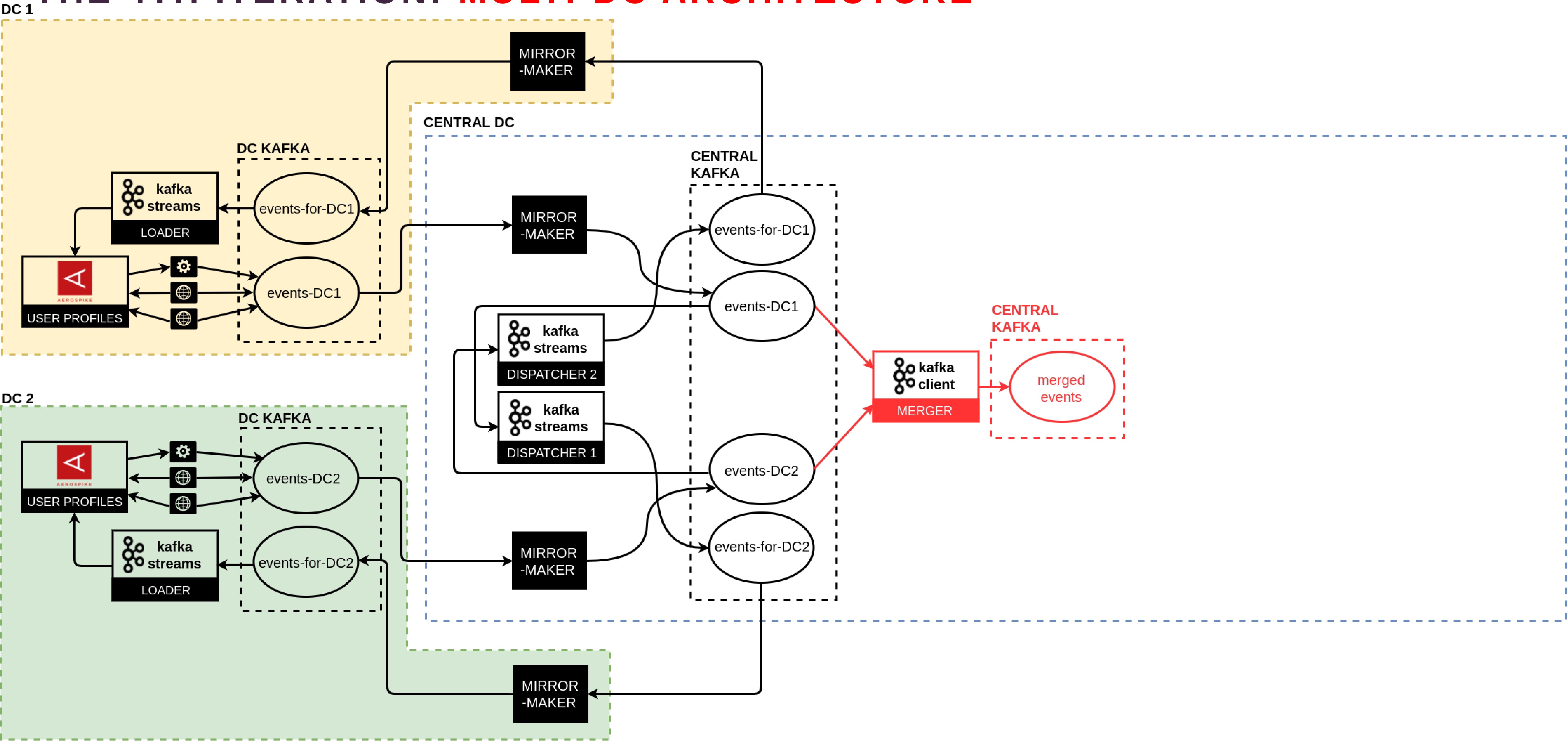

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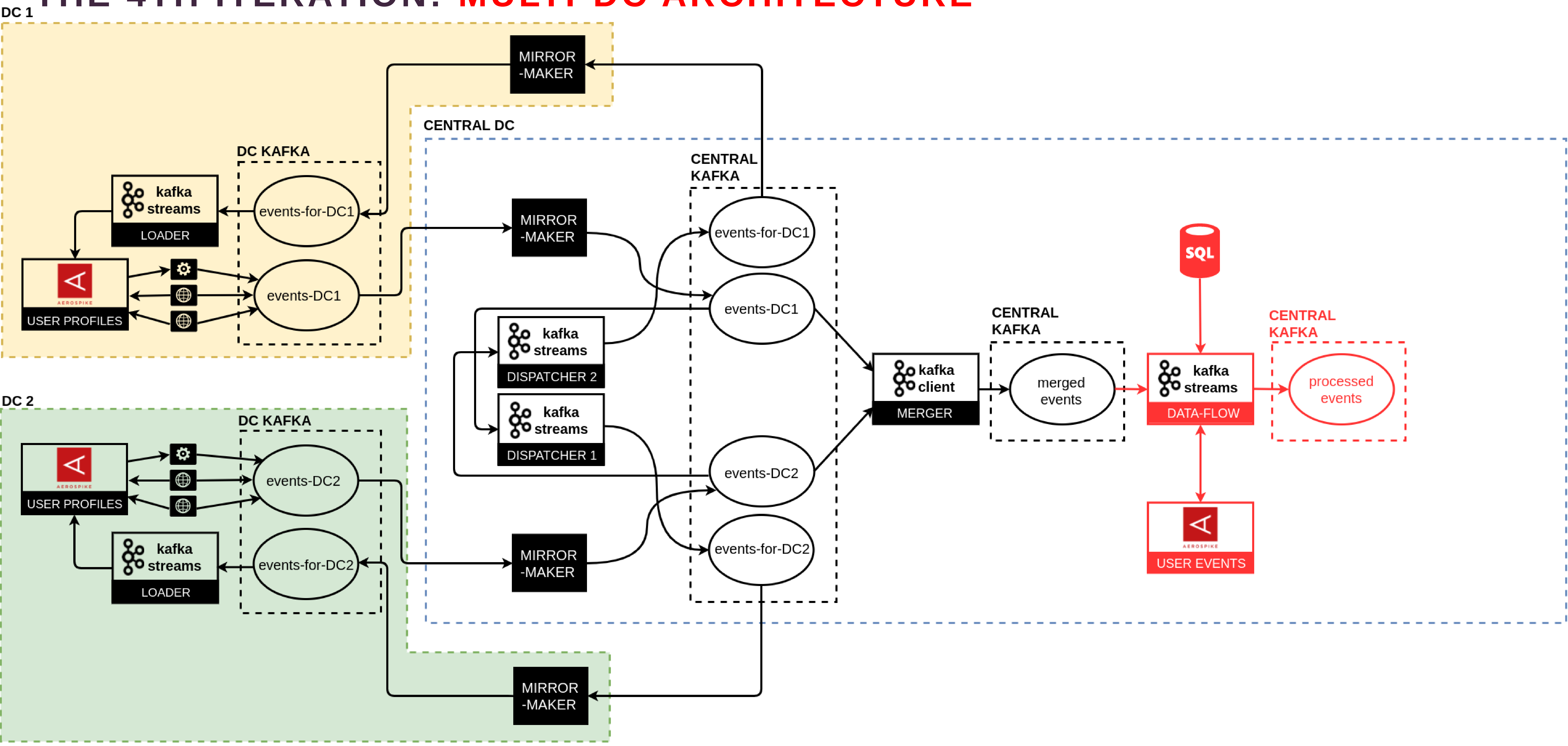

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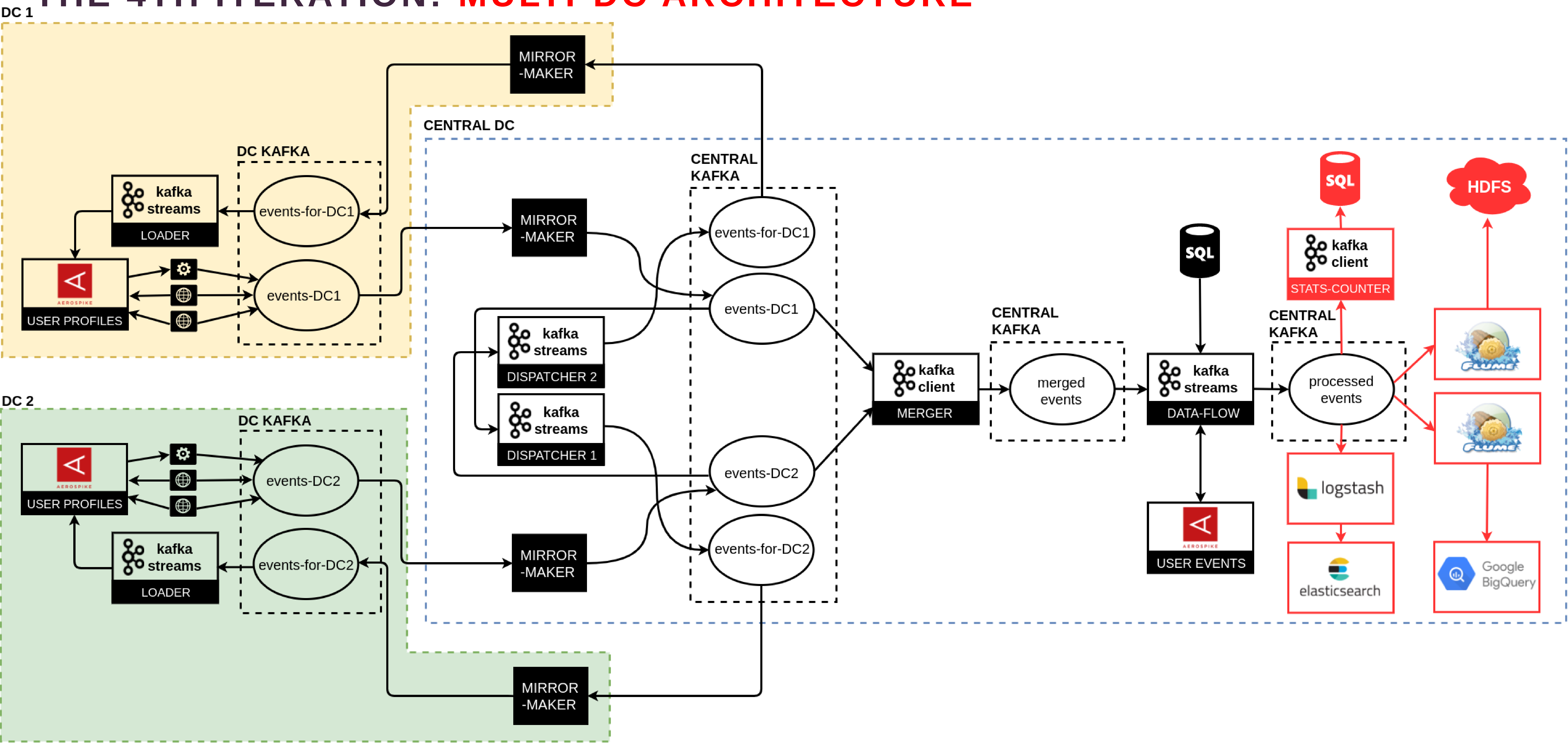

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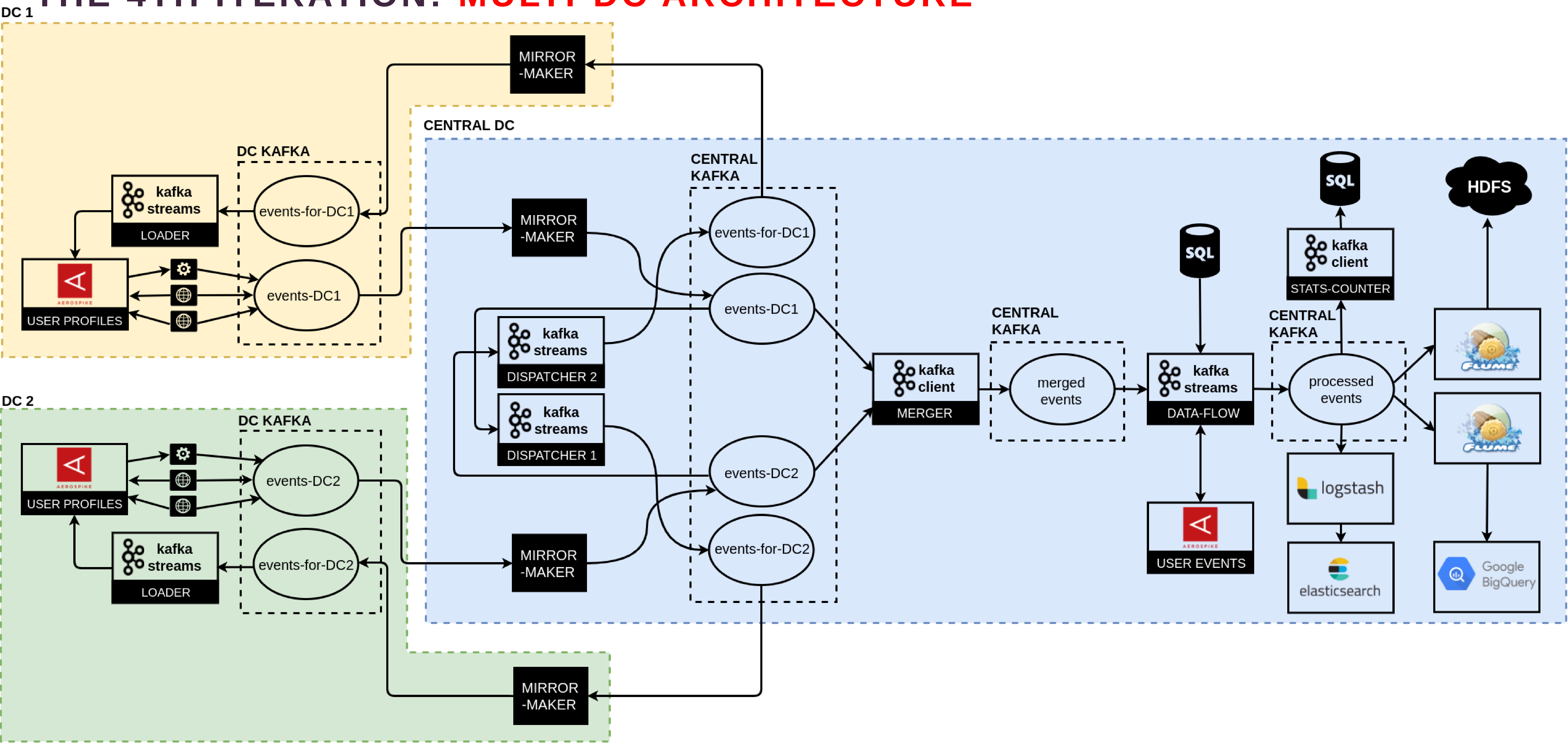
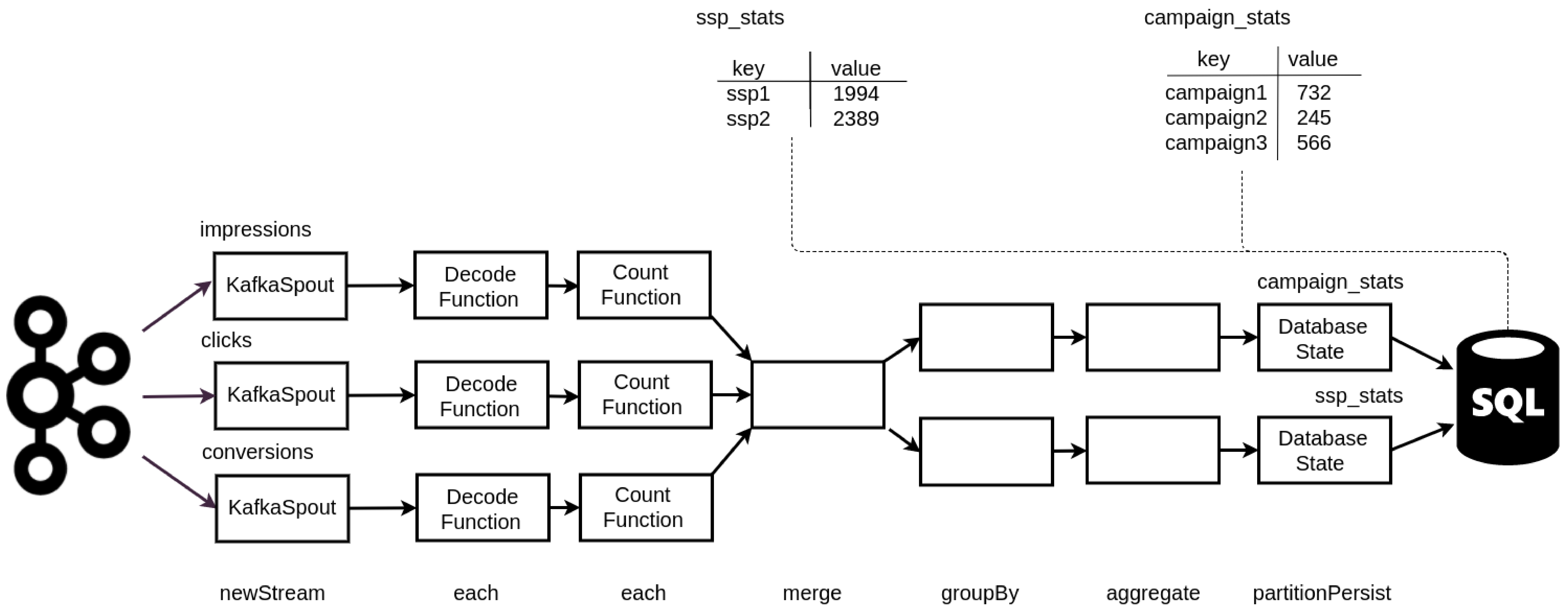


OUR USE CASES

STATS-COUNTER: STORM TOPOLOGY (THE 2ND ITERATION)



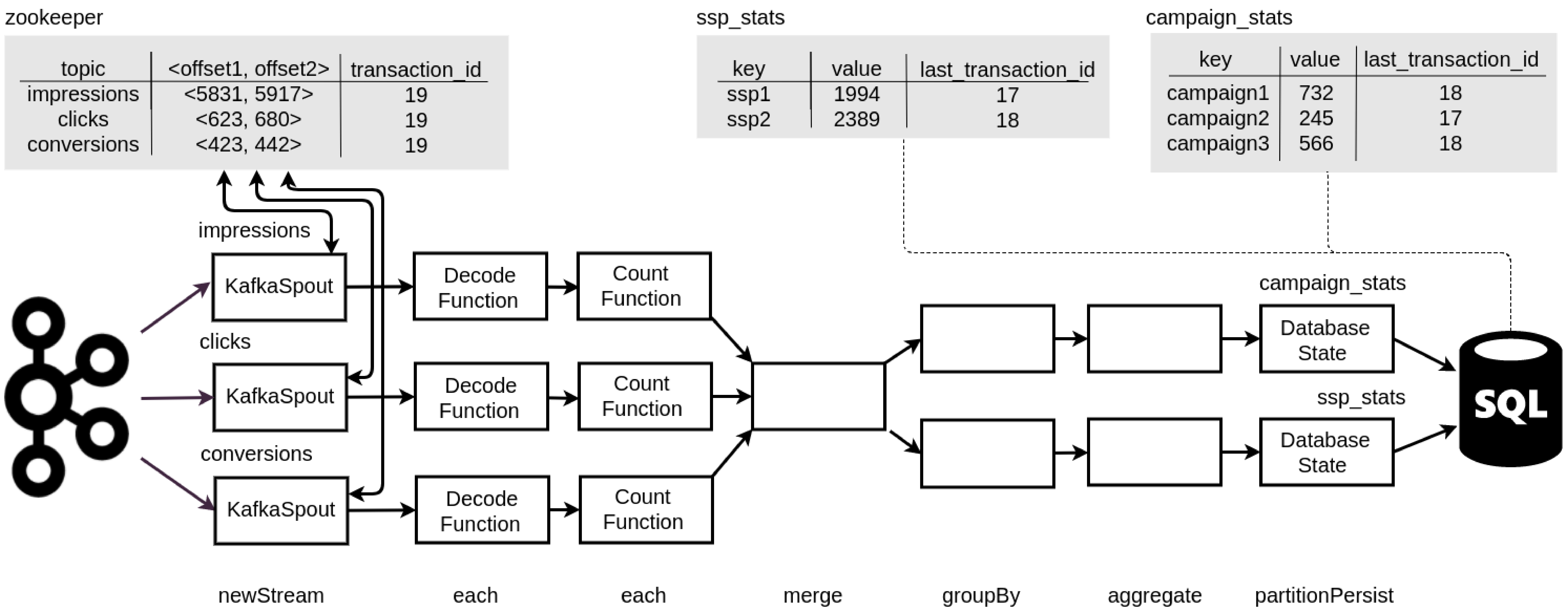
ssp_stats

key	value
ssp1	1994
ssp2	2389

campaign_stats

key	value
campaign1	732
campaign2	245
campaign3	566

APACHE STORM: TRIDENT + EXACTLY-ONCE STATE



zookeeper

topic	<offset1, offset2>	transaction_id
impressions	<5831, 5917>	19
clicks	<623, 680>	19
conversions	<423, 442>	19

ssp_stats

key	value	last_transaction_id
ssp1	1994	17
ssp2	2389	18

campaign_stats

key	value	last_transaction_id
campaign1	732	18
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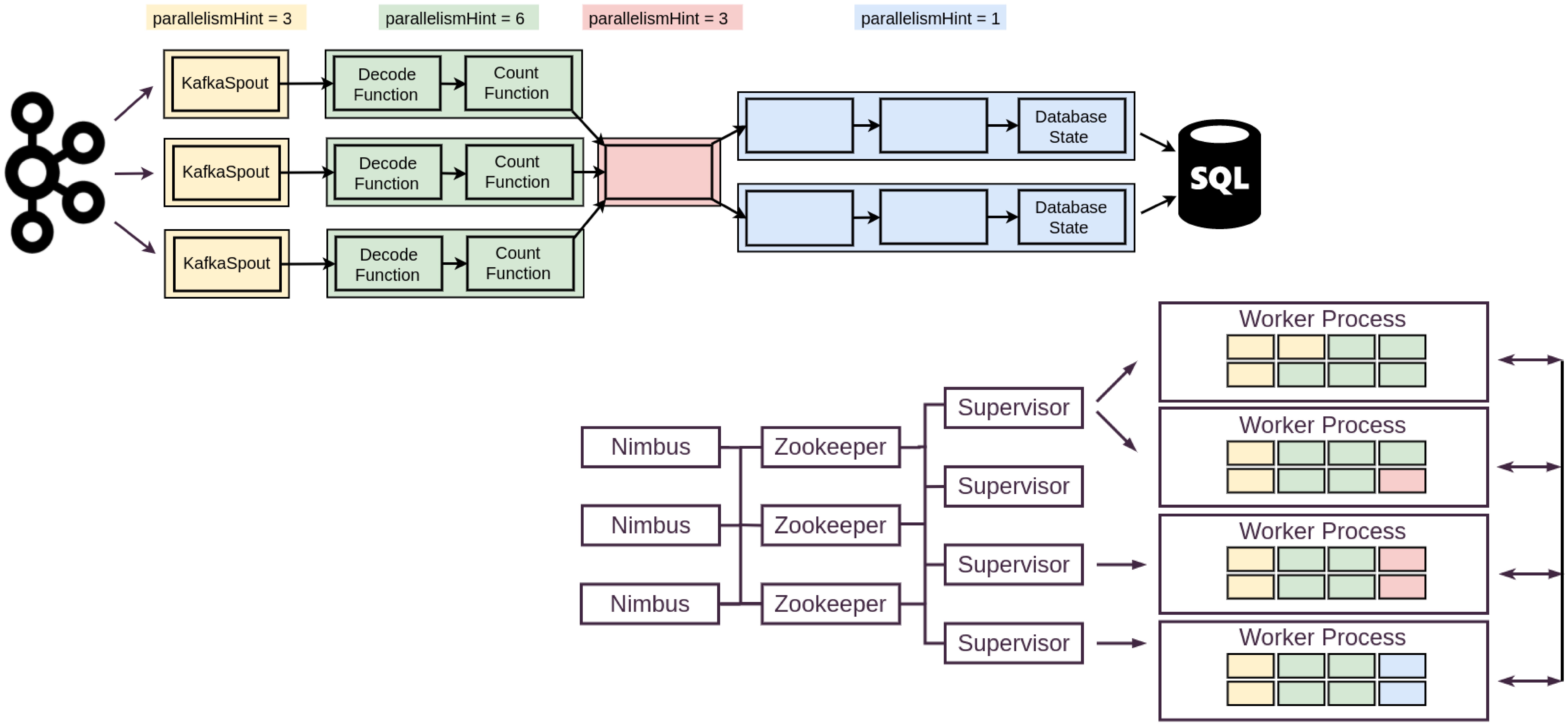
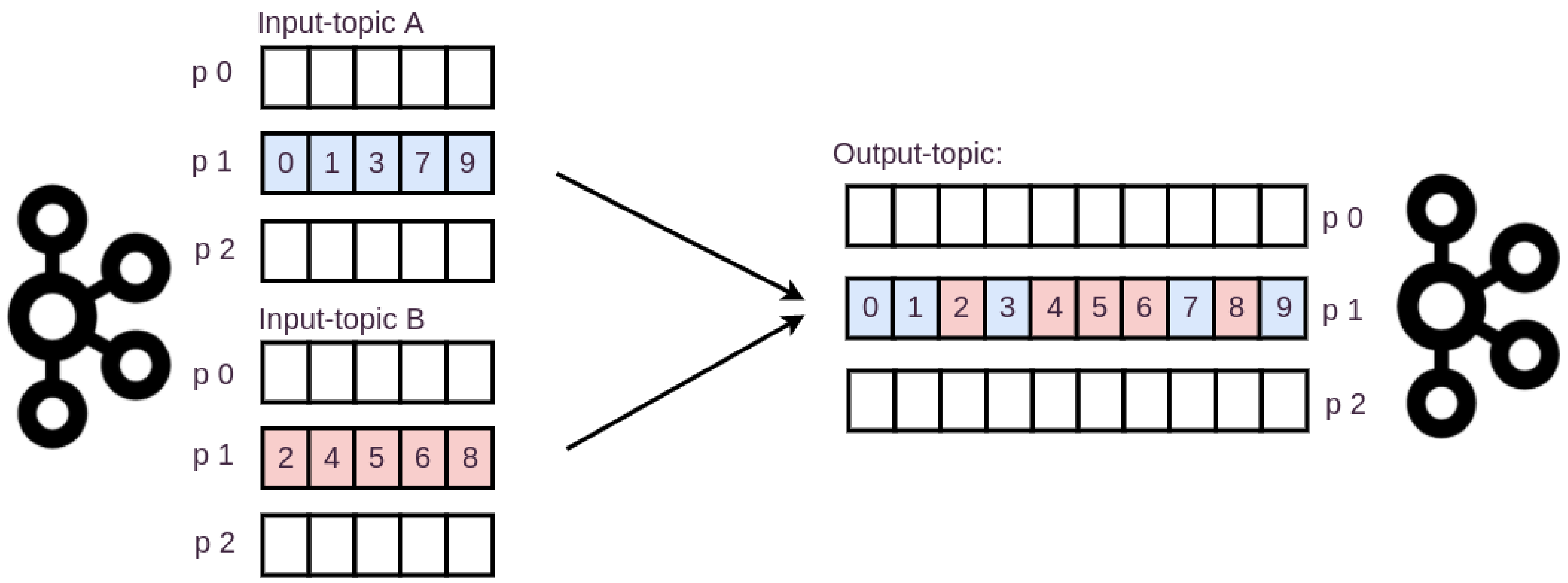
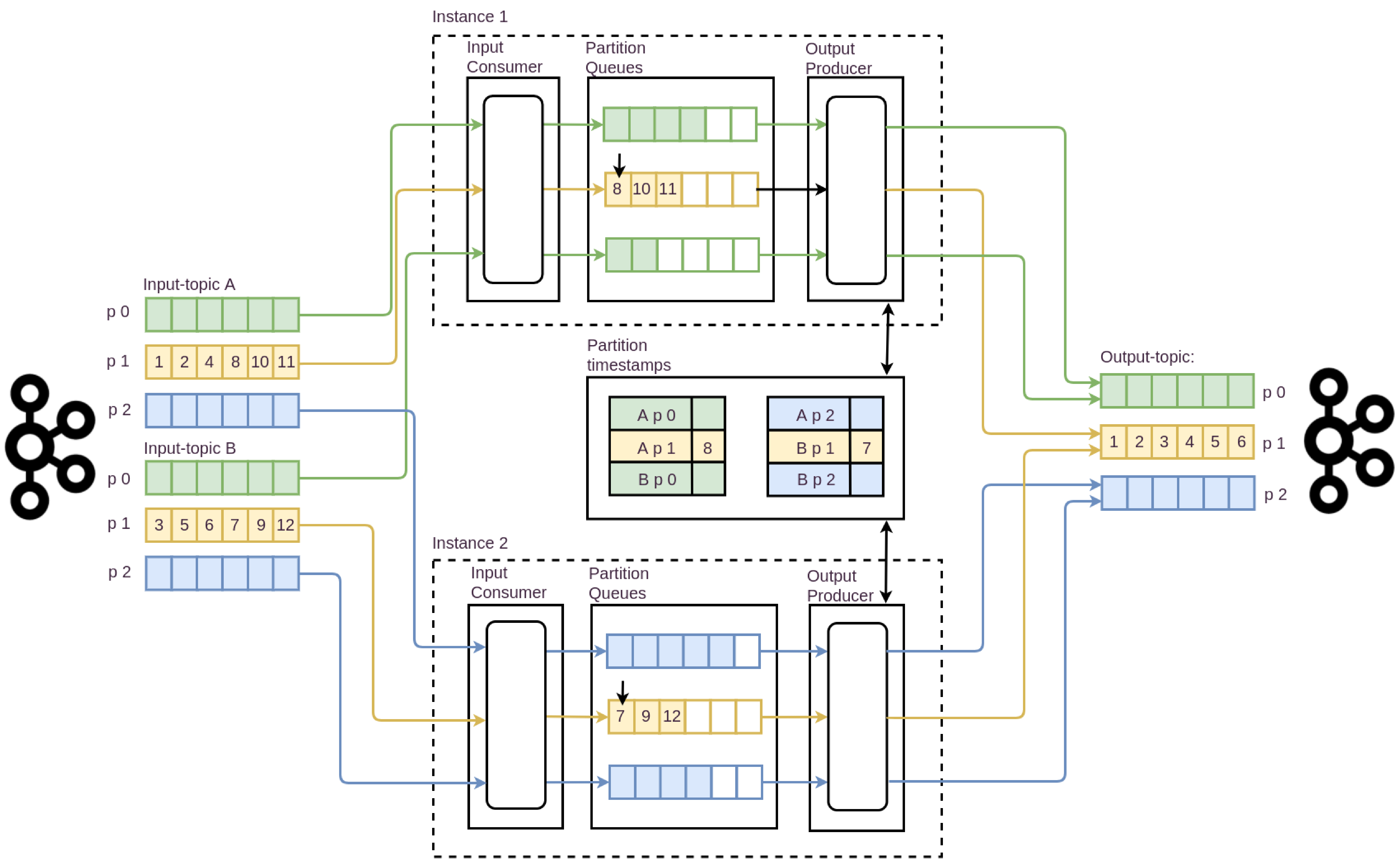
APACHE STORM: PARALLELISM MODEL



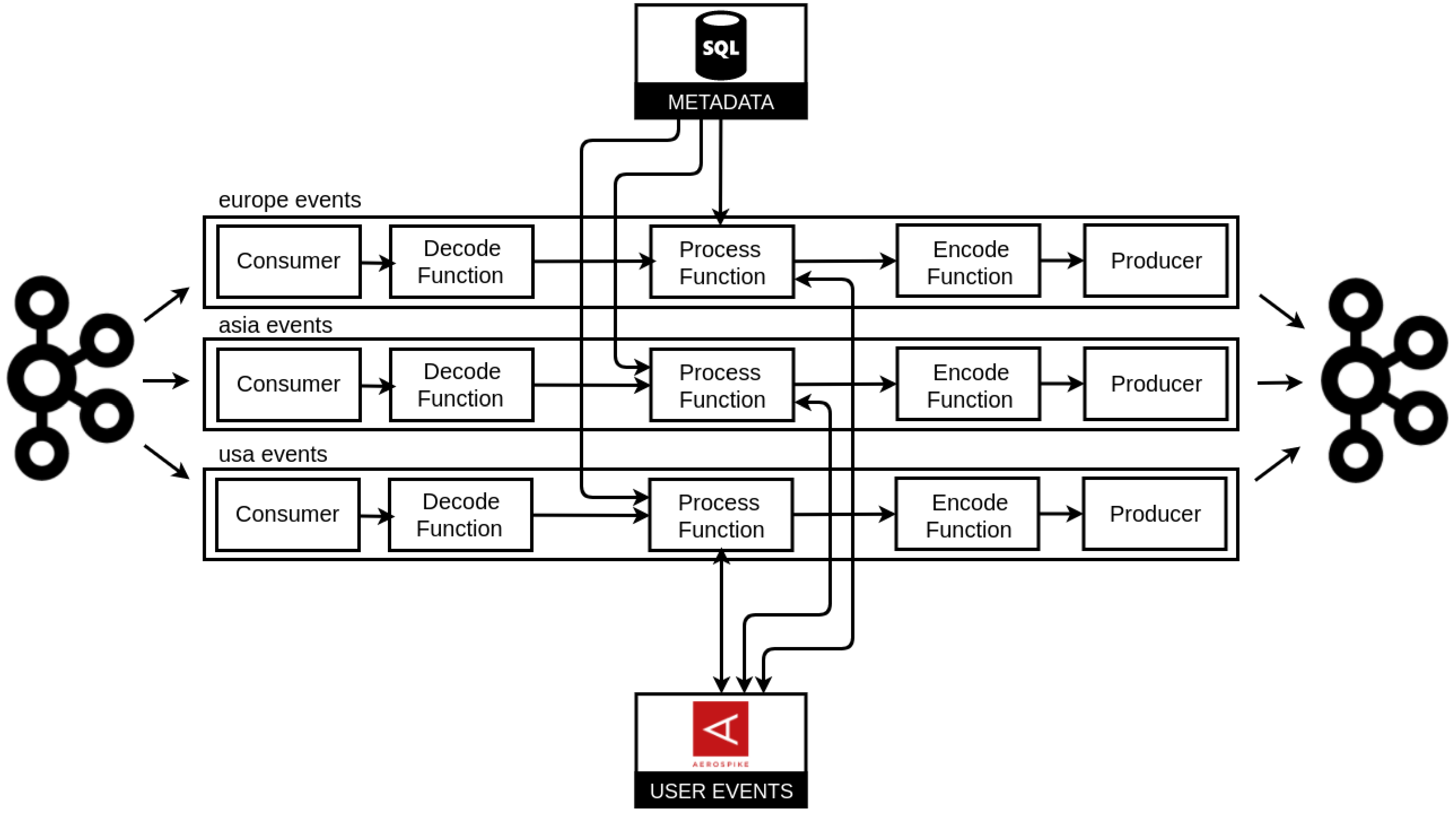
MERGER (THE 4TH ITERATION)



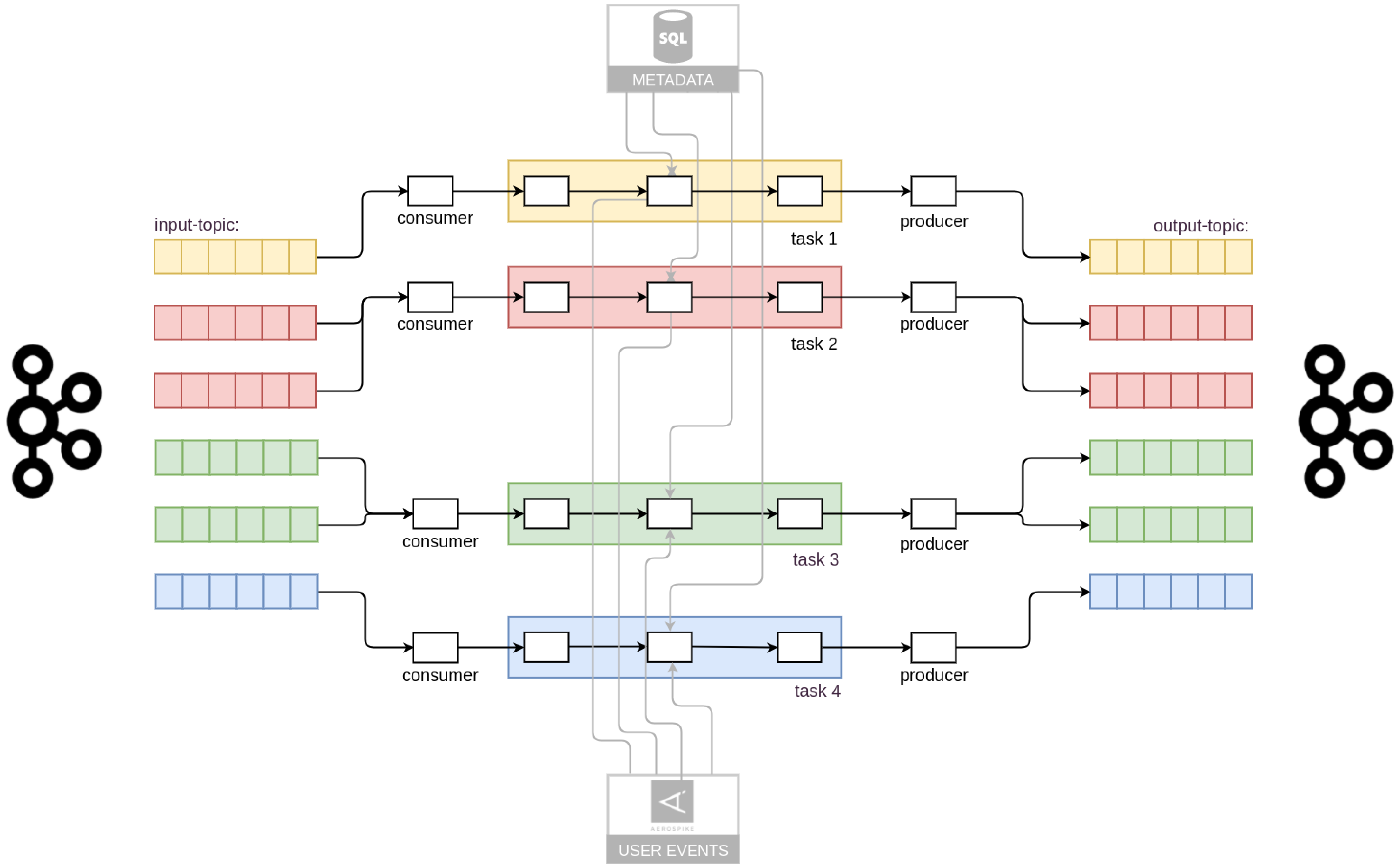
MERGER: KAFKA CONSUMER API



DATA-FLOW: KAFKA STREAMS (THE 4TH ITERATION)



KAFKA STREAMS: PARALLELISM MODEL



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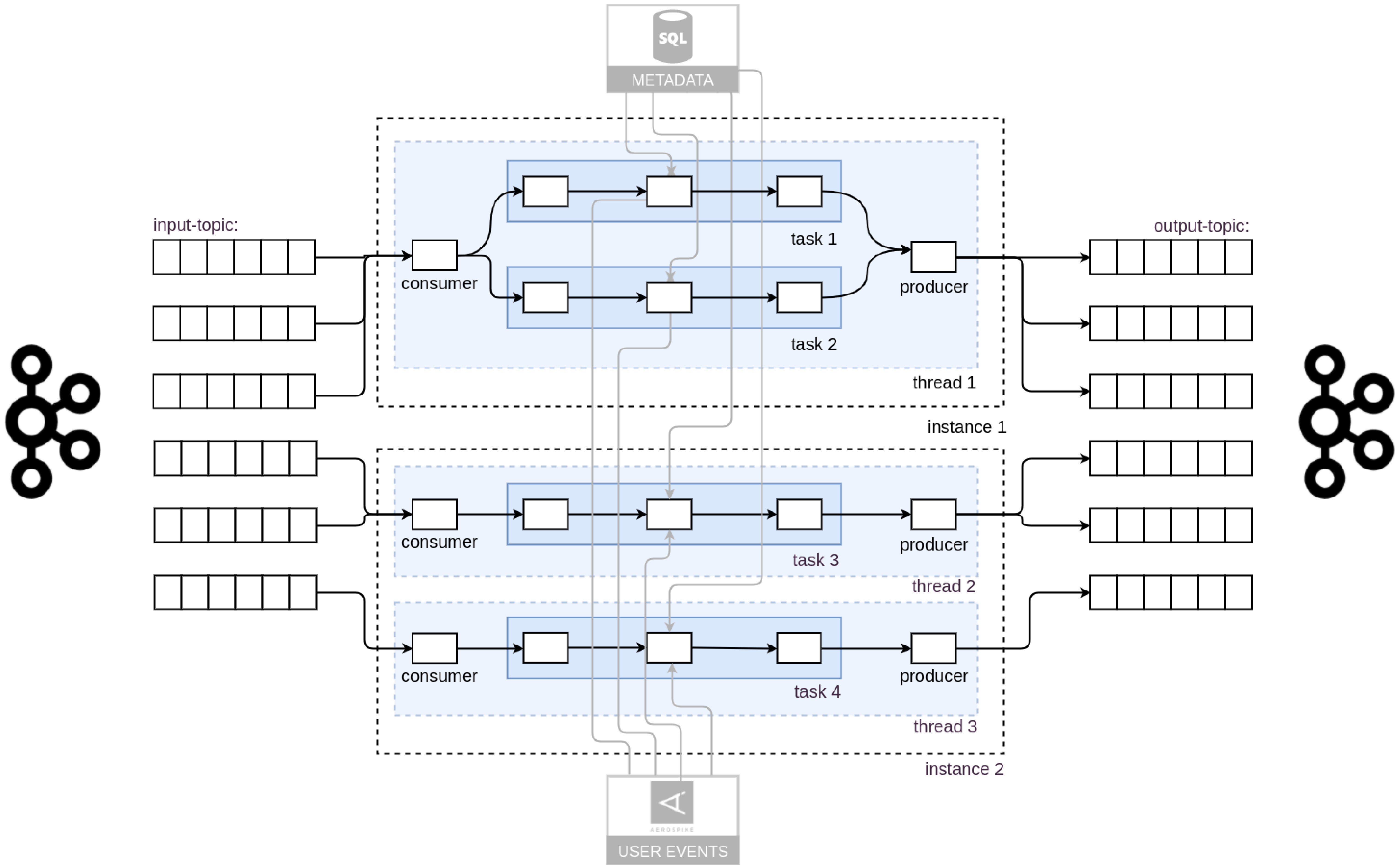

KAFKA STREAMS: EXACTLY-ONCE DELIVERY

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Consumer:

- isolation.level = read_committed

KAFKA WORKERS

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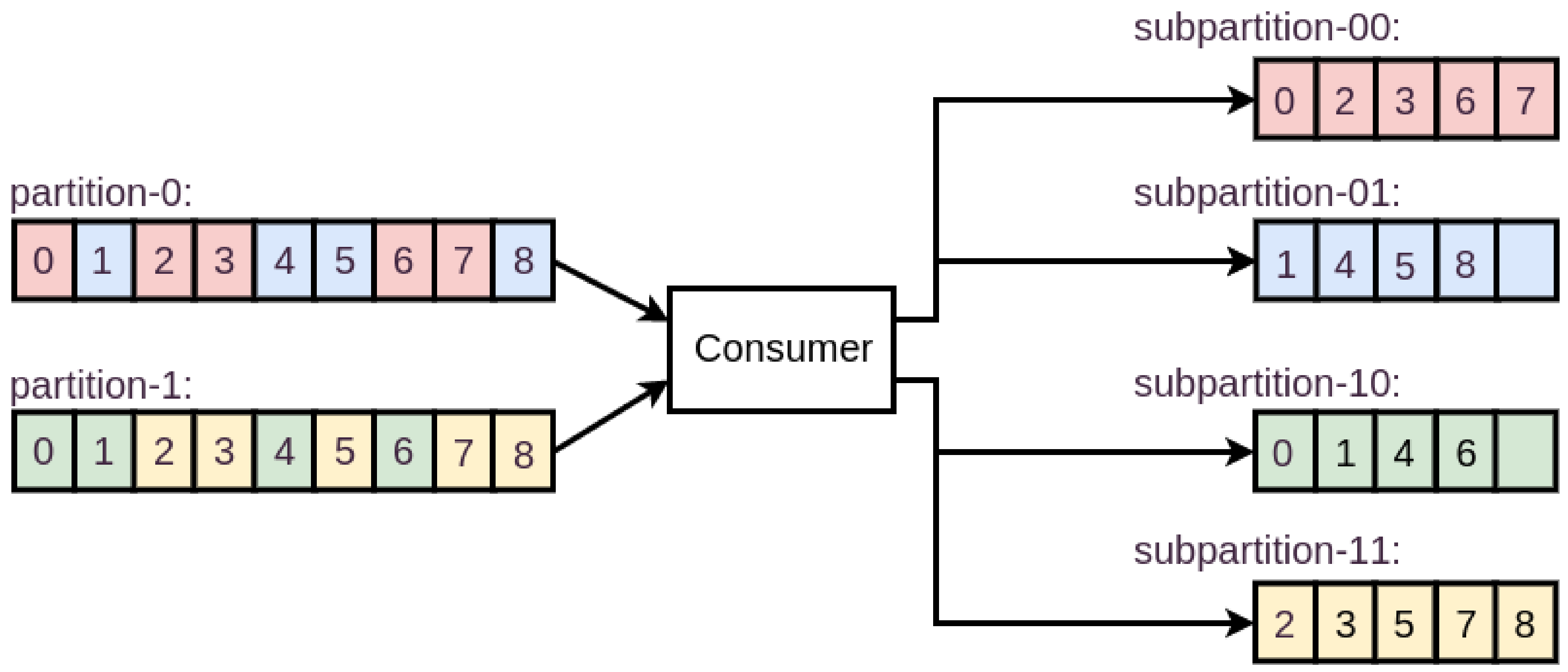

KAFKA WORKERS: MAIN FEATURES

- higher level of distribution

```
public interface WorkerPartitioner<K, V> {

    int subpartition(ConsumerRecord<K, V> consumerRecord);

}
```

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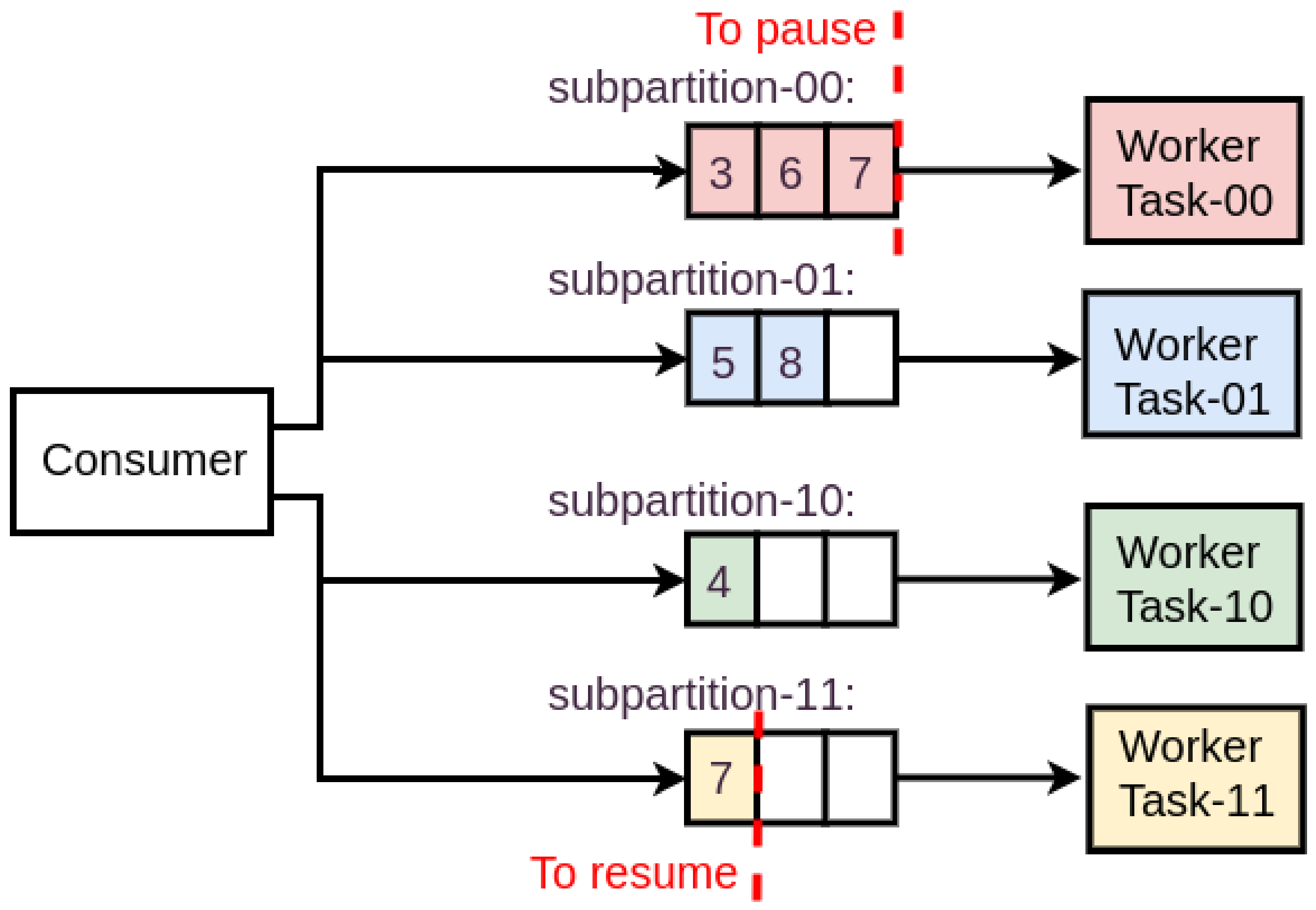

KAFKA WORKERS: MAIN FEATURES

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```
public interface WorkerTask<K, V> {

    boolean accept(WorkerRecord<K, V> record);

    void process(WorkerRecord<K, V> record, RecordStatusObserver observer);

}
```

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```
public interface RecordStatusObserver {

    void onSuccess();

    void onFailure(Exception exception);

}
```

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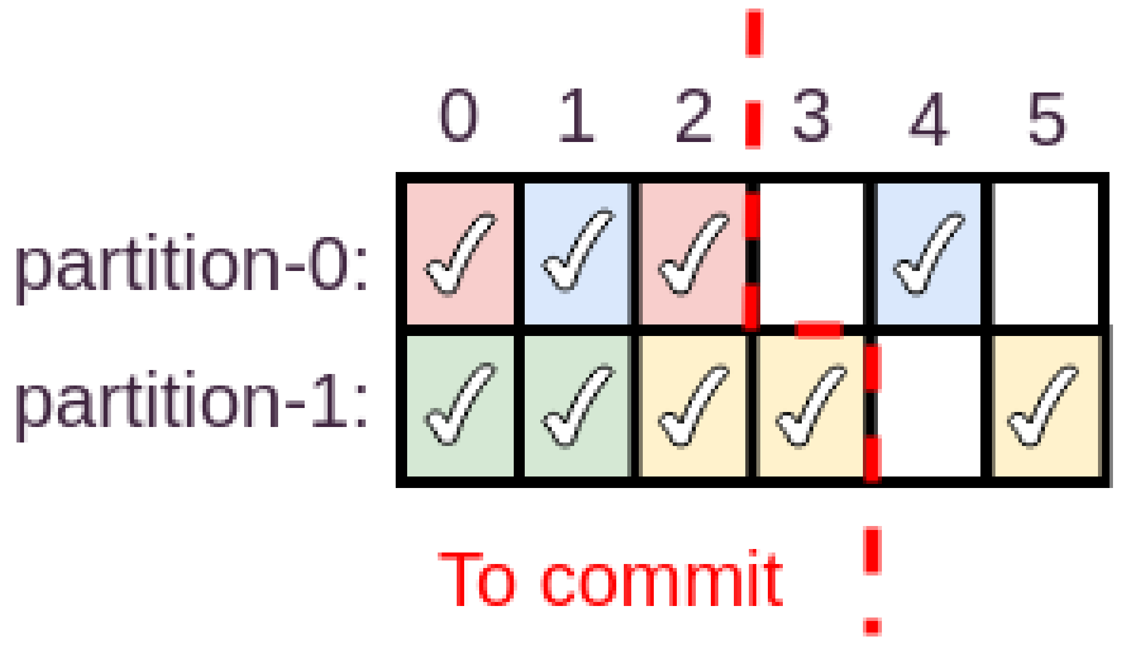

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- github.com/RTBHOUSE/kafka-workers

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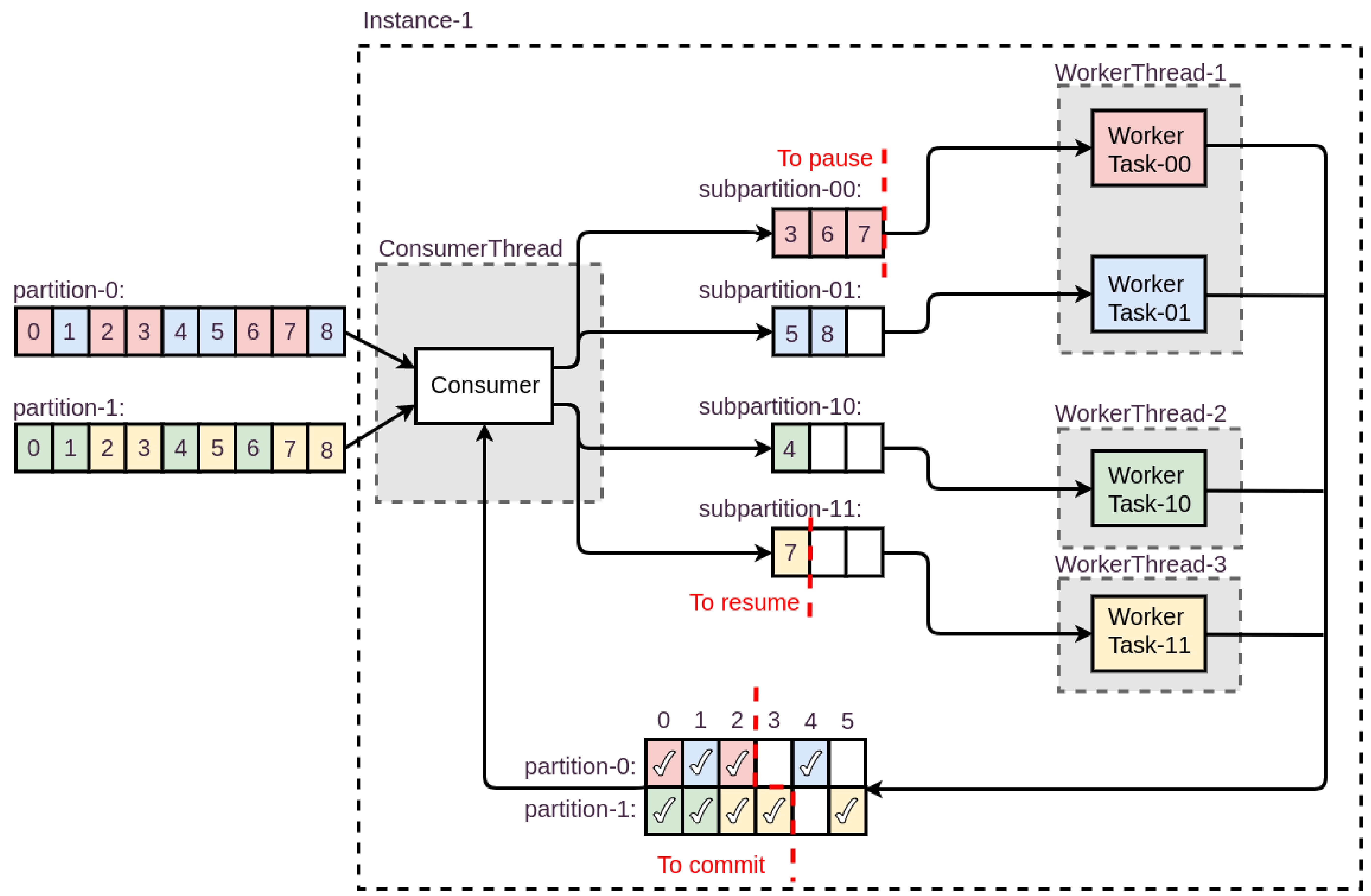
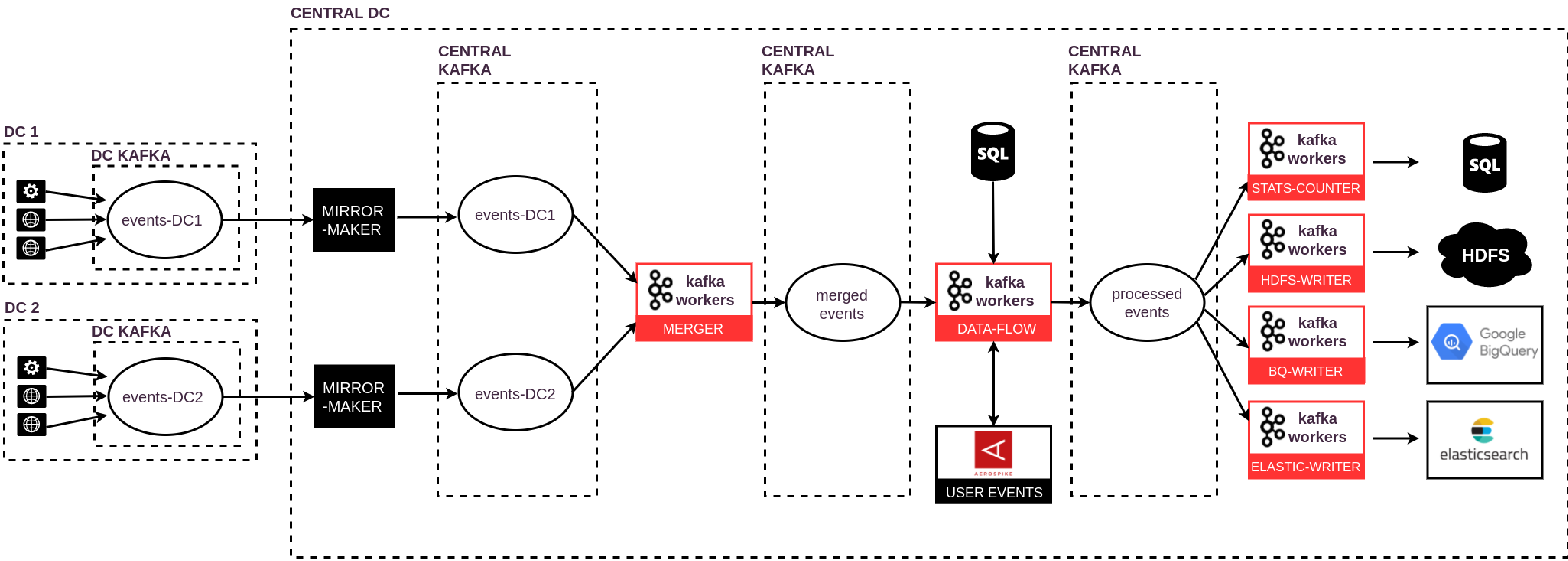


THE 5TH ITERATION: KAFKA WORKERS



RTB HOUSE

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