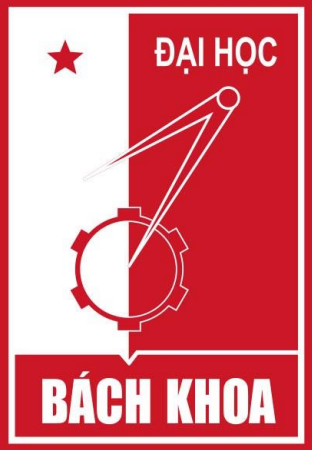

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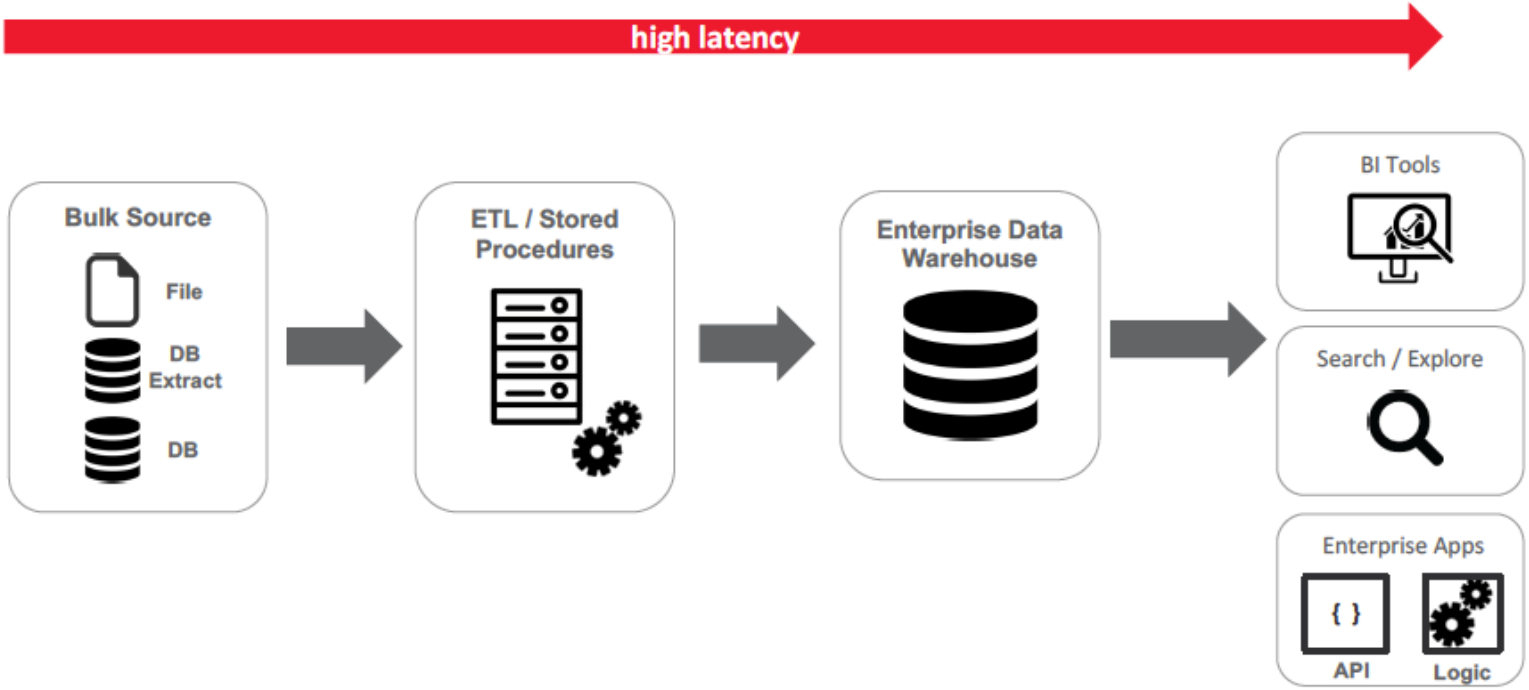
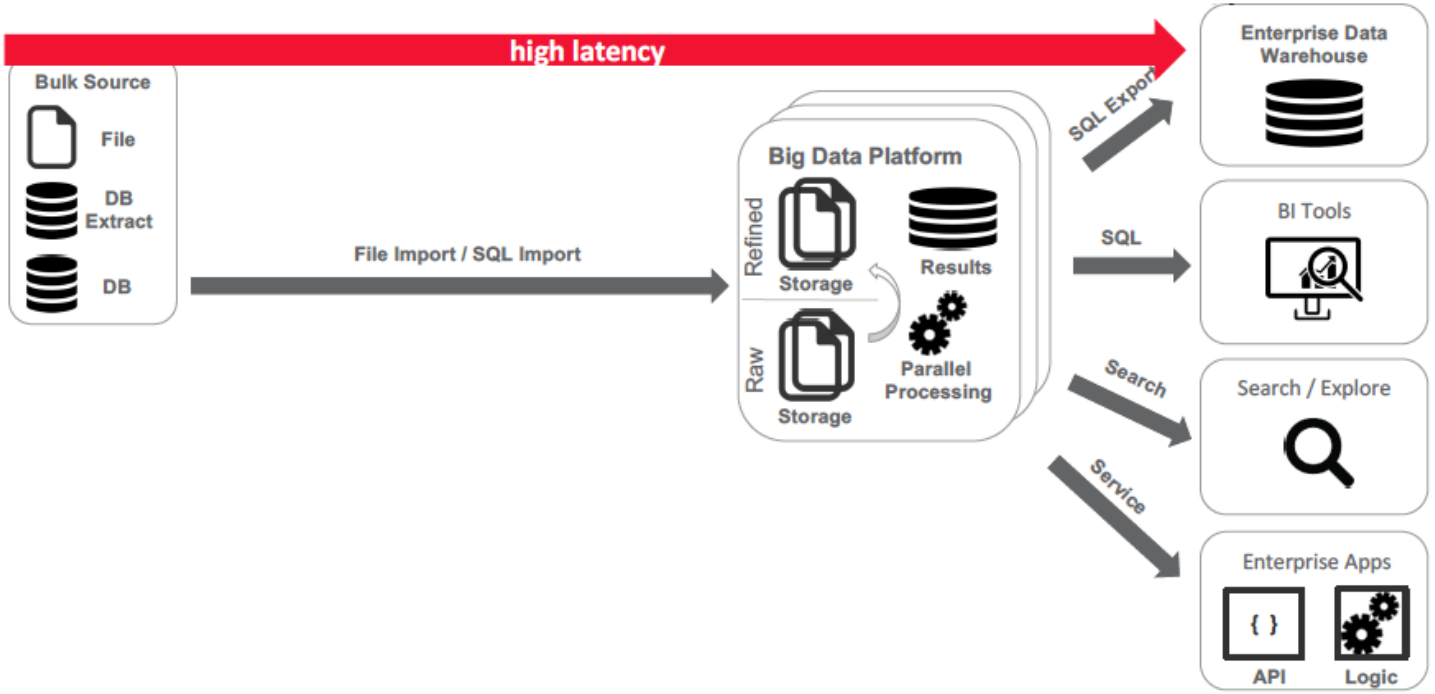
Chapter 8

Big data architecture

Traditional BI infrastructures



Hadoop solves Volume and Variety – not Velocity

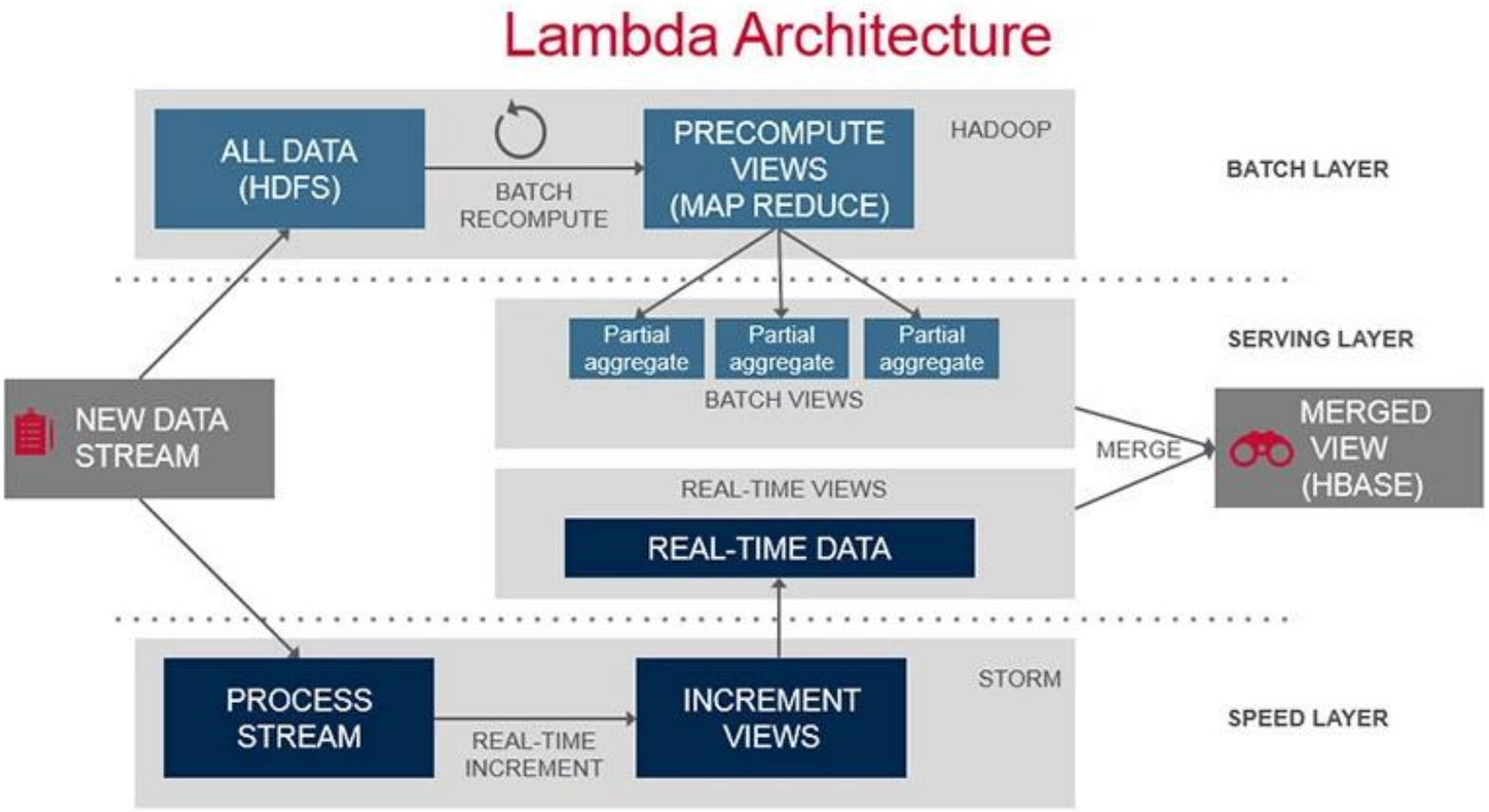


Lambda Architecture

- A data-processing architecture designed to handle massive quantities of data by taking advantage of both batch and stream processing methods.
- Spark is one of the few data processing frameworks that allows you to seamlessly integrate batch and stream processing
  - Of petabytes of data
  - In the same application

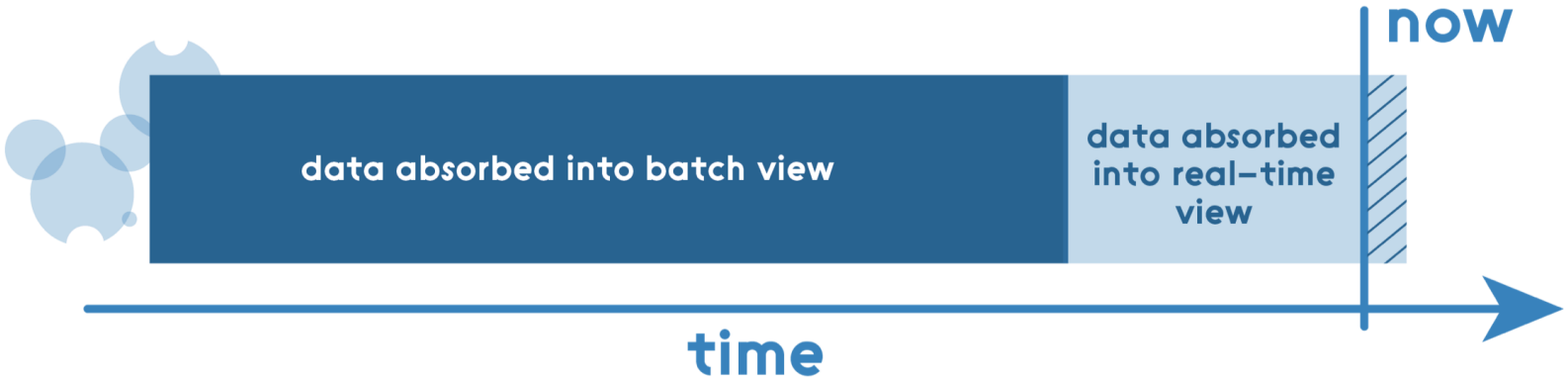
I need fast access to historical data on the fly for predictive modeling with real time data from the stream

Lambda architecture

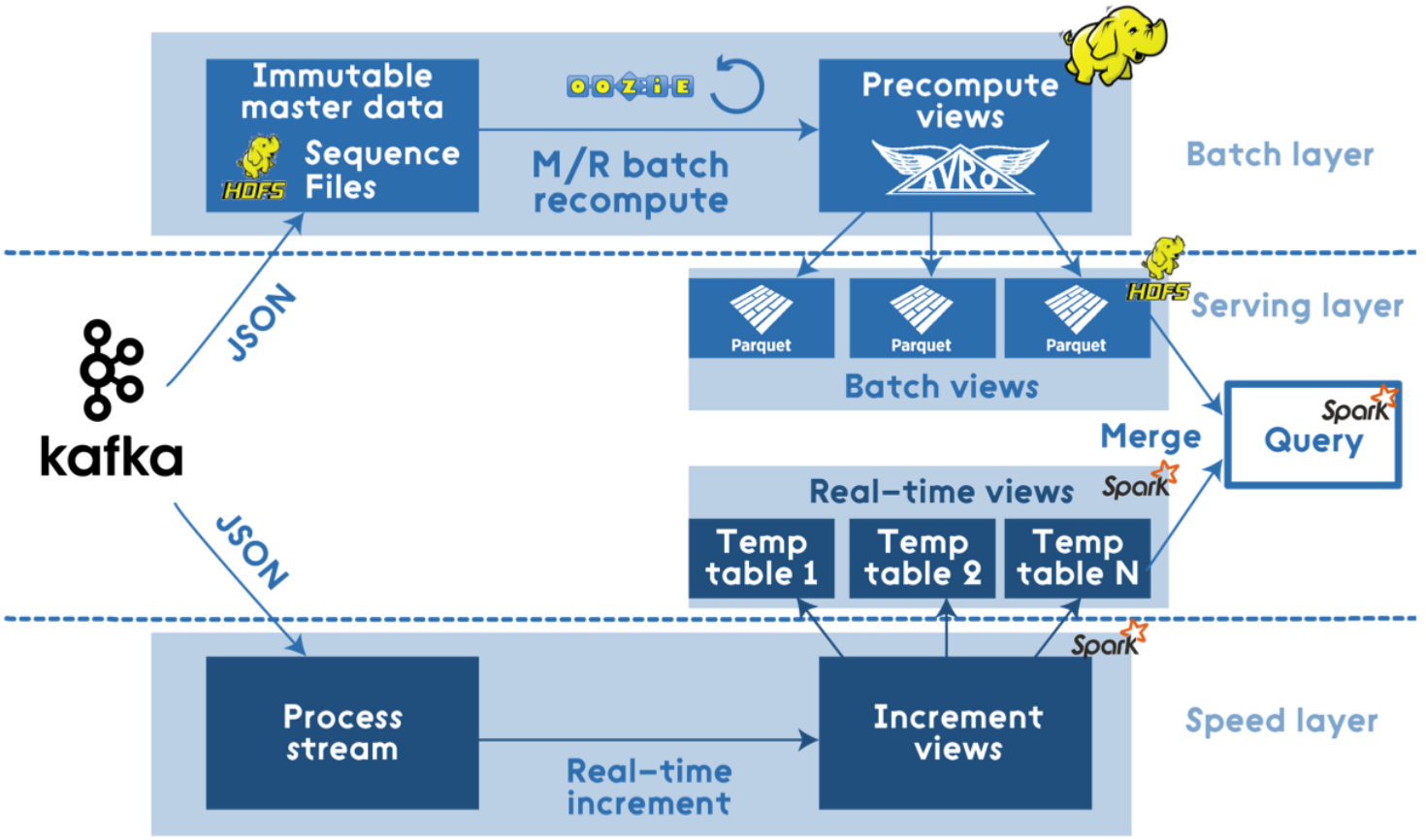


Relevance of data

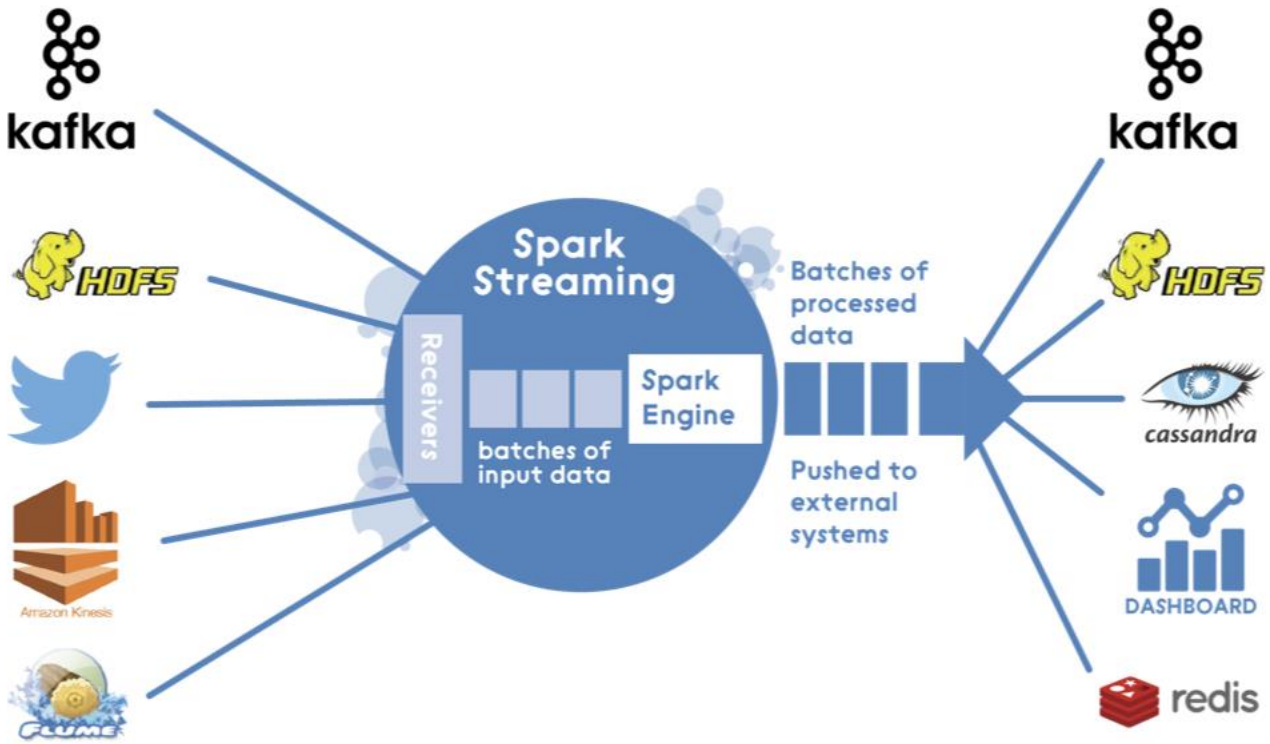
query = function(batch view, real time view)
real time view = function(real time view, new data)
batch view = function(all data)



Lambda architecture: one implementation



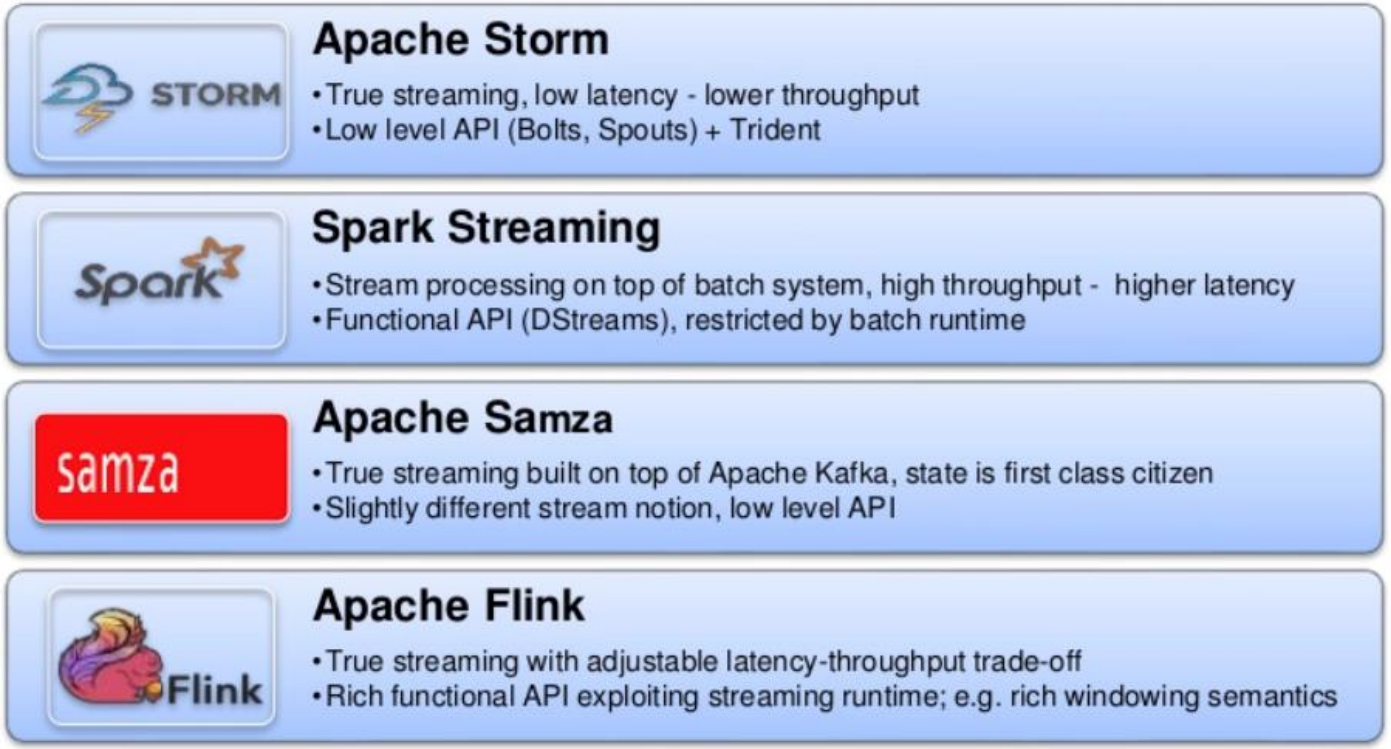
Spark streaming



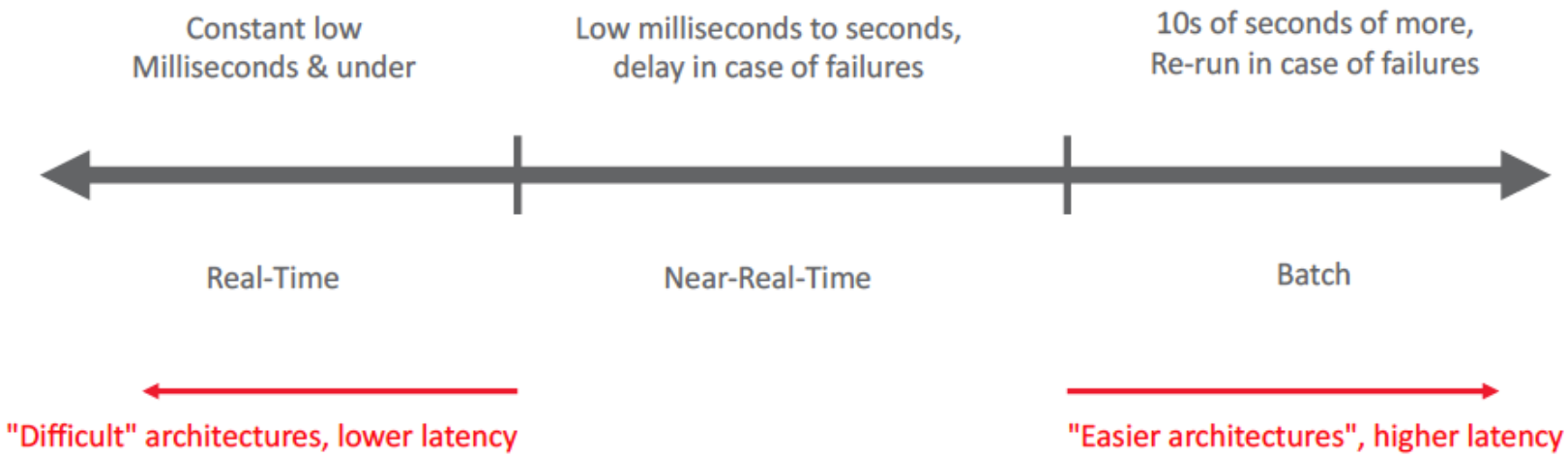
Spark streaming

- Scalable, fault-tolerance stream processing system
- a streaming computation as: a series of very small, deterministic batch jobs
  - Chop up the live stream into batches of X seconds
  - Spark treats each batch of data as RDDs and processes them using RDD operations
  - Finally, the processed results of the RDD operations are returned in batches

Streaming landscape



Stream vs. Batch processing



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