



University of  
South Australia

## Big Data Stack

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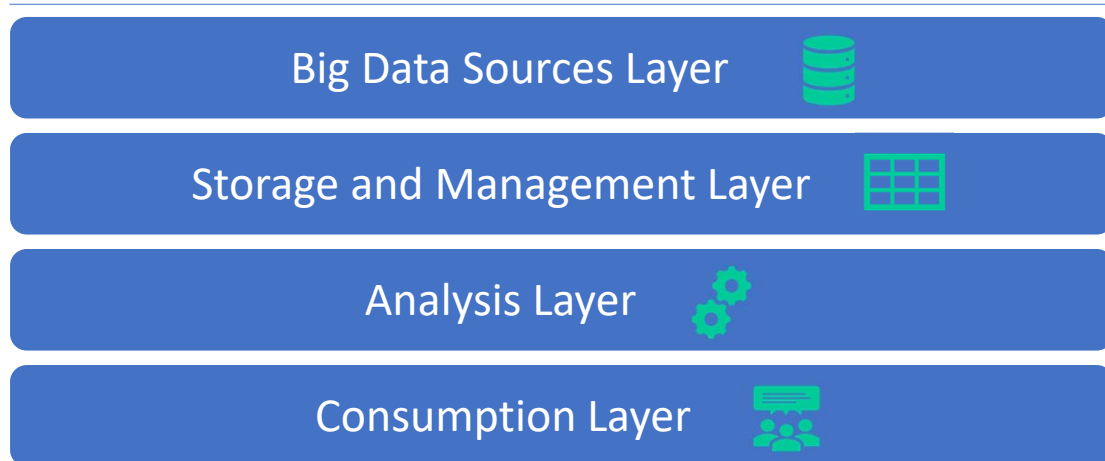
## Big Data Stack

- Generalised version of proven **Big Data frameworks**.
- **Logical** and **physical** structure that dictates how high volumes of data are ingested, processed, stored, managed and accessed.



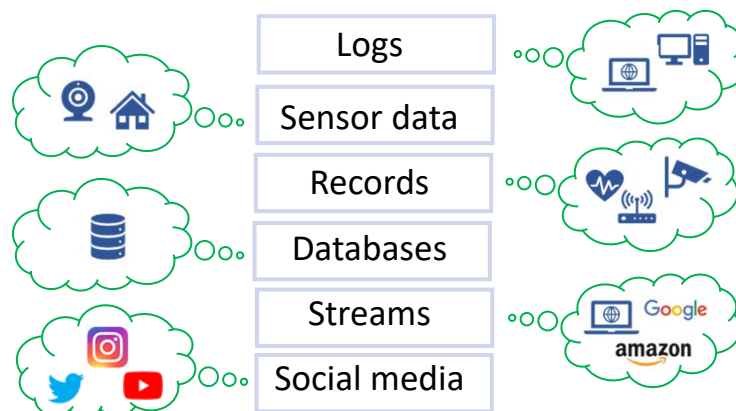
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## Four logical layers



## Big Data Sources

- Need to manage **batch** and **real-time** processing of Big Data sources:



## Management & Storage

- Receive data from the source;
- Convert data into format comprehensible to data analytics tools;
- Store data according to its format.

Distributed File System



NoSQL



Cloud



## Analysis

- Analytics tools to extract business intelligence from the Big Data storage layer.

Batch Analysis



Real-time Analysis



Interactive Querying

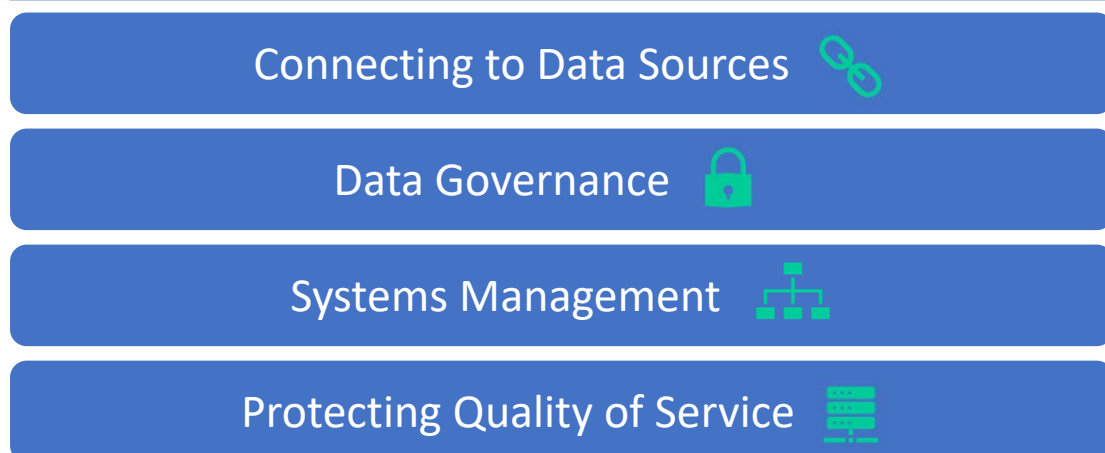


## Consumption

- Receive results from the Big Data analysis layer;
- Present to pertinent output layer.

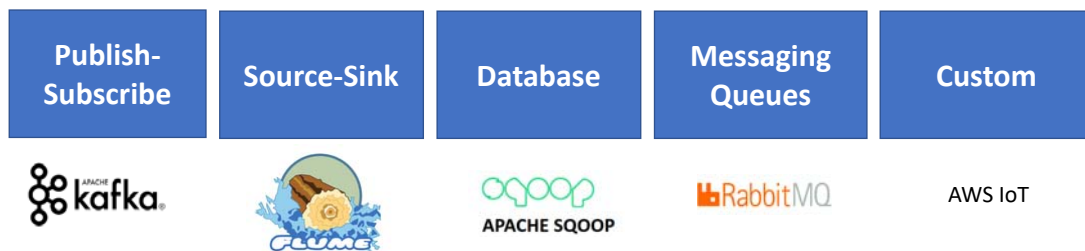


## Four major processes



## Connecting to data sources

- Connectors and adapters are capable of efficiently connecting any format of data and can connect to a variety of different storage systems, protocols, and networks.



## Data governance

- Includes provisions for privacy and security, operating from the moment of ingestion through processing, analysis, storage, and deletion.



## Systems management

- Highly scalable, large-scale distributed clusters which must be monitored continually via central management consoles.

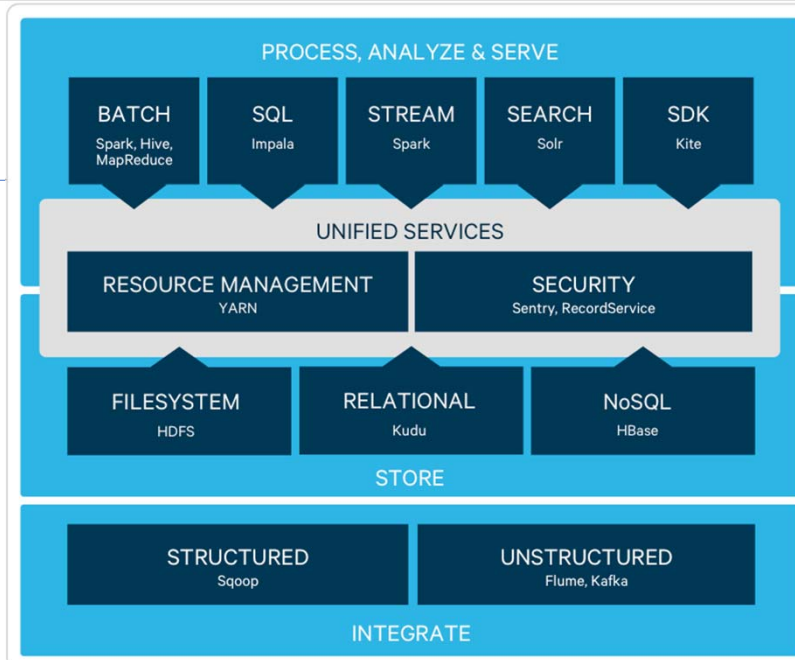


## Protecting quality of service

- **Quality of Service** framework supports the defining of data quality, compliance policies, and ingestion frequency and sizes.



## Cloudera's Distribution for Hadoop



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