Databricks additions

Delta storage

Use of external blobs

Key vault integration

Delta storage (delta lake)

Open Source Reliability for Data Lake with Apache Spark by Michael Armbrust

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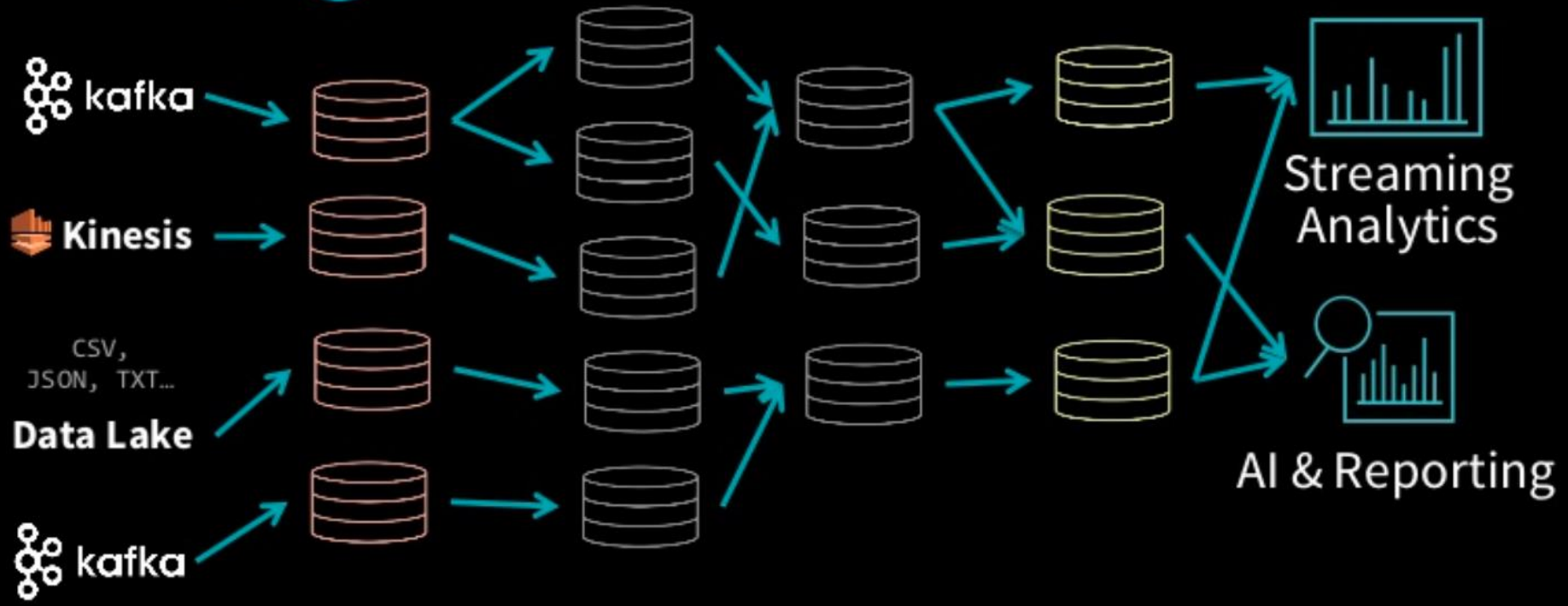
Data Lake Distractions

No atomicity means failed production jobs leave data in corrupt state requiring tedious recovery

No quality enforcement creates inconsistent and unusable data

No consistency / isolation makes it almost impossible to mix appends and reads, batch and streaming

The DELTA LAKE Architecture



Full ACID Transaction

Focus on your data flow, instead of worrying about failures.

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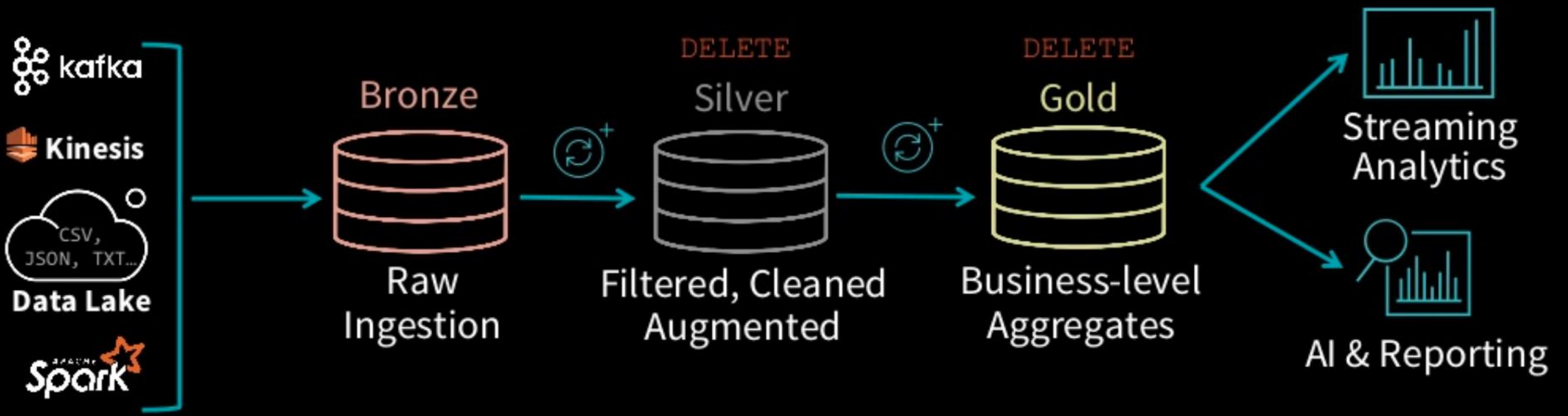
The DELTA LAKE



Easy to recompute when business logic changes:

- Clear tables
- Restart streams

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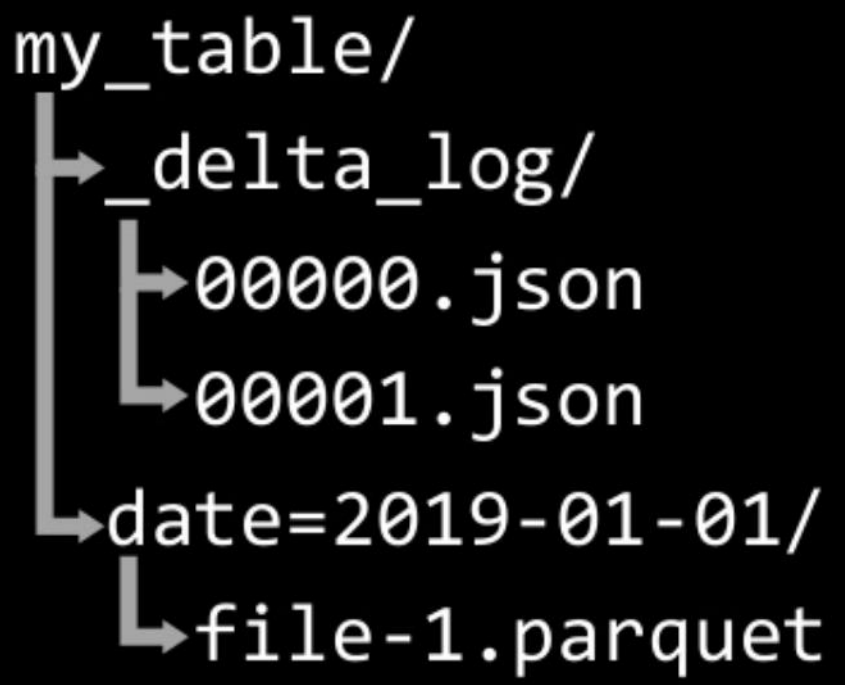
Delta On Disk

Transaction Log

Table Versions

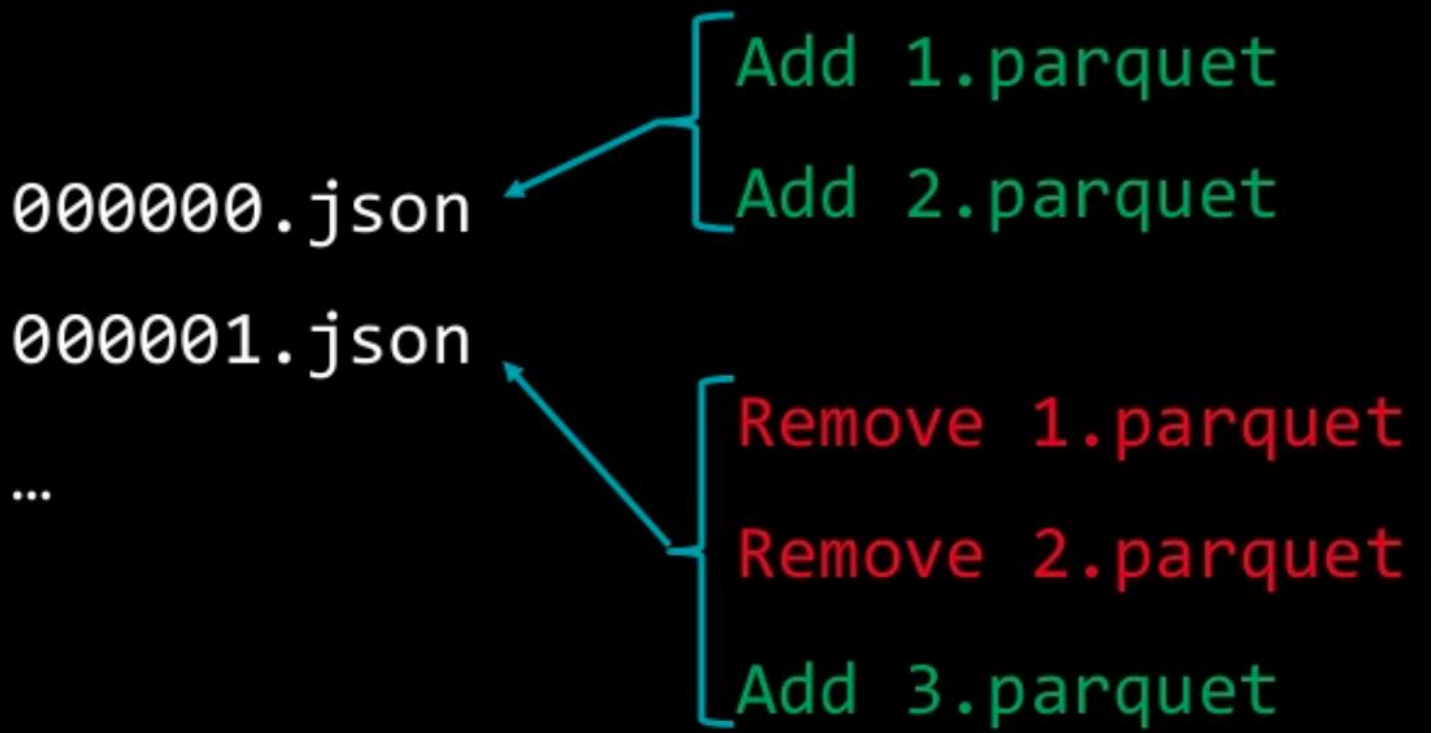
(Optional) Partition Directories

Data Files



Implementing Atomicity

Changes to the table are stored as *ordered, atomic* units called commits



External Blobs / Key vault integration

Python

```
dbutils.fs.mount(
  source = "wasbs://<container-name>@<storage-account-name>.blob.core.windows.net",
  mount_point = "/mnt/<mount-name>",
  extra_configs = {"<conf-key>":dbutils.secrets.get(scope = "<scope-name>", key = "<key-name>")})
```

https://docs.databricks.com/spark/latest/data-sources/azure/azure-storage.html