Lesson 3.2: Spark as a Connector

DISTRIBUTED COMPUTING WITH SPARK SQL

Spark as a Connector

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Slide 2: Welcome Back!

Welcome Back!

Data architecture and design principles

Slide 3: Learning Objectives

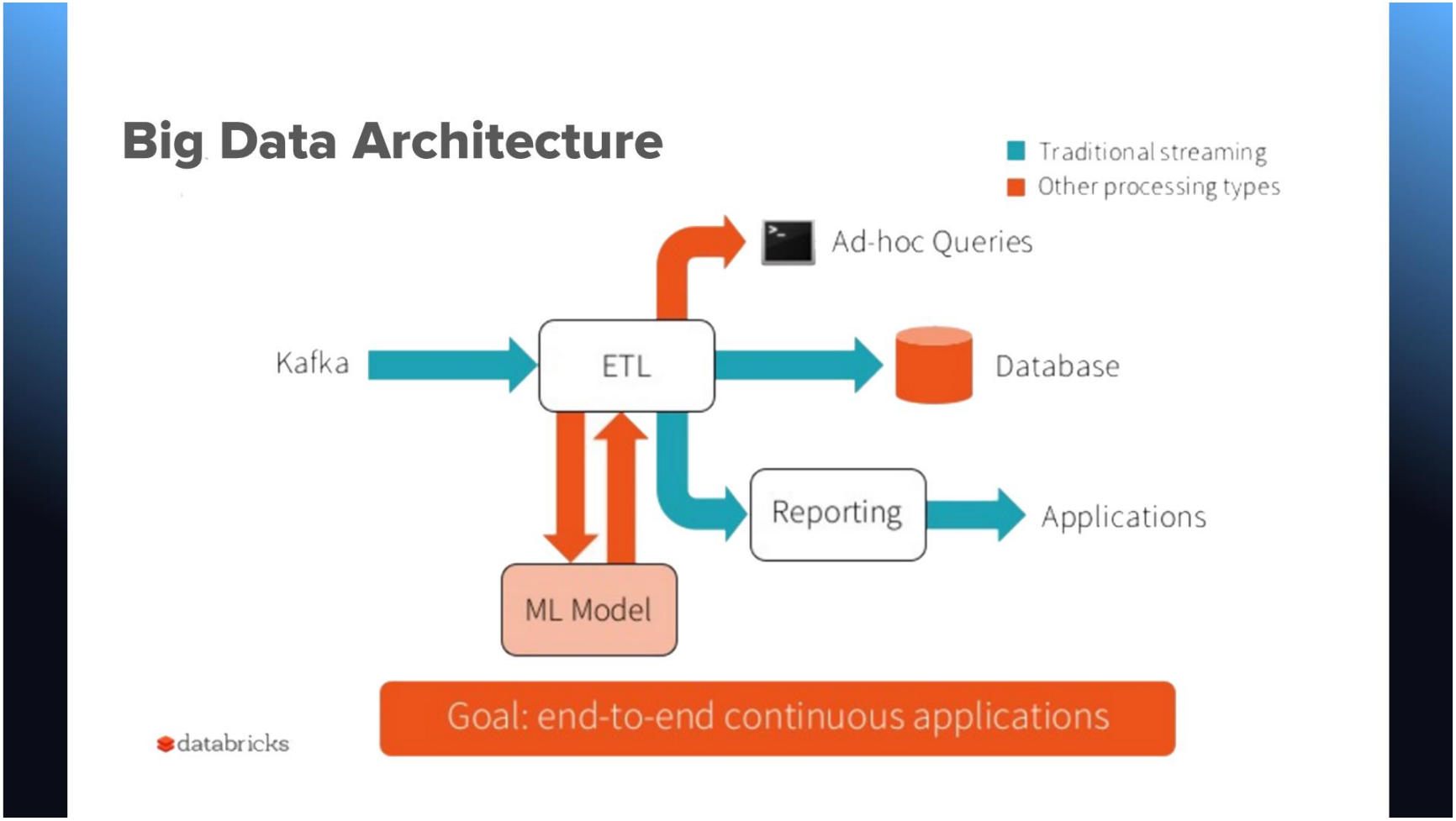
Learning Objectives

Contextualize demands on data applications

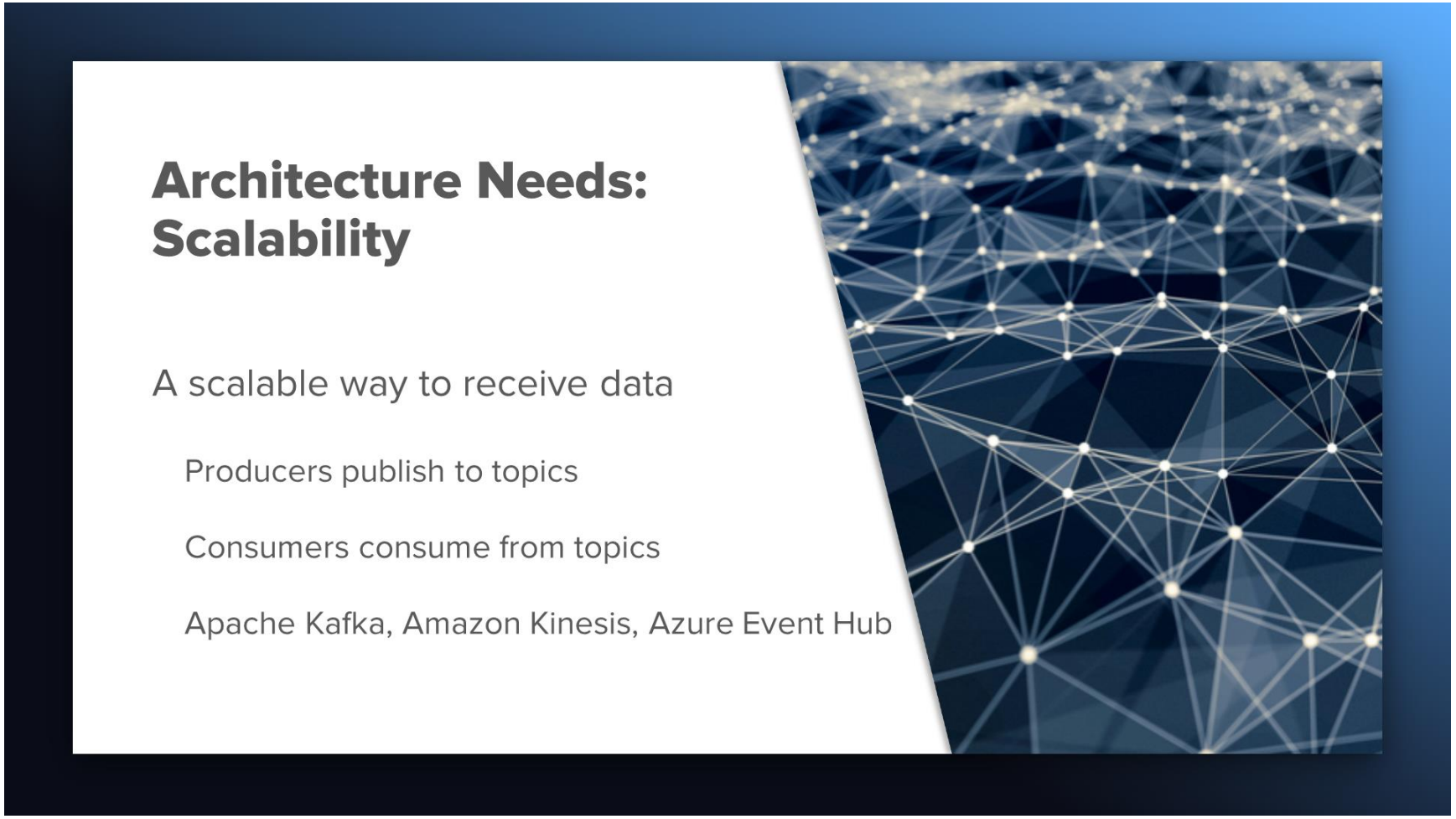
Identify popular frameworks

Describe design principles for scaling your queries

Slide 4: Big Data Architecture



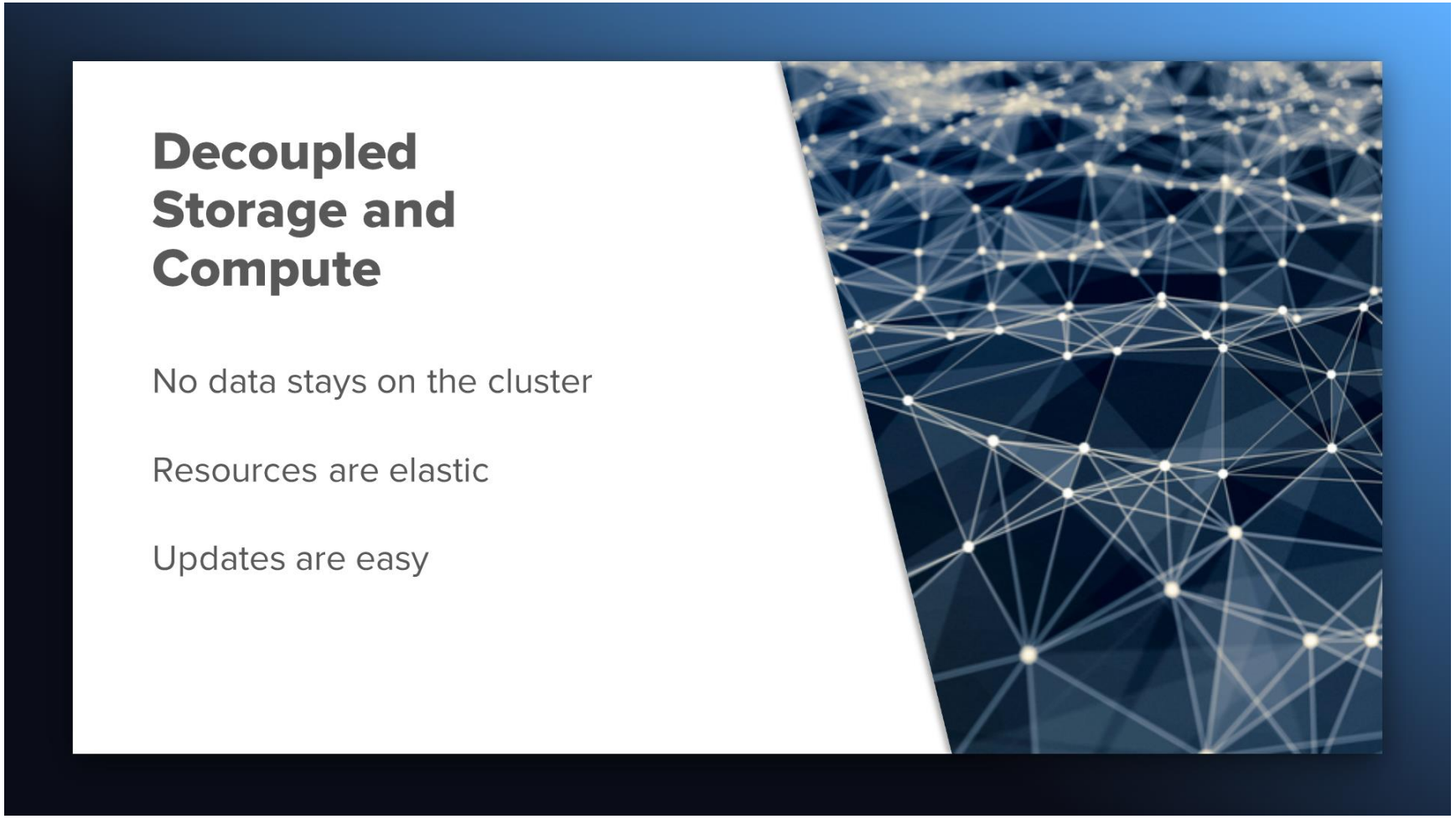
Slide 5: Architecture Needs: Scalability



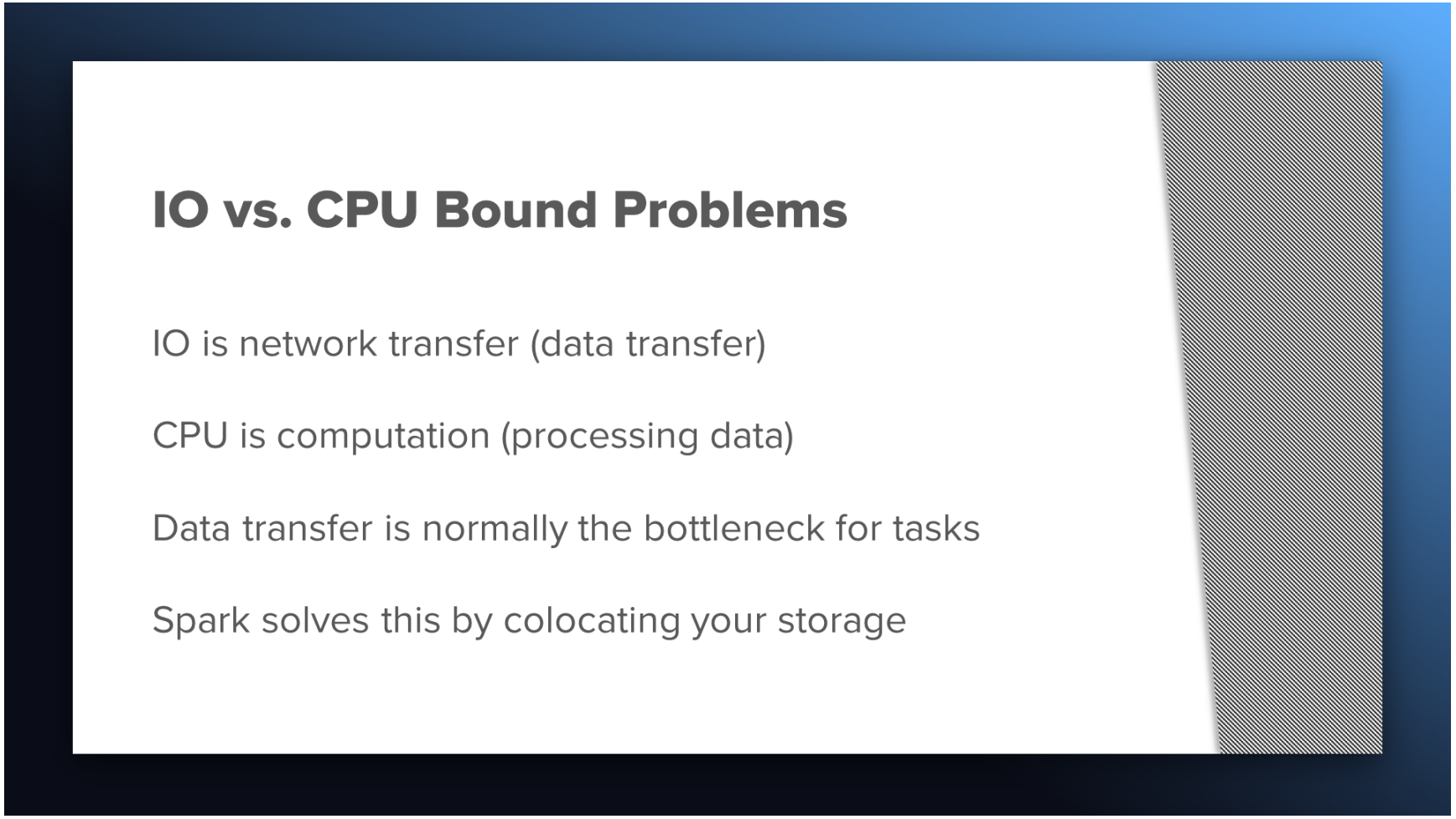
Slide 6: Architecture Needs: ETL Process

Slide 7: Other Architecture Needs

Slide 8: Decoupled Storage and Compute



Slide 9: IO vs CPU Bound Problems



Slide 10: Data Sources

Data Sources

Traditional databases like Postgres, SQL Server, and MySQL

NoSQL databases/documents stores like MongoDB

Distributed databases like Cassandra and Redshift

Blob stores like S3 and the Azure Blob

Message brokers like Kafka and Kinesis

Data warehouses like Hive

File types like CSV, Parquet, and Avro

Slide 11: Online Analytical Processing (OLAP)

Online Analytical Processing (OLAP)

- Reporting
- Ad hoc analysis
- Blob stores
- Data warehouses

Slide 12: Online Transaction Processing (OLTP)

Online Transaction Processing (OLTP)

Databases

Web traffic

Streaming