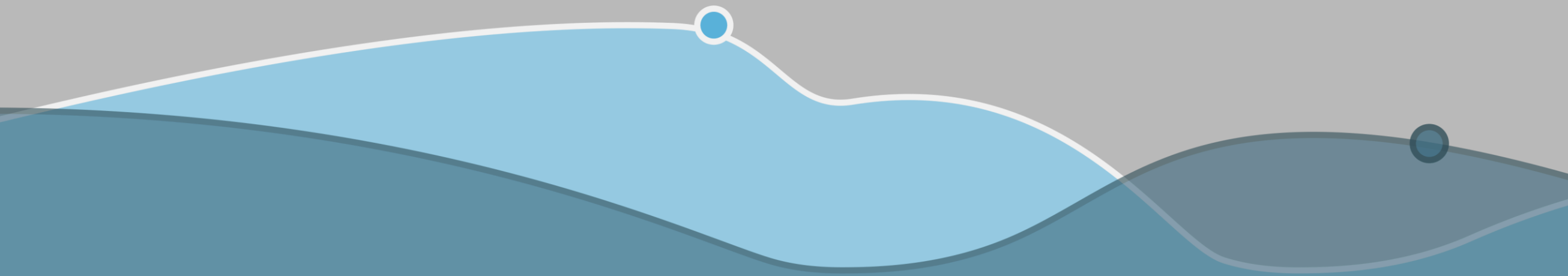




Cortana Analytics Workshop

Sept 10 – 11, 2015 • MSCC

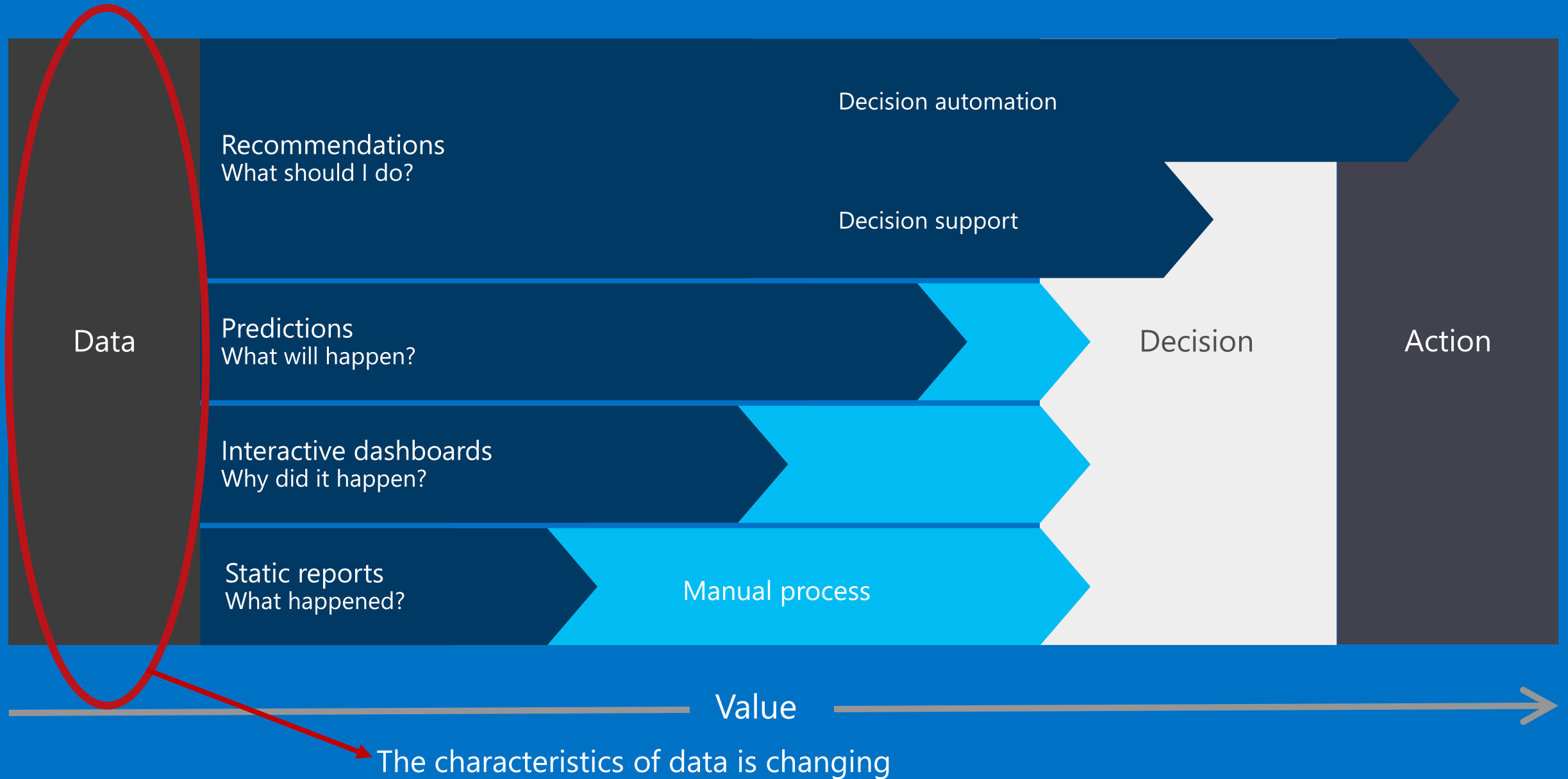


Data Warehousing in Cortana Analytics

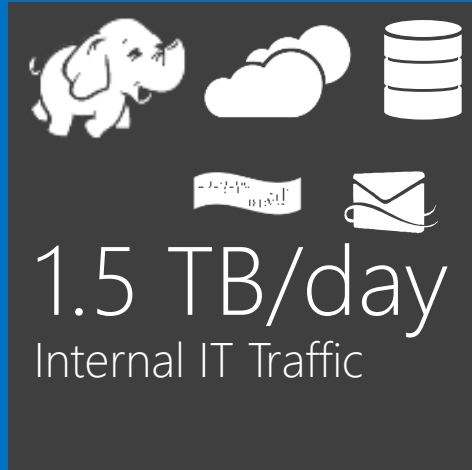
Matt Usher
Senior Program Manager



From data to decisions and actions



Oil and Gas Exploration



Oil and Gas organizations must synthesize a vast amount of information from equipment sensors, geolocation data, transactions, and production results to improve performance and reduce costs

Improve time to first oil with better use of mapping and sensor data

Triangulate geolocation data, geographical surveys, and testing data from internal and public sources with a Microsoft Data Analytics solution. Help increase speed to first oil and reduce nonproductive time.

Improve production with better data analytics, collect and manage sensor data with HDInsight and SQL Data Warehouse, and use tools like Power View to track performance and optimize resources to boost revenue and reduce costs.



Smart Utility Management



Utilities can supply electricity more efficiently, and help customers (families, businesses, or factories) better understand their power consumption and reduce their bills

Use Smart Metering to better report & predict power consumption

Utilities that replace traditional power meters with smart meters can use that data to improve planning, reduce costs, and help users be more efficient (and thus saving the utility even more). A Microsoft Data Analytics solution can help manage smart meter data, and combined with other sources such as geolocation info and billing databases, can help balance loads and communicate individual user savings opportunities. 3



Traffic Flow Optimization



50,317

Collisions in Los Angeles in 2002

Collect data from traffic cameras, cell towers, road sensors, etc., to quickly & accurately report & predict traffic flow to optimize roads & communicate to drivers

Optimize road system traffic flow and improve service information

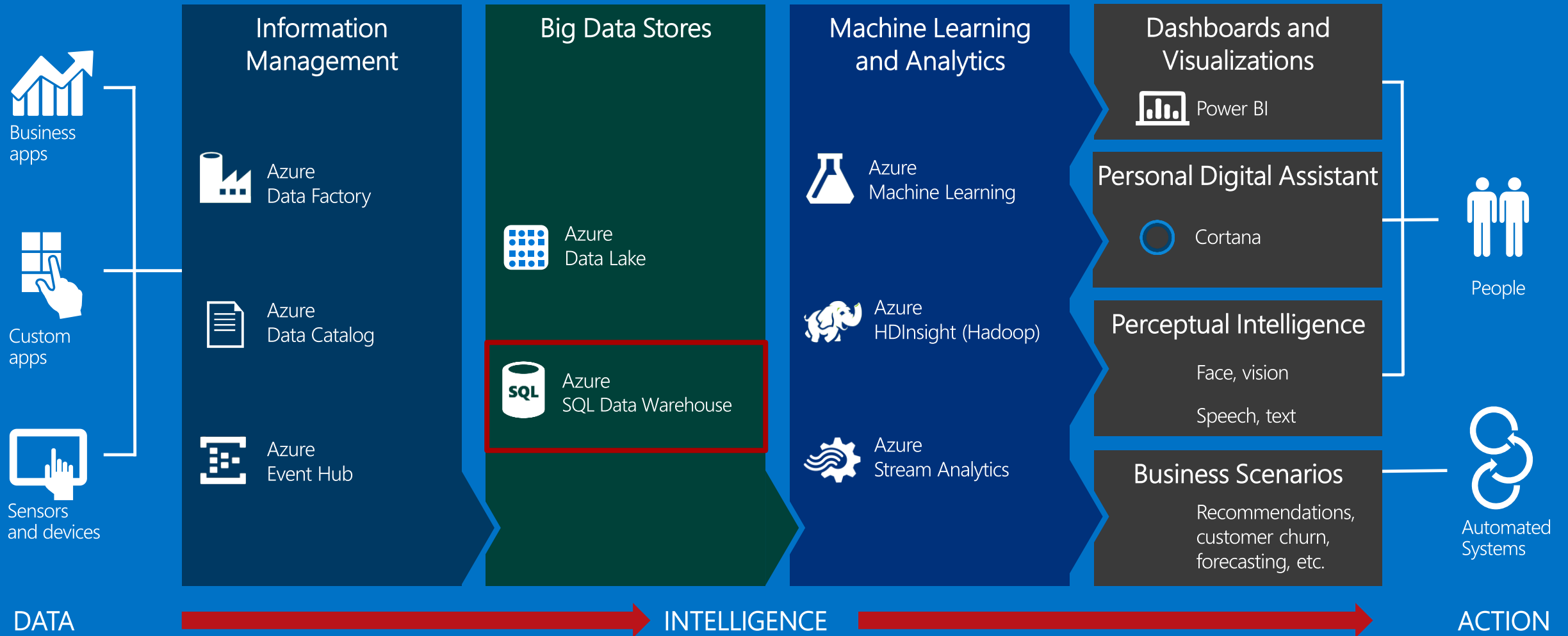
Combine traffic sensor and anonymous cellphone data to optimize city traffic flow to improve travel time and reduce slowdowns that could lead to more accidents.

Avoid shipping delivery issues with a real-time traffic service integrated with your planning software. Re-route around traffic congestion, or plan routes to travel busy roads at non-peak times.



Cortana Analytics Suite

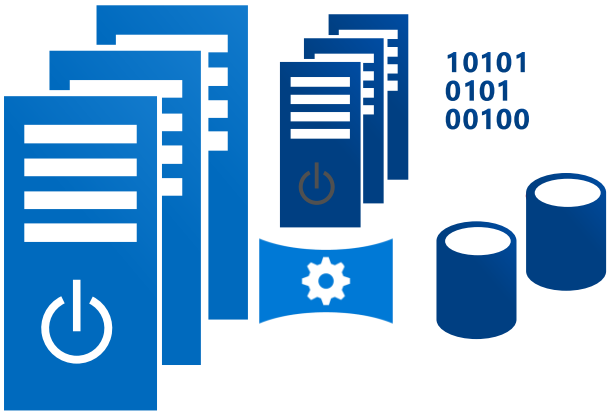
Transform data into intelligent action



Introducing Azure SQL Data Warehouse

A relational **data warehouse-as-a-service**, fully managed by Microsoft.
Industries first **elastic** cloud data warehouse with proven SQL Server capabilities.
Support your **smallest to your largest** data storage needs.

Elastic scale & performance

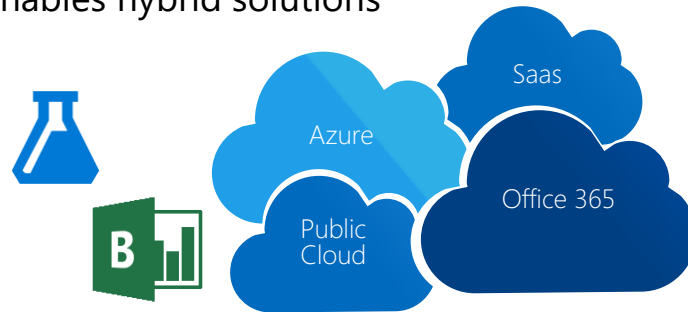


- Scales to petabytes of data with MPP processing
- Resize compute nodes < 1 minute
- Faster time to insight than other SMP offering
- Designed for "on-demand" workload

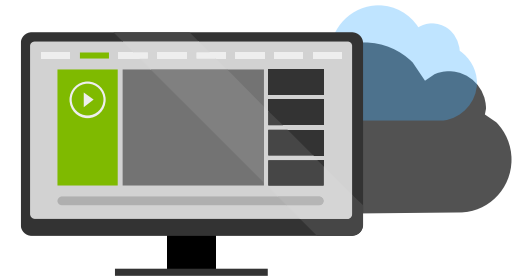
Powered by the Cloud

Integrated with Azure platform and other Microsoft services

Enables hybrid solutions

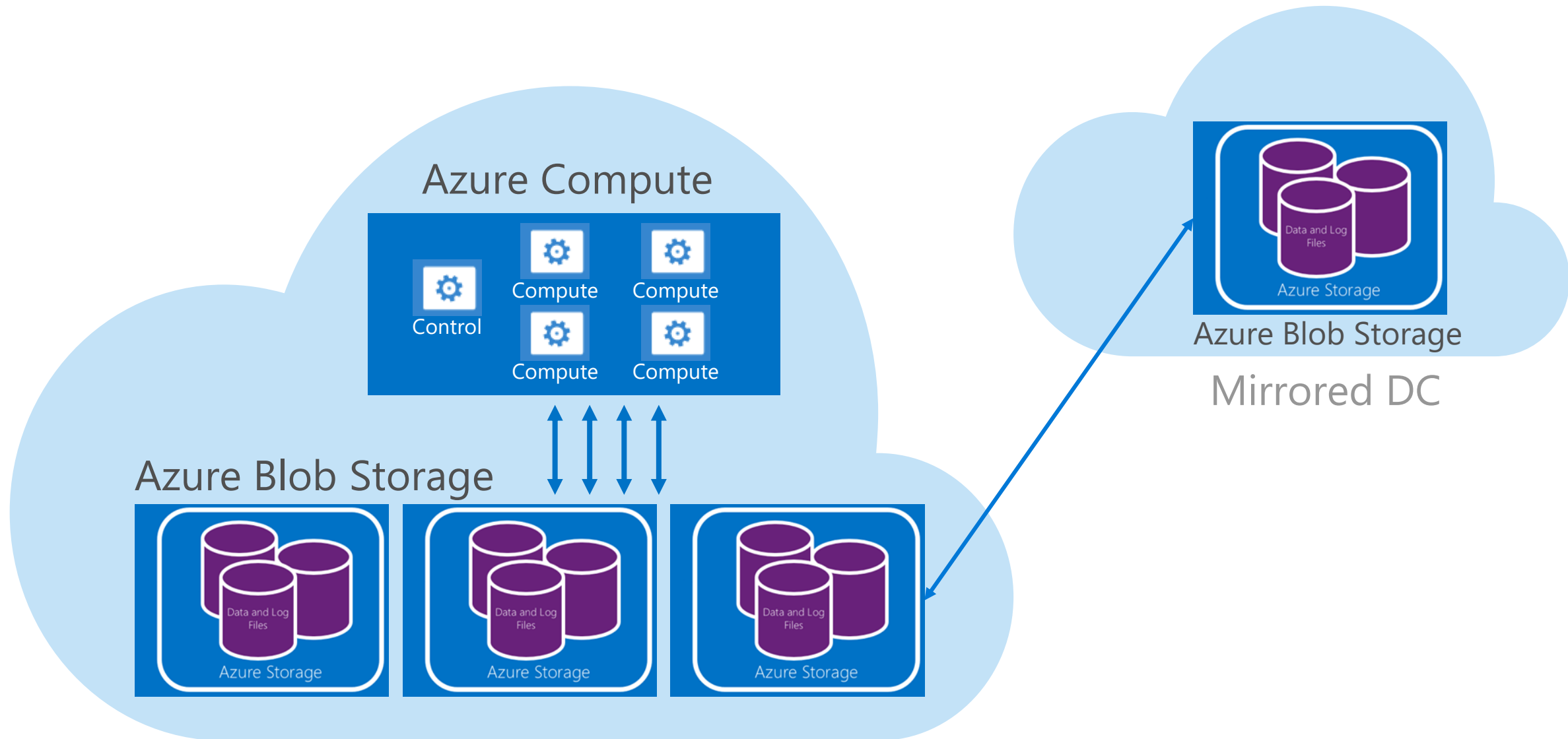


Market Leading Price & Performance



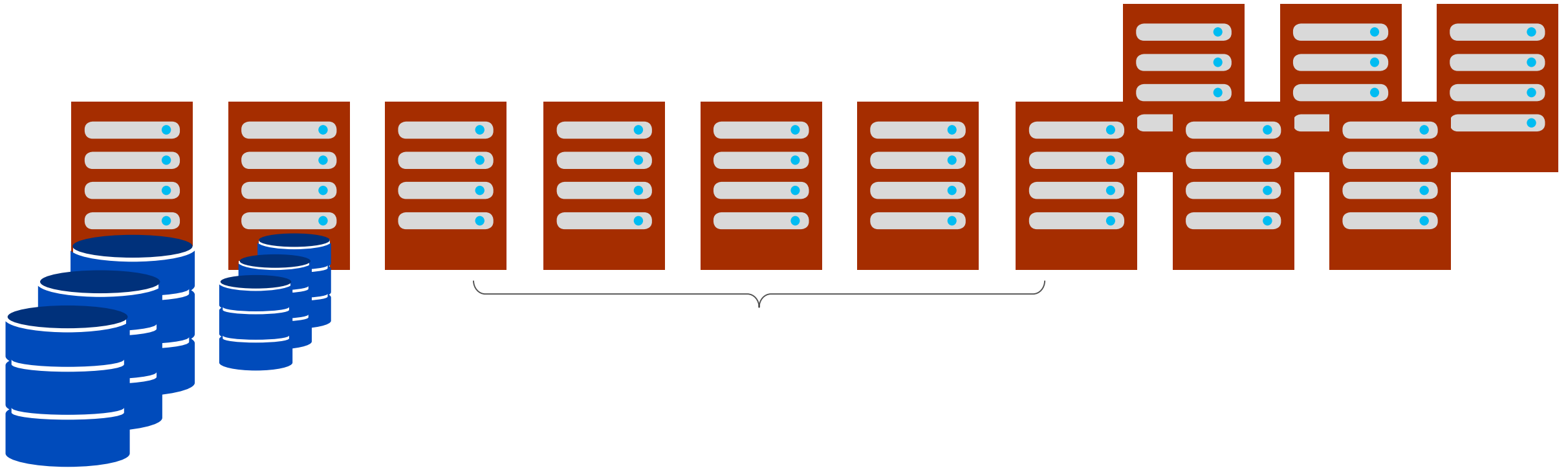
- Simple compute & storage billing
- Pay for what you need
- High performance without rewriting applications
- Low cost for latent data

Separating Compute and Storage

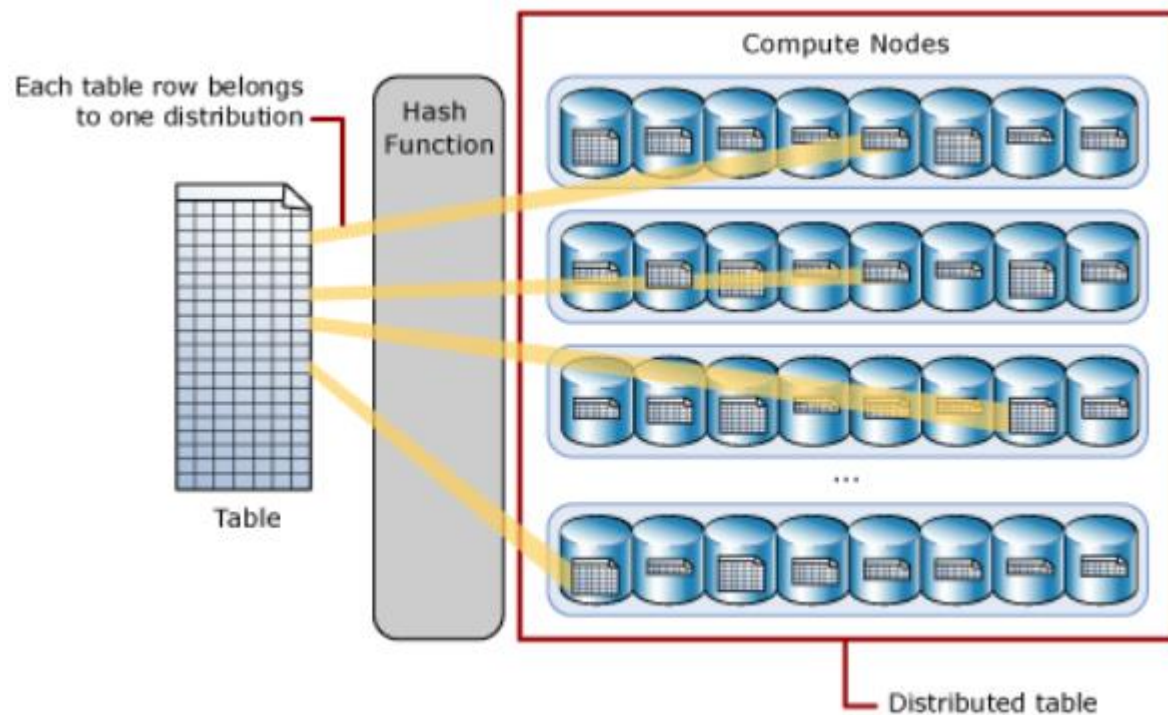


Elastic Scale

Spin up for heavy workloads, cycle down for daily activity
Buy time to insight based on what you need, when you need it
Choose the combo of compute and storage that meets your needs



Core Concepts – Distribution



```
CREATE TABLE [Products] ( ... )
```

```
WITH
```

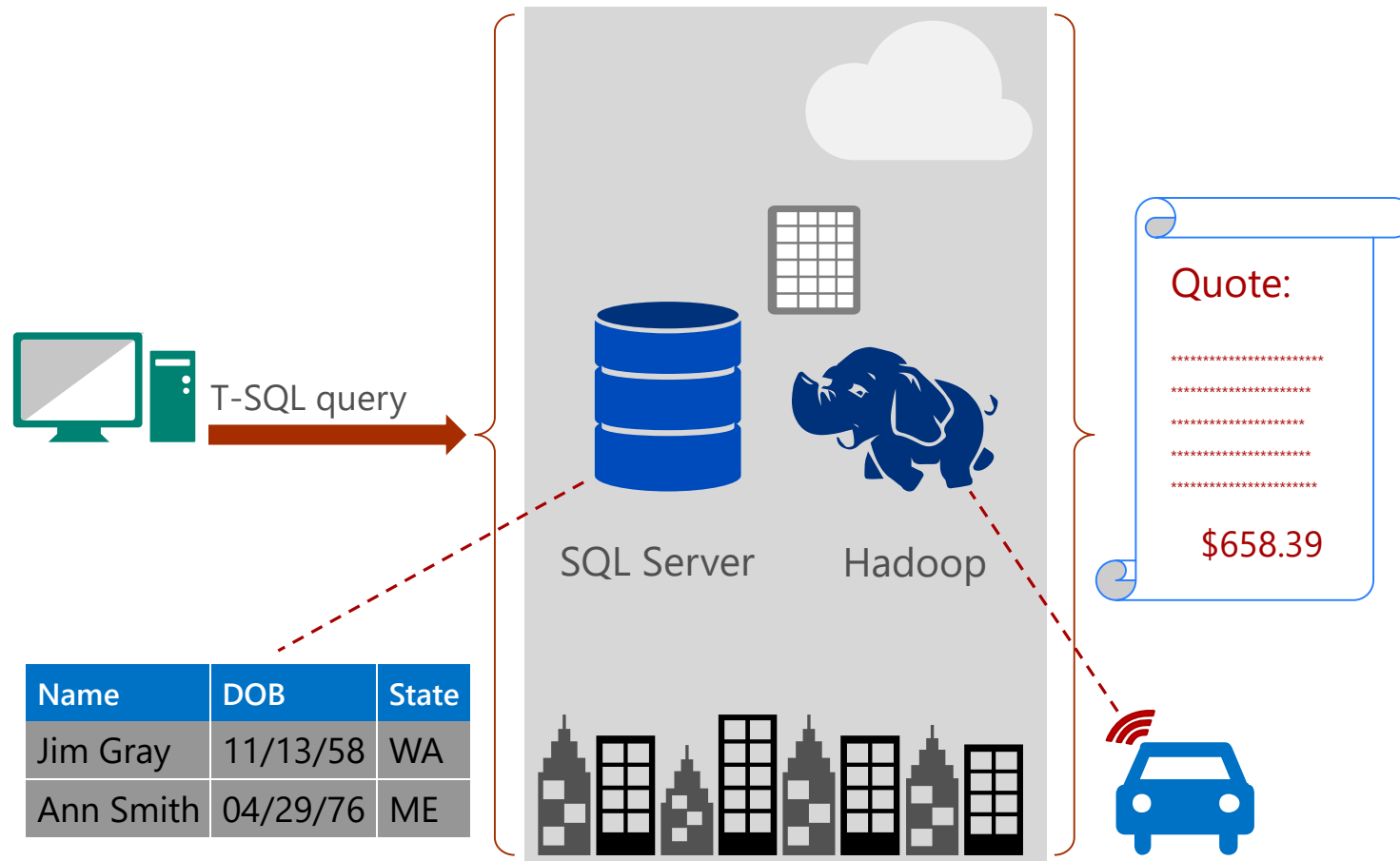
```
(
```

```
    DISTRIBUTION = HASH(<COLUMN>)
```

```
);
```

- Distributed tables have their data split across storage for performance
 - Round robin or hash-distributed
- Each Compute node works only on data that is local

Query unstructured data via PolyBase/T-SQL



Capability

T-SQL for querying relational and non-relational data across SQL Server and Hadoop

Benefits

- ➔ New business insights across your data lake
- ➔ Leverage existing skillsets and BI tools
- ➔ Faster time to insights and simplified ETL process

SQL Server Compatibility

Mature enterprise-ready SQL for sophisticated DW scenarios
Existing SQL Server scripts and tools just work
Continuous enhancements on language surface

User-Defined Functions & Stored Procedures

Modular programming
(write once, execute multiple times)

Faster code execution

Encapsulated programming logic

Table Partitioning

Easier maintenance of large tables

Improves performance

Enhanced scalability and availability

Collations

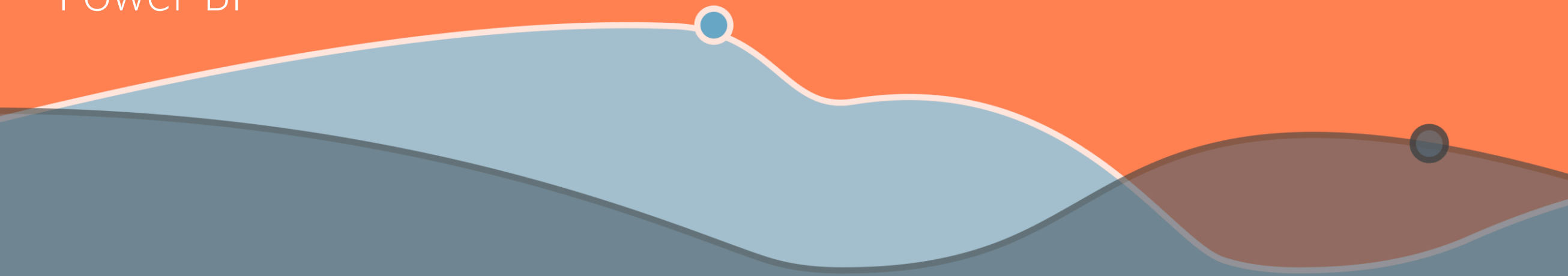
Allows proper use and comparisons of characters in different languages

Indices & Column-Store Support

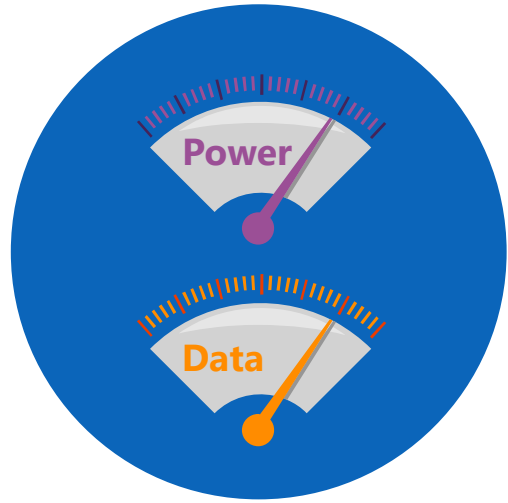
Mature Column-Store technology for best-in-class DW query performance

Demo

Event Hub > Stream Insights > SQL Data Warehouse >
Power BI



Azure SQL Data Warehouse



Fully
Elastic



Cloud
Powered



Cost
Effective



Visit <http://aka.ms/SQLDW> to get started today

Learn More

Documentation

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