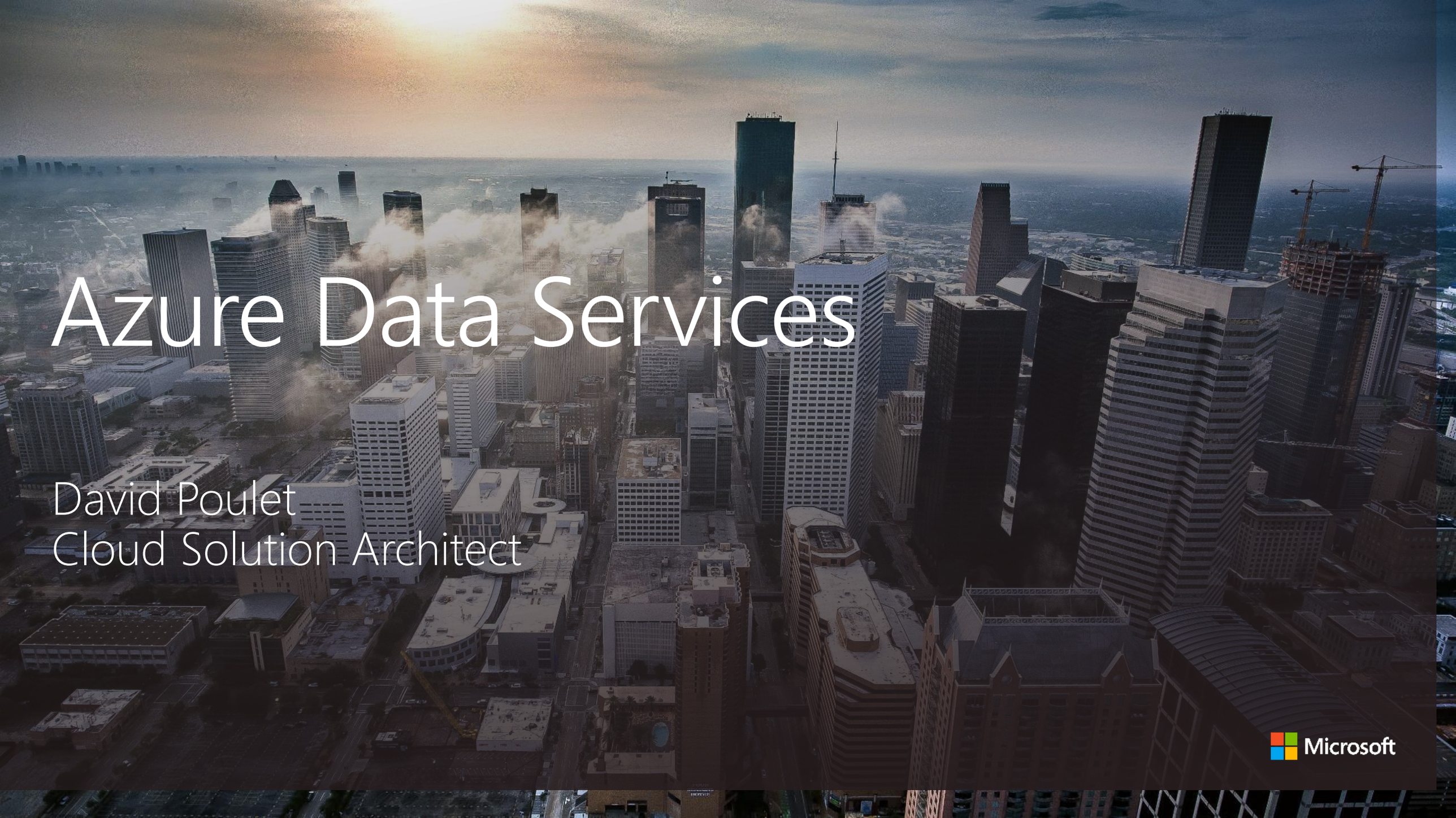
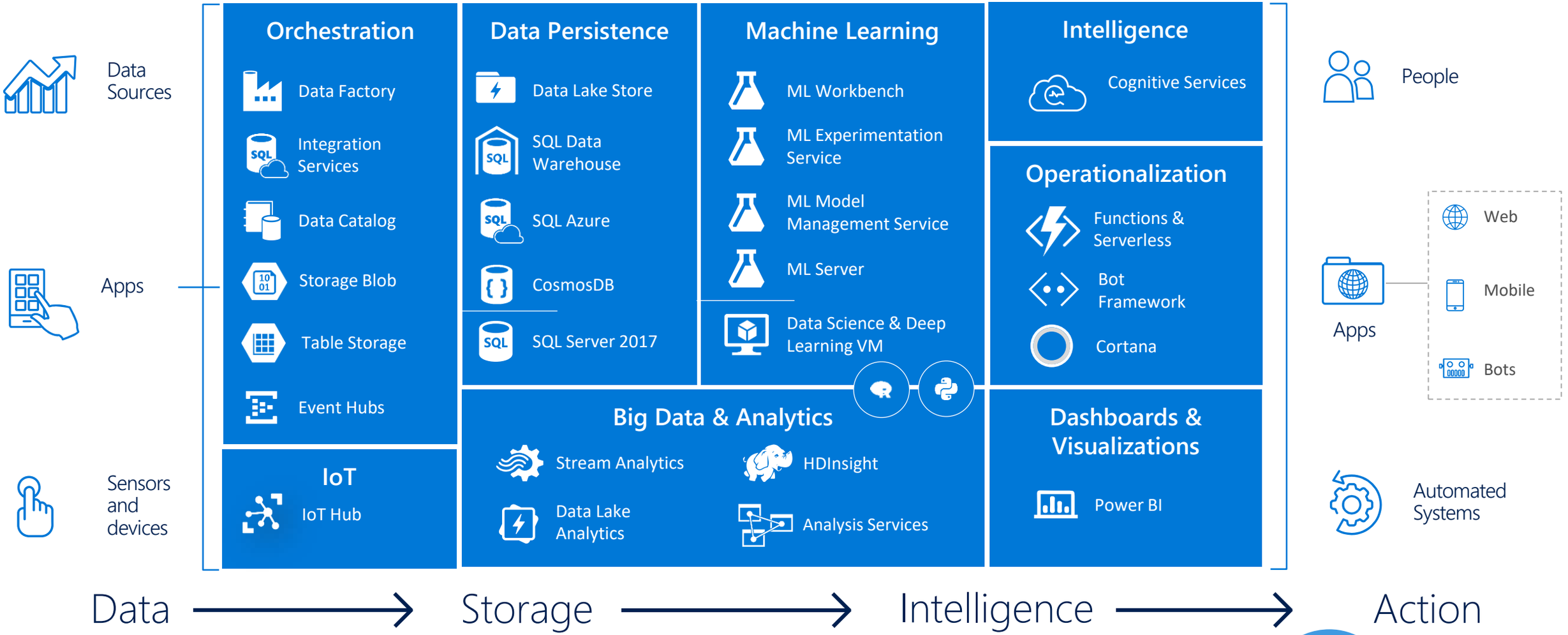


Azure Data Services

David Poulet
Cloud Solution Architect

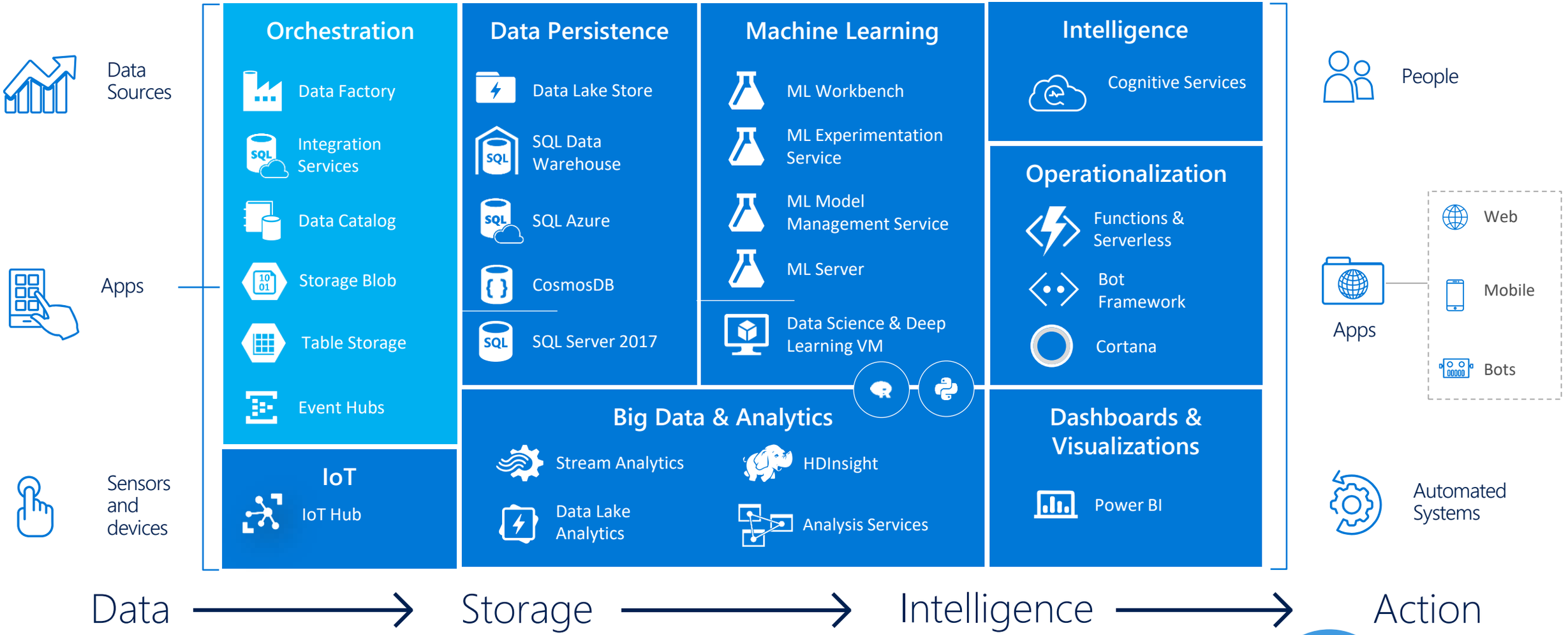
Microsoft

Azure Data Platform



Orchestration and Ingestion

Orchestration and Ingestion



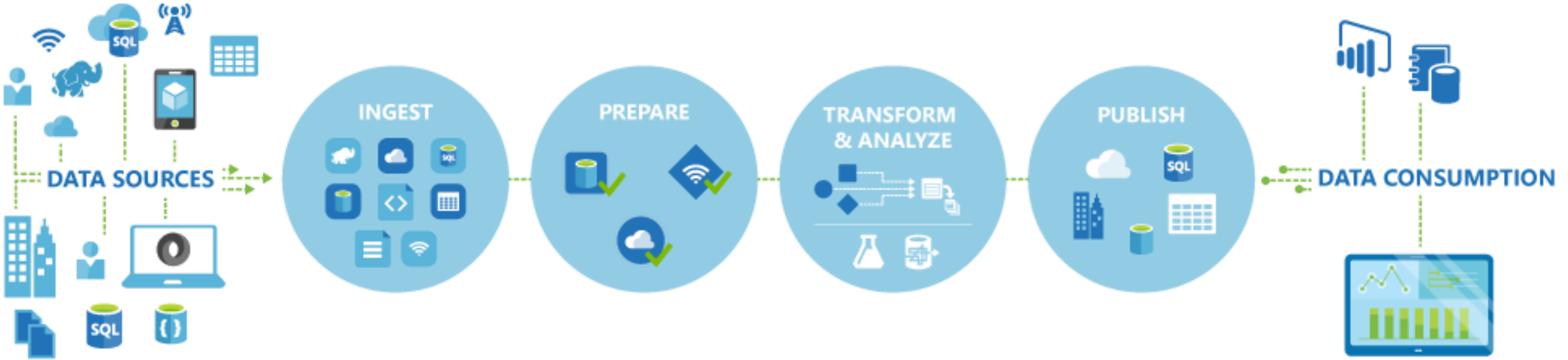
Azure Data Factory v2

Fully Managed ETL/ELT orchestration tool for the cloud

Create, Schedule and Manage data pipelines

Run SSIS packages directly in the cloud

Accelerate integration with multiple native connectors



Azure Data Catalog

An enterprise metadata management service

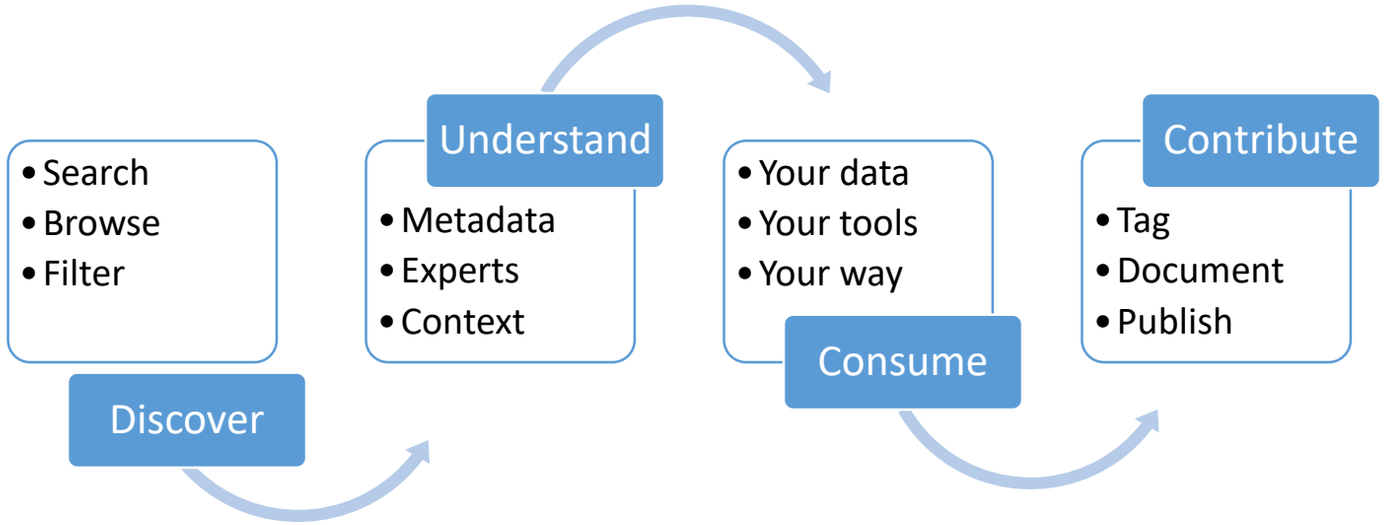
Register enterprise data assets

Discover data assets and unlock their potential

Connect with the tools you choose

Control who can discover registered assets

Integrate into existing tools and processes with open REST APIs



Event Hub

Cloud-scale telemetry ingestion from websites, apps and any streams of data

Log millions of events/second in near-realtime

Send event data automatically to storage

Use time based event buffering

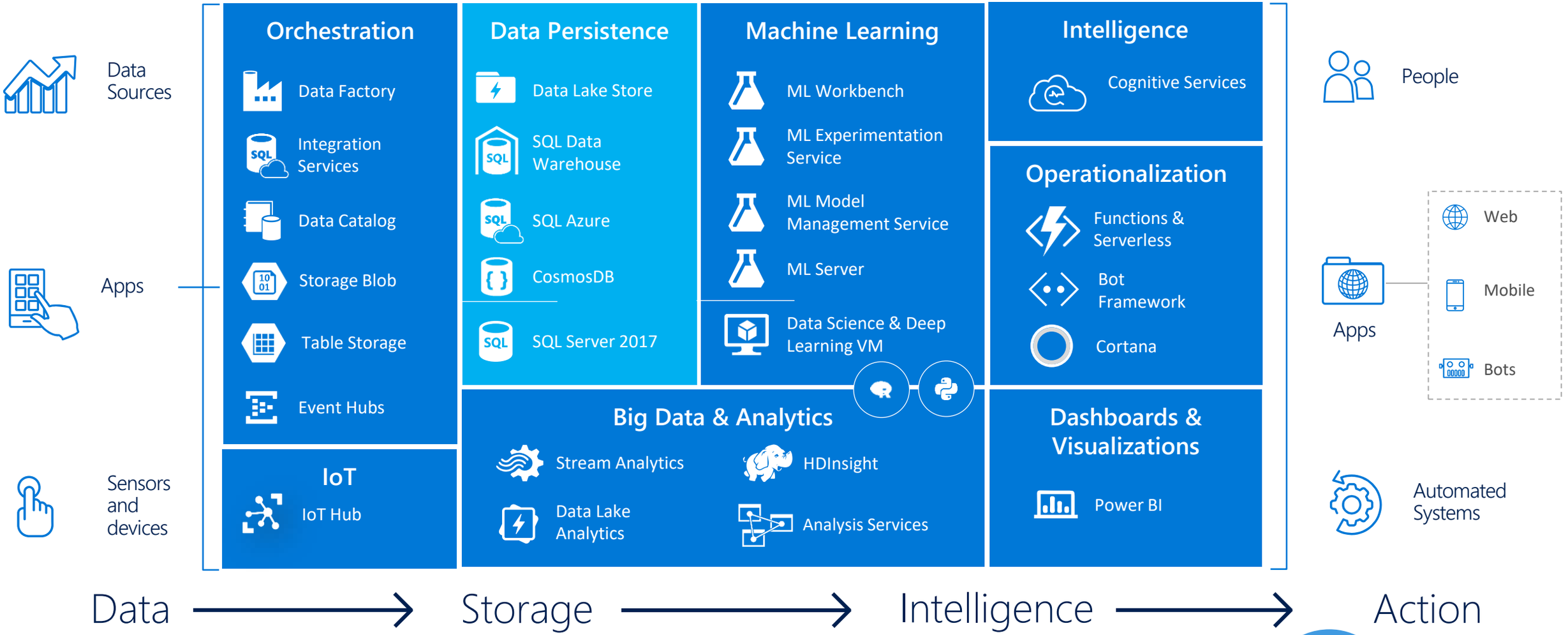
Managed service with elastic scale

Integrate seamlessly with other Azure services

Connect to numerous platforms with native libraries

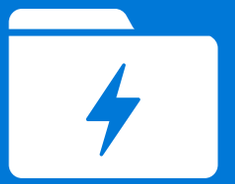
Data Persistence

Data Persistence



Azure Data Lake Store

A hyper-scale repository for Big Data analytics workloads



Hadoop File System (HDFS) for the cloud

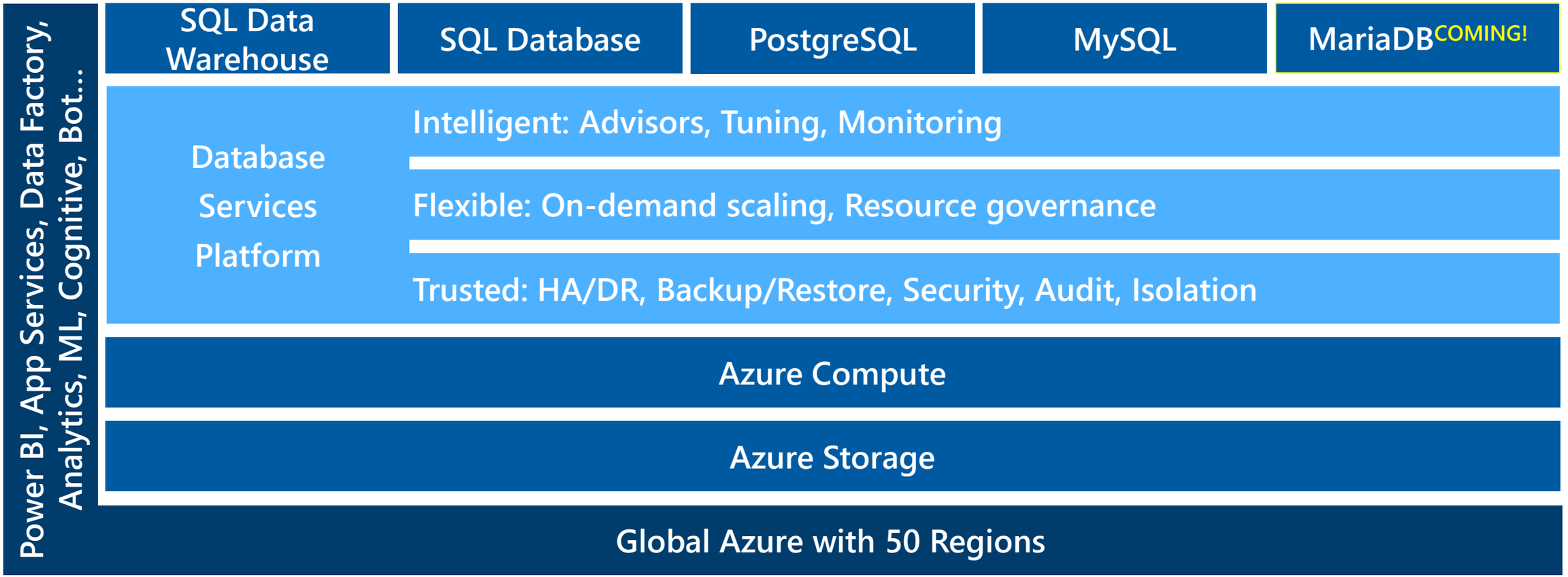
No limits to scale

Store **any data** in its native format

Enterprise-grade access control, encryption at rest

Optimized for analytic workload **performance**

Azure Relational Database Platform



Azure SQL Database

THE INTELLIGENT CLOUD DATABASE FOR APP DEVELOPERS

Learns & adapts

Realize automatic performance improvements

Scales on the fly

Change performance levels and storage without downtime

Enables multi-tenant SaaS apps

Easily manage multi-tenant apps database isolation

Works in your environment

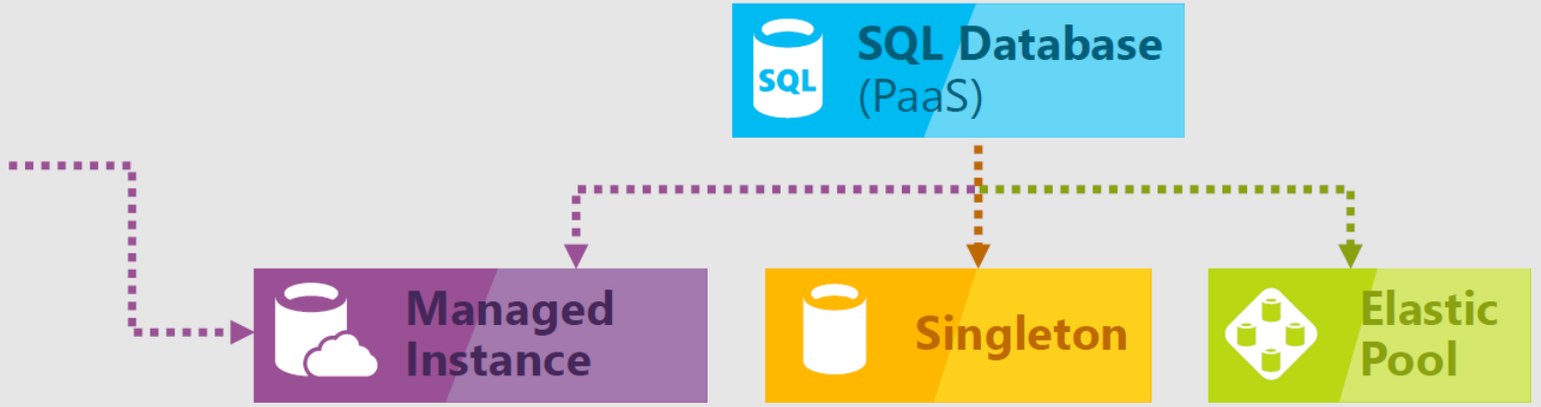
Develop your app with the tools and platforms you prefer

Secures & protects

Build security-enhanced apps with industry-leading compliance

What is SQL Database Managed Instance?

A flavor of SQL DB designed to enable easy migration to fully managed PaaS, for almost any application!



Easy lift and shift

- Fully-fledged SQL instance with nearly 100% compat with on-prem

Fully managed PaaS

- Built on the same PaaS service infrastructure
- All PaaS features

Full isolation and security

- Native VNET implementation
- Private IP addresses

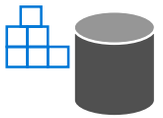
New business model

- Competitive
- Transparent
- Frictionless

Azure SQL Data Warehouse

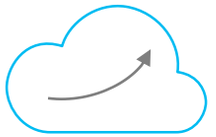
INDUSTRY LEADING PERFORMANCE & SECURITY AT SCALE IN THE CLOUD

Fits your needs



Modular solution for your unique needs and disparate data sources

Unlimited scale



Most performant built on SQL Server engine

Fast time to value

Seamlessly integrate with Microsoft & 3rd party services

Trusted & reliable

Enhanced security with encryption, audit, VNET and industry-leading compliance

Azure Database for Postgres and MySQL

Work in the DB of your choice

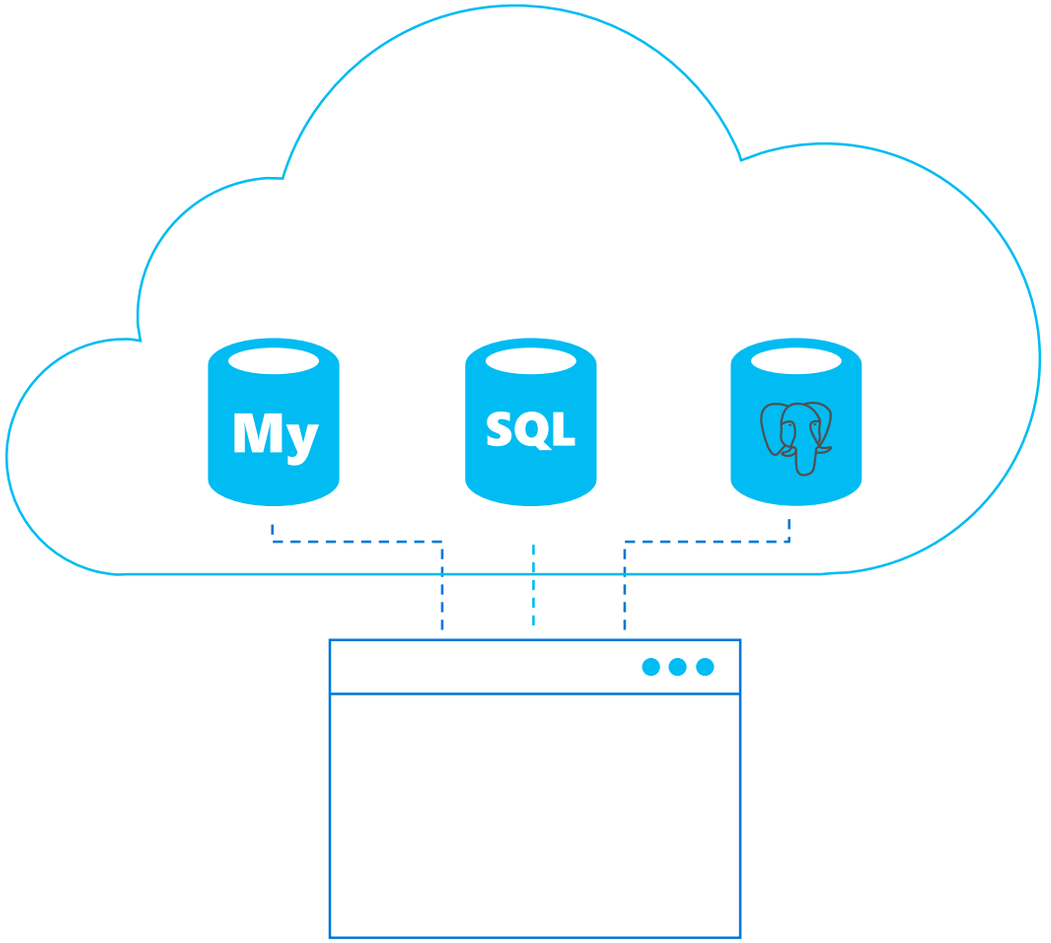
Create with built-in high availability

Set up in minutes, scale on the fly

Sustain performance with adaptive improvements

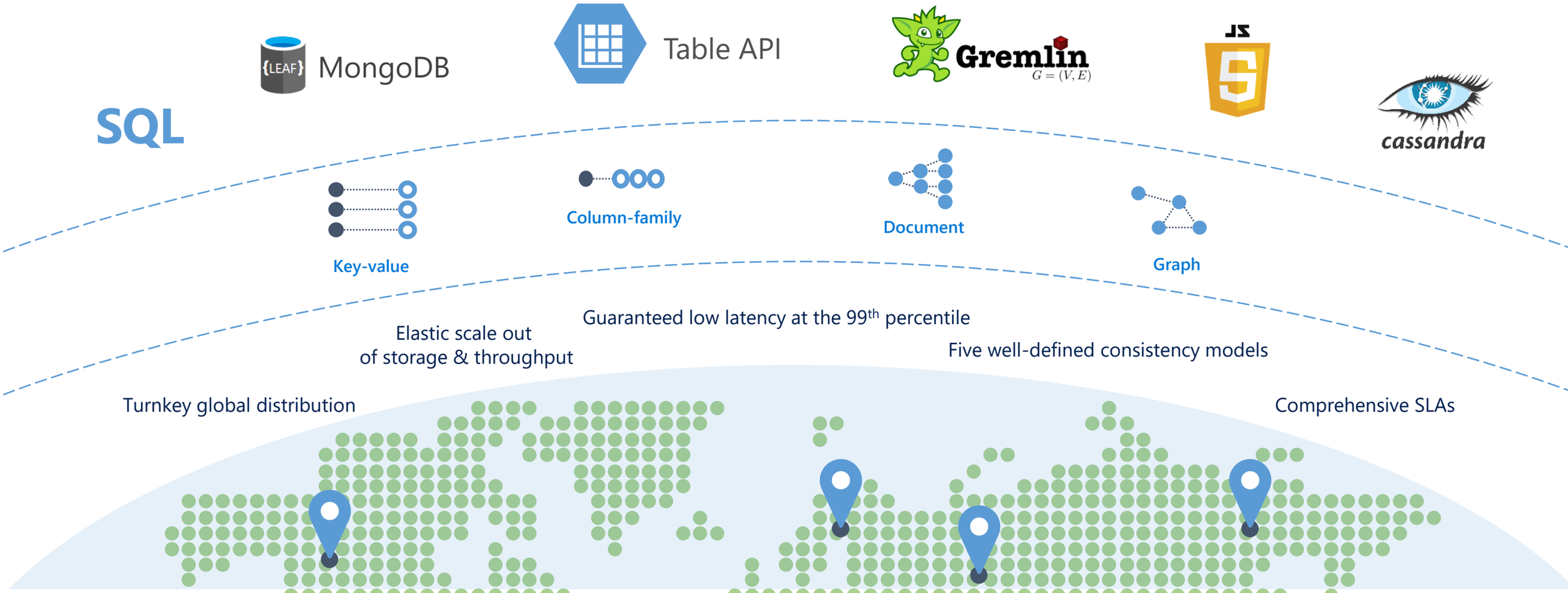
Rest easy with unparalleled security

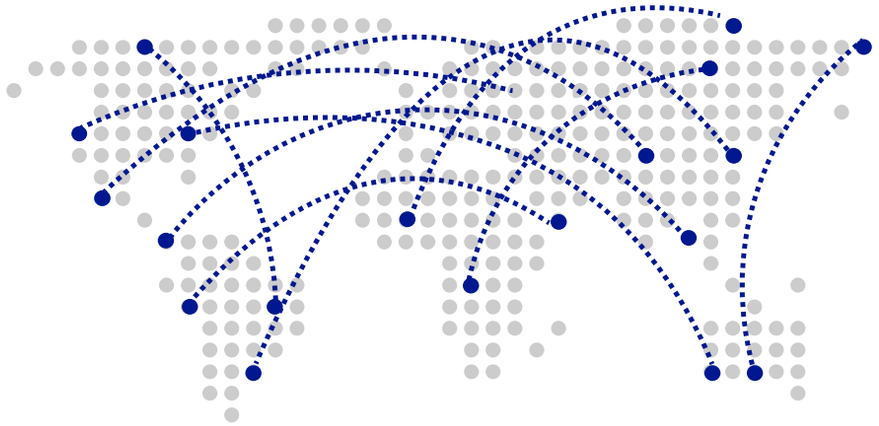
Standard tier PREVIEW



Azure Cosmos DB

A globally distributed, massively scalable, multi-model database service





Turnkey Global Distribution

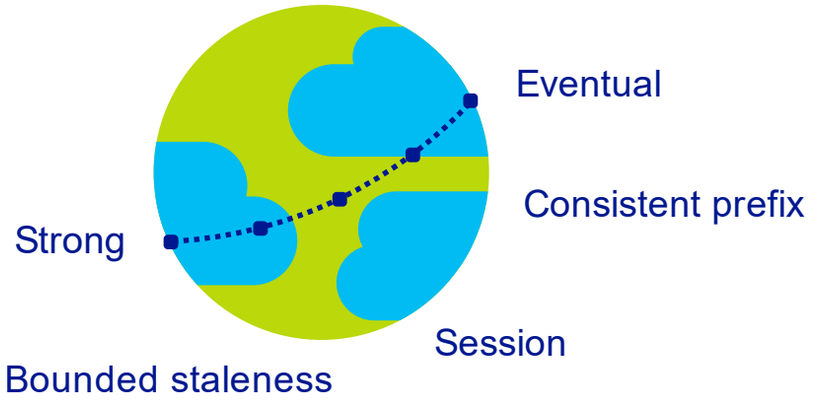
Worldwide presence as a Foundational Azure service

Automatic multi-region replication

Multi-homing APIs

Manual and automatic failovers

Designed for High Availability



Multiple, well-defined consistency choices

Global distribution forces us to navigate the CAP theorem

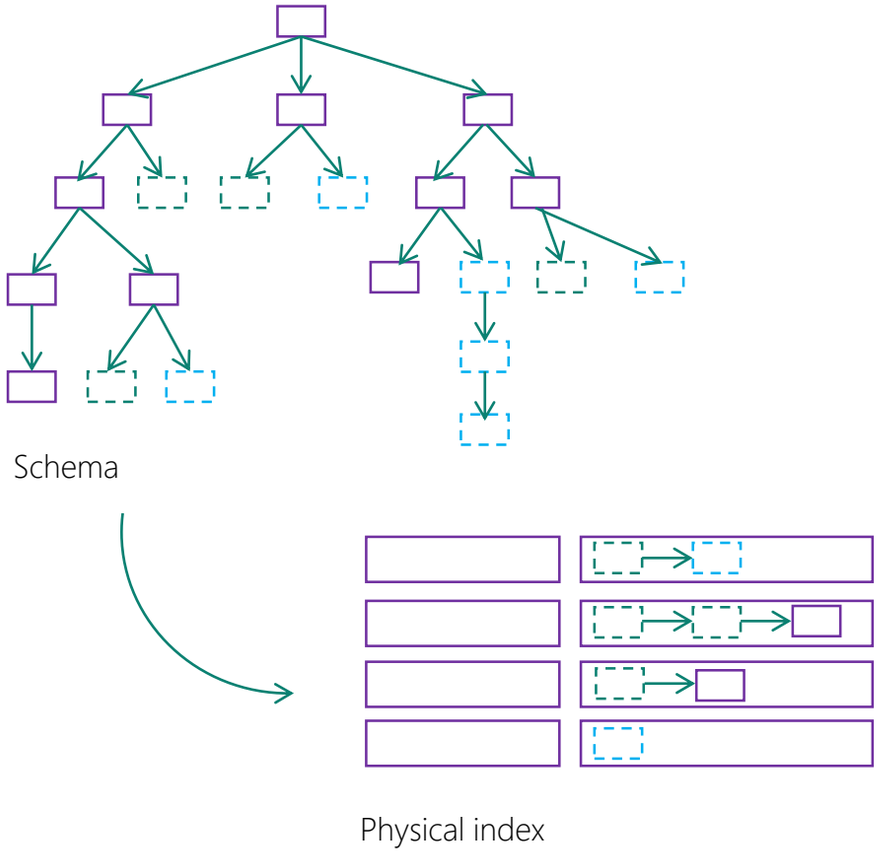
Writing correct distributed applications is hard

Five well-defined consistency levels

Intuitive and practical with clear PACELC tradeoffs

Programmatically change at anytime

Can be overridden on a per-request basis



Schema-agnostic, automatic indexing

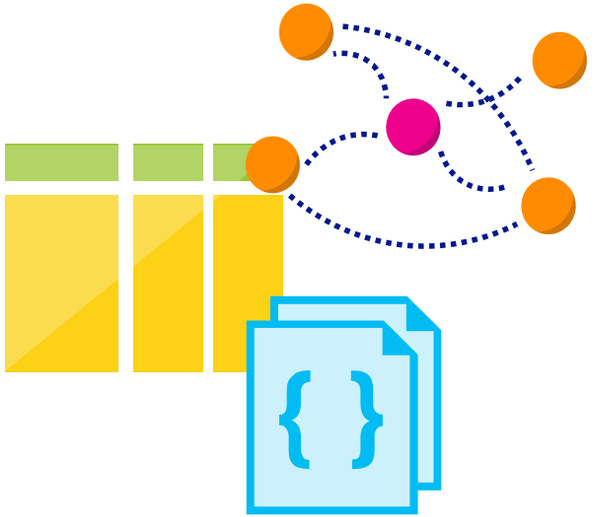
At global scale, schema/index management is painful

Automatic and synchronous indexing

Hash, range, and geospatial

Works across every data model

Highly write-optimized database engine



Multi-model, multi-API

Database engine operates on Atom-Record-Sequence type system

All data models can be efficiently translated to ARS

Multi-model: Key-value, Document, and Graph

Multi-API: SQL (DocumentDB), MongoDB, Table, and Gremlin

More data-models and APIs to be added

Industry-leading, enterprise-grade SLAs

99.99% availability – even with a single region

Made possible with highly-redundant storage architecture

Guaranteed durability – writes are majority quorum committed

First and only service to offer SLAs on:

- Low-latency
- Consistency
- Throughput

Security & Compliance

Always encrypted at rest and in motion

Fine grained “row level” authorization

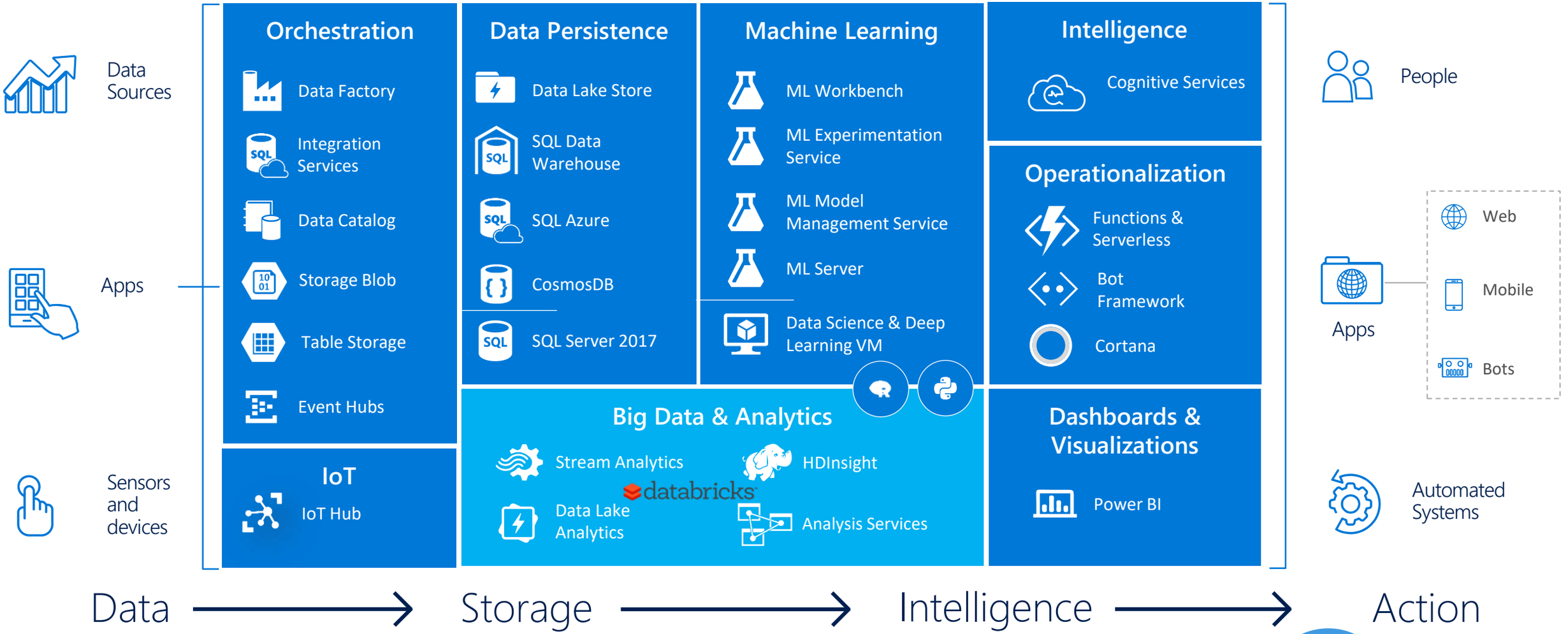
Network security with IP firewall rules

Comprehensive Azure compliance certification:

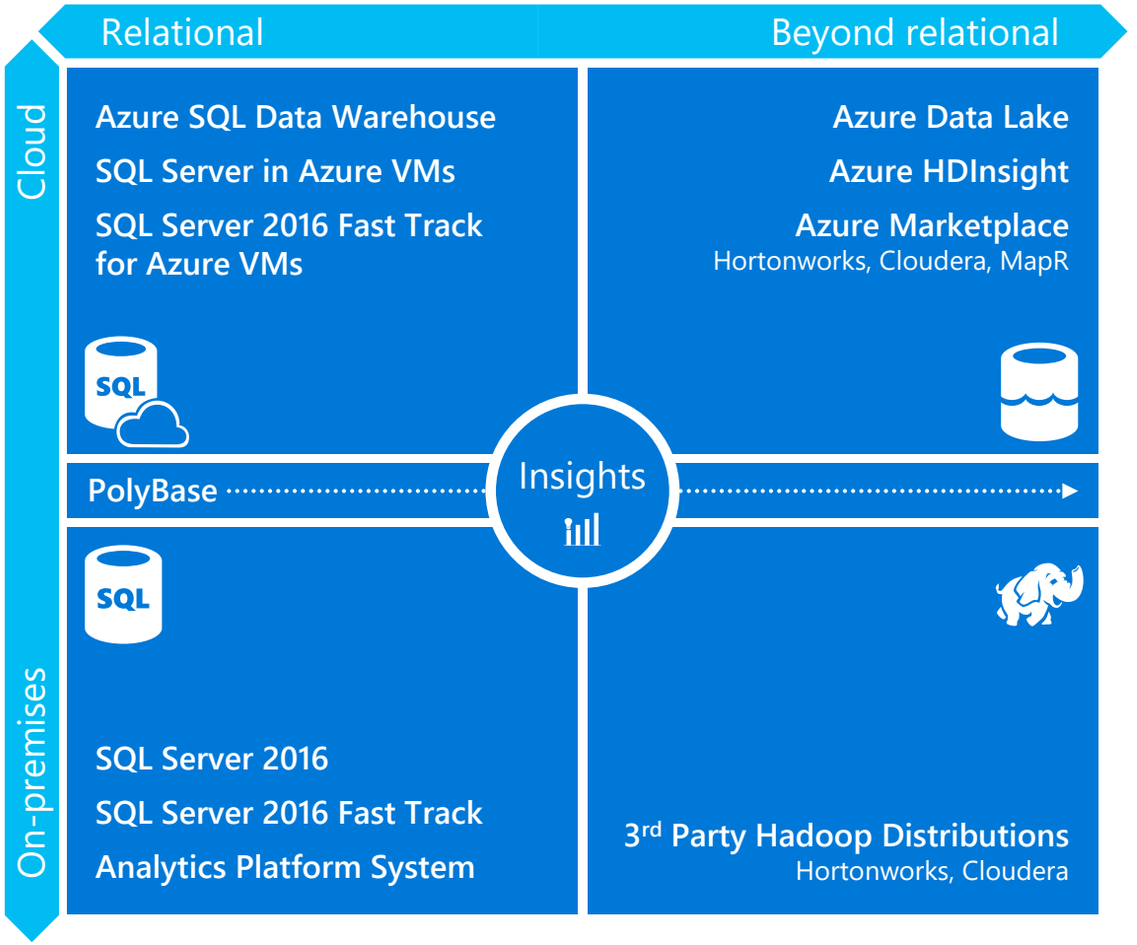
- ISO 27001
- ISO 27018
- EUMC
- HIPAA
- PCI
- SOC1 and SOC2

Big Data & Analytics

Big Data and Analytics



Big Data and Modern Data Warehousing



Fastest insights

Real-time insights with breakthrough query performance

Analytics built-in

Real-time insights with analytics built in

Choice of deployment

Leading solutions—on-premises and in the cloud

Layers of security

Least vulnerable database 6 years in a row

Any data, any scale

A hybrid solution that grows in step with customer needs

More for the price

Customers do more with industry-leading TCO

Azure Analysis Services

Proven Technology Enterprise-grade BI semantic modelling based on SSAS

Cloud Powered Easy to provision, scale and manage as a Platform-as-a-Service solution

Interactive Visualisation Quick, highly interactive self-service data discovery with support of major data visualization tools

Built for **Hybrid Data** Access data on premise, in the cloud, or both.

Develop in a **Familiar Environment** Leveraging existing tools and skills. Easily deploy SQL Server tabular models to the cloud.

*IDC study "The Business Value and TCO Advantage of Apache Hadoop in the Cloud with Microsoft Azure HDInsight"

Azure Data Lake Analytics

A distributed analytics service

Distributed analytics service built on Apache YARN

Elastic scale per query lets users focus on business goals—not configuring hardware

Includes U-SQL—a language that unifies the **benefits of SQL with the expressive power of C#**

Integrates with Visual Studio to develop, debug, and tune code faster

Federated query across Azure data sources

Enterprise-grade **role based access control**

Native Azure Stream Analytics Solutions

Apache Storm on HD Insight

Spark Streaming on HD Insight

Stream Analytics

Databricks

Azure Stream Analytics

Easy to Develop Massively parallel real-time analytics platform

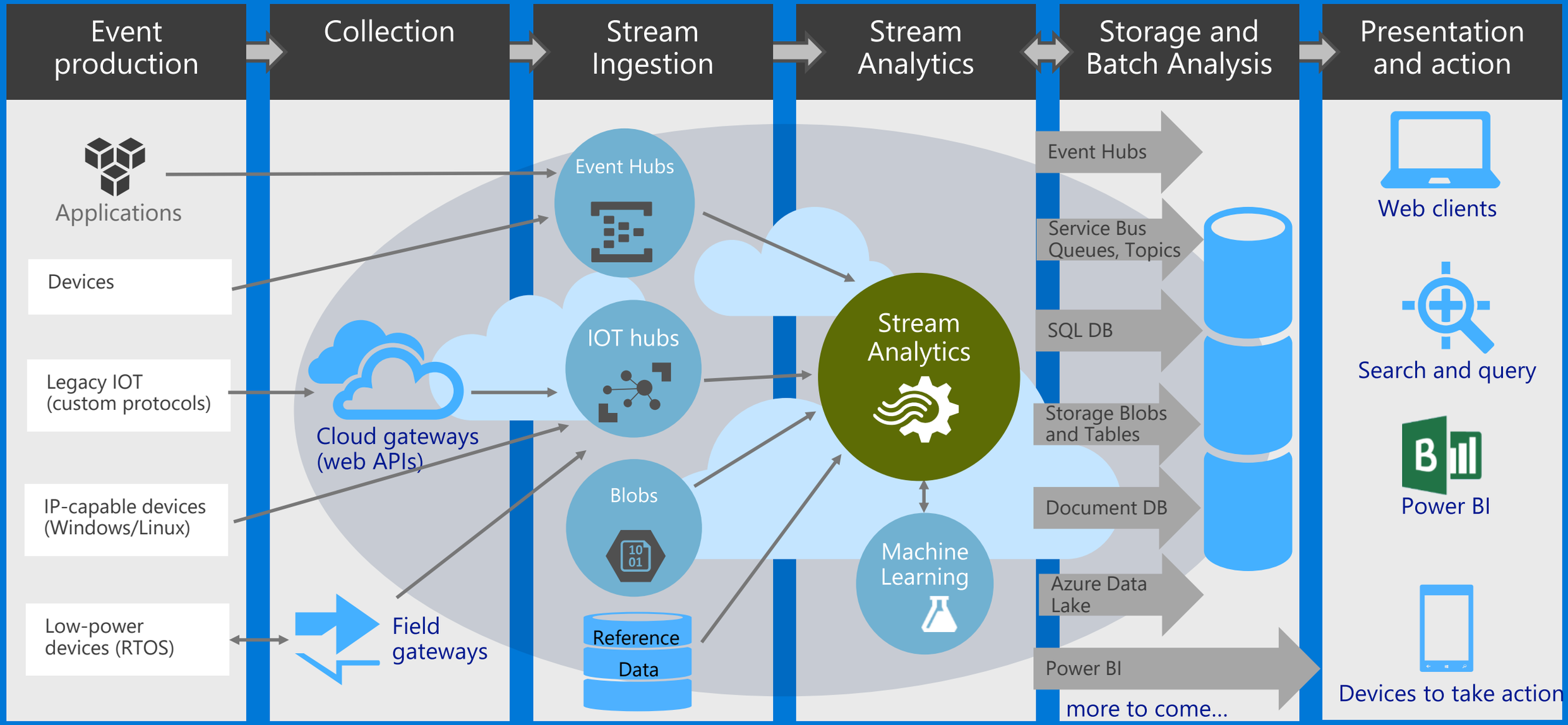
Fully Managed Platform-as-a-Service solution, deployed in seconds.

Enterprise Scale Quick, Ingest millions of events/second, 99.9% availability, guaranteed event delivery and auto-recovery

Use simple **SQL like** language for ease of use or custom code for advanced use cases.

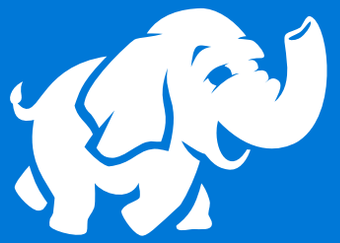
Visualise results in real time with Power BI, or integrate with downstream data stores or processes such as Azure ML

Azure Stream Analytics Usage Pattern



Azure HDInsight

Hadoop as a Service on Azure



Fully-managed Hadoop and Spark for the cloud

100% Open Source Hortonworks data platform

Clusters up and **running in minutes**

Managed, monitored and supported by Microsoft with the **industry's best SLA**

Familiar **BI tools for analysis**, or open source notebooks for **interactive data science**

63% lower TCO than deploy your own Hadoop on-premises*

*IDC study "The Business Value and TCO Advantage of Apache Hadoop in the Cloud with Microsoft Azure HDInsight"

Azure Databricks

Spark as a Service on Azure

Fully-managed Databricks Spark in the cloud with autoscaling, cluster termination etc.

First Party Service Not a 3rd party or marketplace offering like other clouds.

Single engine for **batch, streaming, ML and Graph.**

Best in class Notebooks experience for **optimal productivity & collaboration**

Features **seamless integration with Azure services**, eg billing, Active Directory, PowerBI, SQL DW, SQL DB, ADLS etc

*IDC study "The Business Value and TCO Advantage of Apache Hadoop in the Cloud with Microsoft Azure HDInsight"

Advanced Analytics Patterns