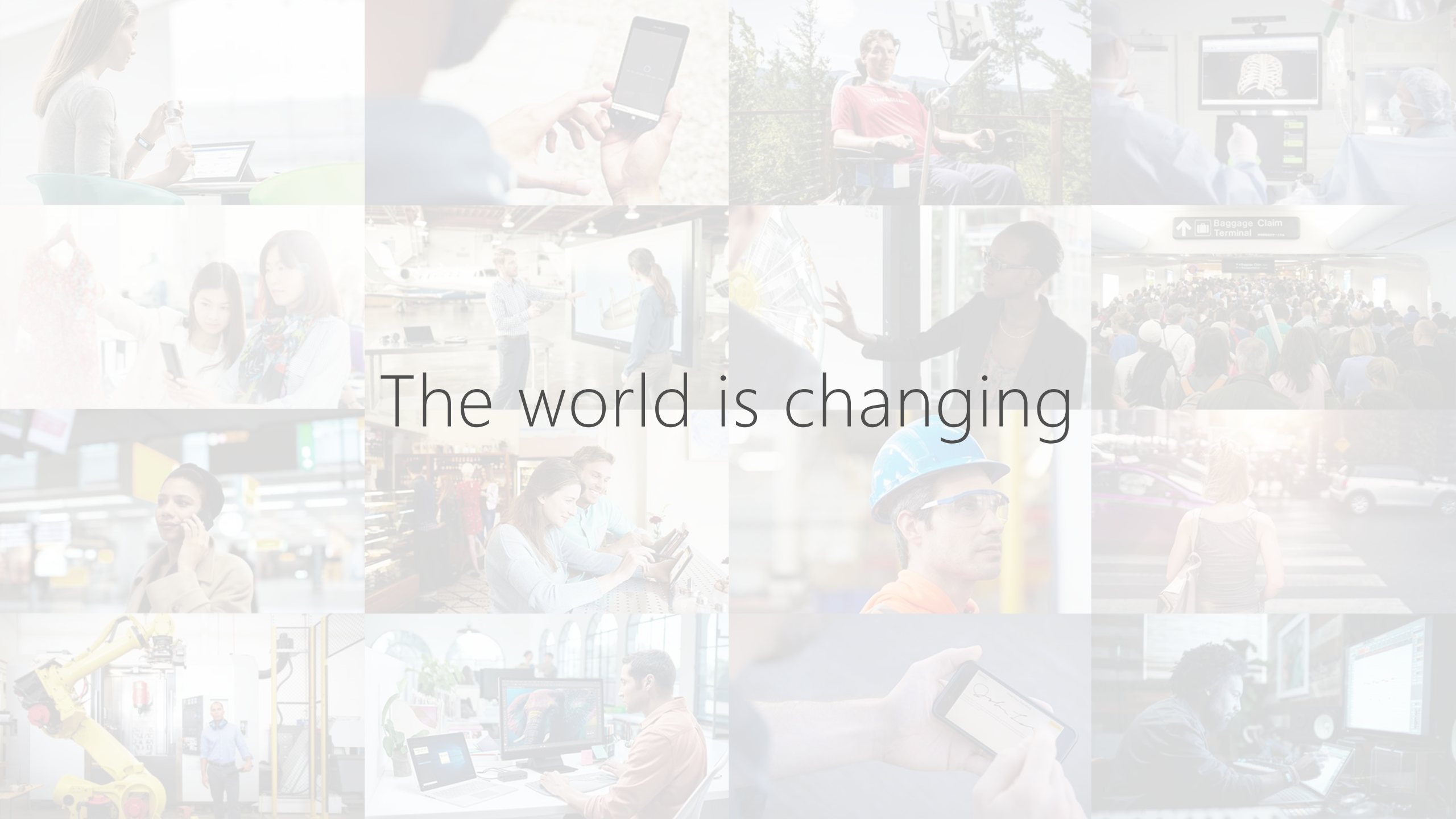




# Transform your data estate with cloud, data and AI

SQL Server 2017 and Azure Data Services



The world is changing





Data will grow to  
**44 ZB in 2020**

**Today, 80% of  
organizations**  
adopt cloud-first  
strategies

AI investment  
increased by  
**300% in 2017**



DATA

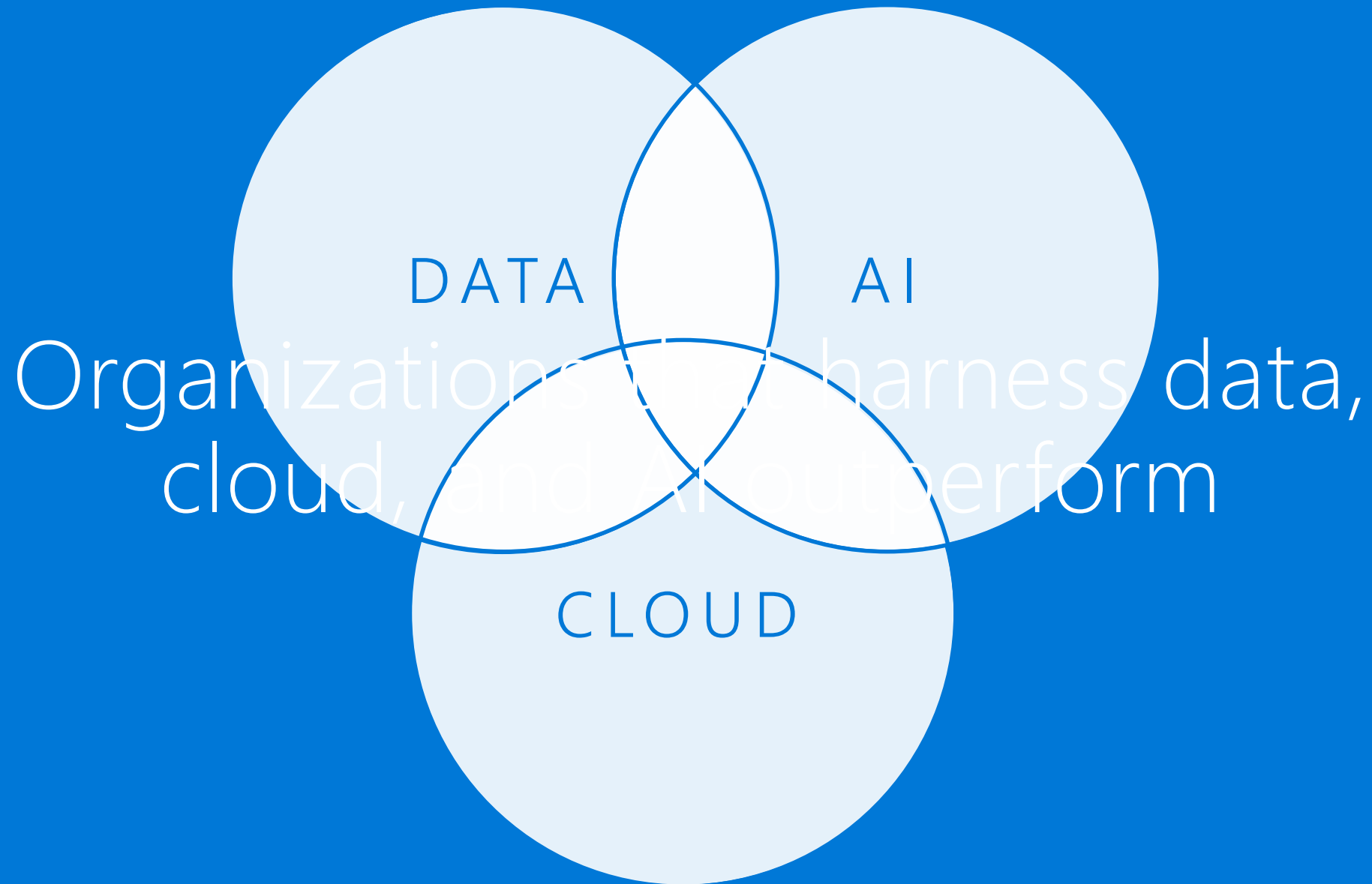
Today, 80% of organizations adopt cloud-first strategies

CLOUD

AI

Data will grow to 44 ZB in 2020

AI investment increased by 300% in 2017





# Companies surveyed include well-known enterprises across key industries

## Financial services



## Retail



## Manufacturing



## Consumer goods



# Organizations that harness data, cloud, and AI outperform

Nearly double  
operating margin

\$100M in additional  
operating income

They out-innovate

The Jet logo is displayed in a bold, black, lowercase sans-serif font. It is overlaid on a faded background image of a multi-level shopping mall with escalators and people.

**jet**

The DocuSign logo features the word "Docu" in a bold, black, sans-serif font, followed by "Sign" in a black, cursive script font. A registered trademark symbol (®) is located at the end of the word "Sign". The logo is overlaid on a faded background image of a document with a signature and a pen.

**DocuSign**®

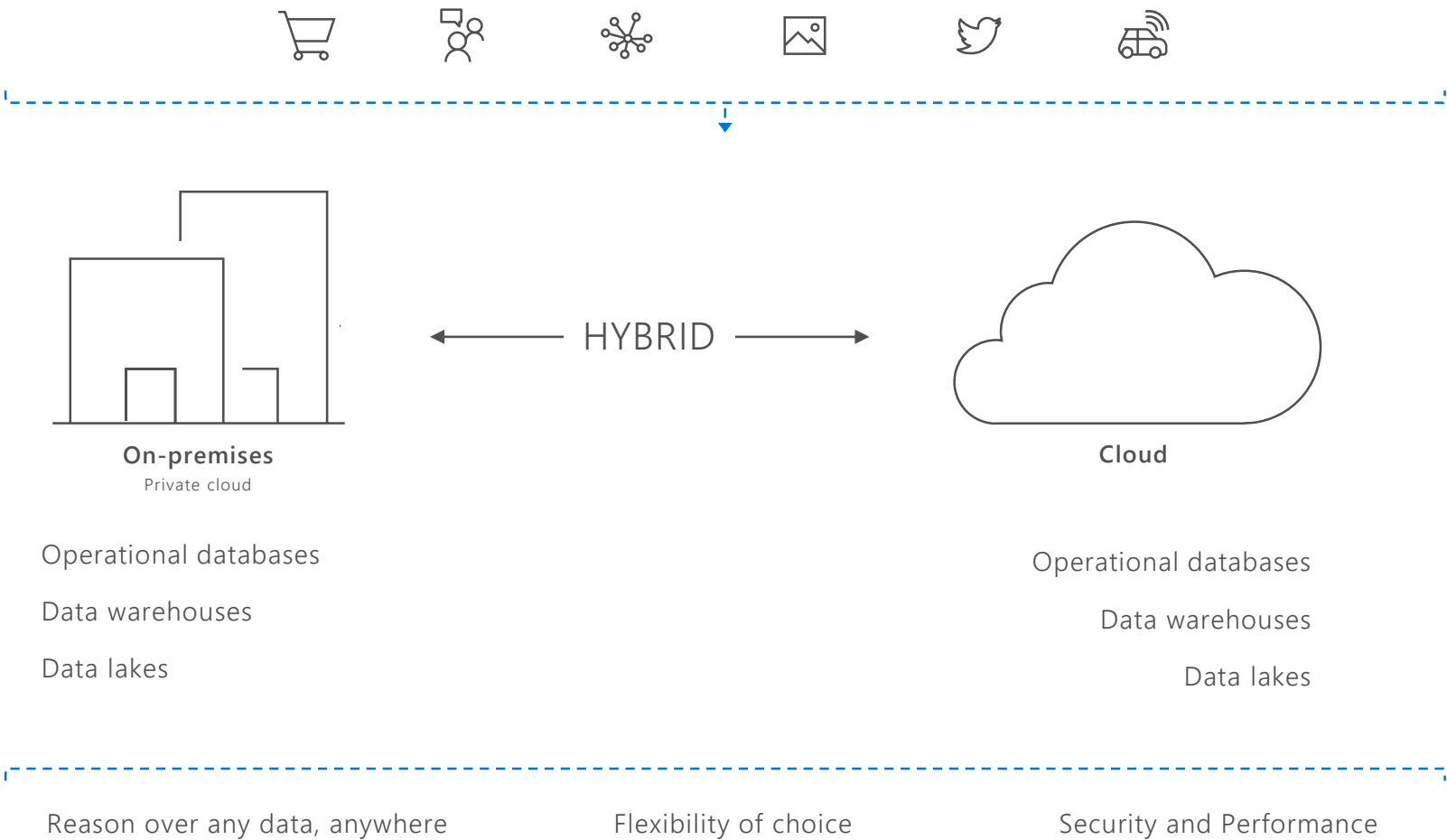
The Honeywell logo is shown in a bold, black, sans-serif font. It is overlaid on a faded background image of a person wearing a grey jacket and holding a blue handheld electronic device.

**Honeywell**



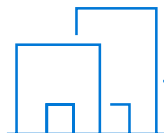
They rely on a modern data estate

# THE MODERN DATA ESTATE



# THE MODERN DATA ESTATE

Microsoft's on-premises solution



SQL Server  
1/10<sup>th</sup> the cost of Oracle

Operational databases



Industry leader 4 years in a row

Data warehouses



#1 TPC-H performance

Data lakes



T-SQL query over any data

Reason over any data, anywhere



Only commercial DB  
with AI built-in



Flexibility of choice



Any language, any  
platform, anywhere



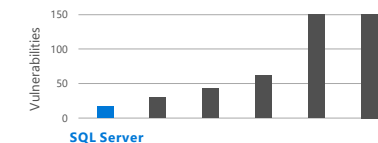
JAVA



Security and Performance



Most secure  
over last 7 years



# SQL SERVER 2017

INDUSTRY-LEADING PERFORMANCE AND SECURITY NOW ON LINUX AND DOCKER

## Choice of platform and language



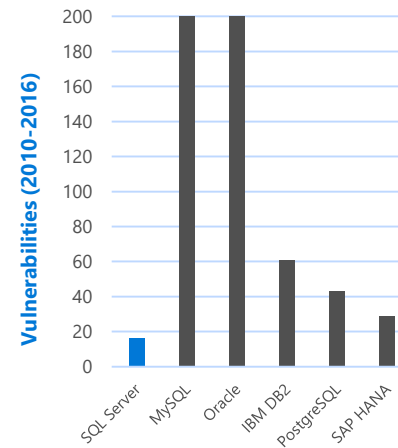
T-SQL	PHP
Java	Node.js
C/C++	Python
C#/VB.NET	Ruby

## Industry-leading performance



- #1 OLTP performance
- #1 DW performance
- #1 price/performance

## Most secure over the last 7 years

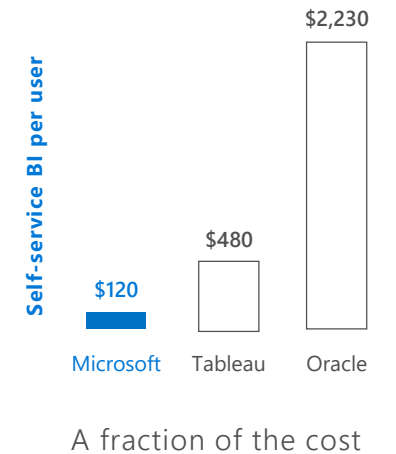


## Only commercial DB with AI built-in



R and Python +  
in-memory at massive scale  
Native T-SQL scoring

## End-to-end mobile BI on any device



## In-memory across all workloads

## Most consistent data platform





# INDUSTRY LEADING TCO

AVOID EXPENSIVE ORACLE ADD-ONS WITH BUILT-IN FEATURES

IN-DB ADVANCED ANALYTICS	\$320K	Everything <b>built-in</b>
MOBILE BI & SELF-SERVICE BI		
#1 TPC-H—DW		
BUILT-IN ETL	\$3,745,000	11.7x more
INDUSTRY LEADER—OLTP		
	ORACLE®	

# NEW FEATURES IN SQL SERVER 2017

Support for graph data and queries

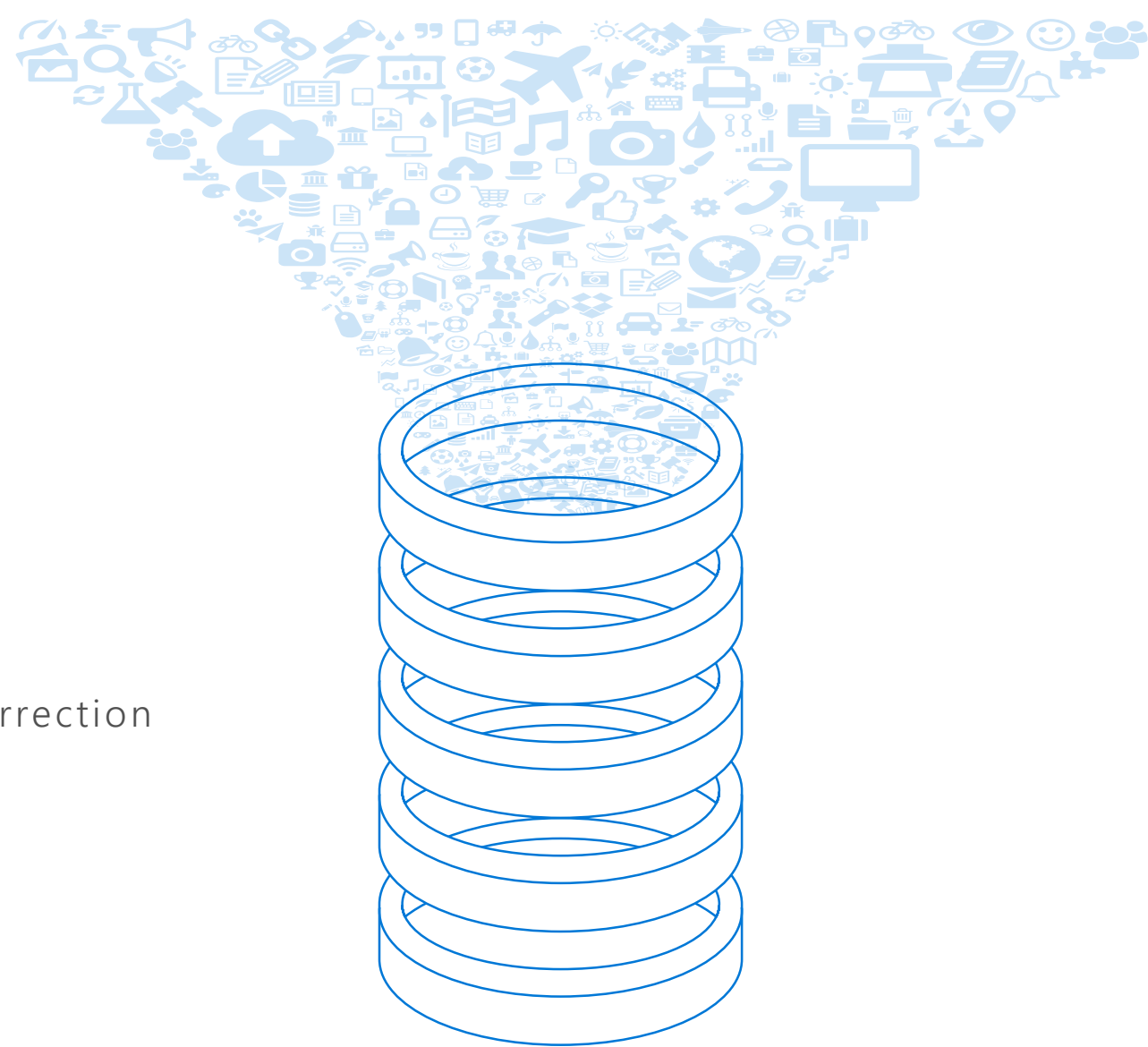
Advanced Machine Learning with R & Python

Native T-SQL scoring

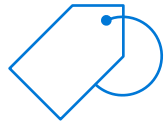
Adaptive Query Processing and Automatic Plan Correction

Cross Platform HA (OS level redundancy)

Agile Dev/Ops with support for containers

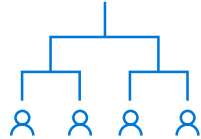


# SQL BASED TECHNOLOGIES SUPPORT YOUR GDPR SECURITY NEEDS



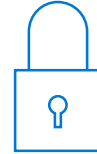
## Track personal data

Easily query databases to uncover personal data  
Tag data with sensitivity labels using Extended Properties



## Separation of duties

Securely authenticate to your database and apply granular authorization policies  
Restrict access to users using Dynamic Data Masking and Row-Level Security



## Encryption everywhere

Encrypt data whether at rest, in transit or in client applications  
Track and log database events to identify potential threats or security violations  
Use continuously learning algorithms to identify unusual or suspicious activity



## Audit capabilities

Track and report on all database activities with granularly configurable auditing



## Consistent programmability experience

Developers and application partners can build to a single programming surface  
Scale across SQL editions and the cloud

### SQL Server 2017 features

SQL Query Language

Dynamic Data Masking (DDM)  
Row-Level Security (RLS)  
Windows Server authentication

Transparent Data Encryption  
Always Encrypted

Auditing for SQL Database and SQL Server audit  
Temporal tables  
SQL Database Threat Detection

Since SQL Server 2016 SP1

# 700K+ CUSTOMERS PROTECTED

Most secure database

## CHALLENGE

Ecuadorian bank must provide unwavering security for customers while data volume and distribution channels rapidly expand

## IMPACT

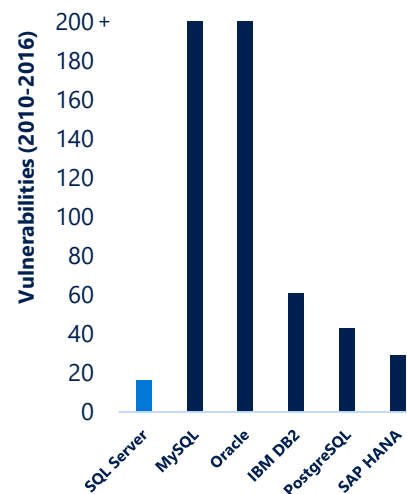
Internal data concealed with **Dynamic Data Masking** while testing applications

Customer data protected from app to database with **Always Encrypted** and **Row Level Security**



## Layers of security

Least vulnerable over the last 7 years



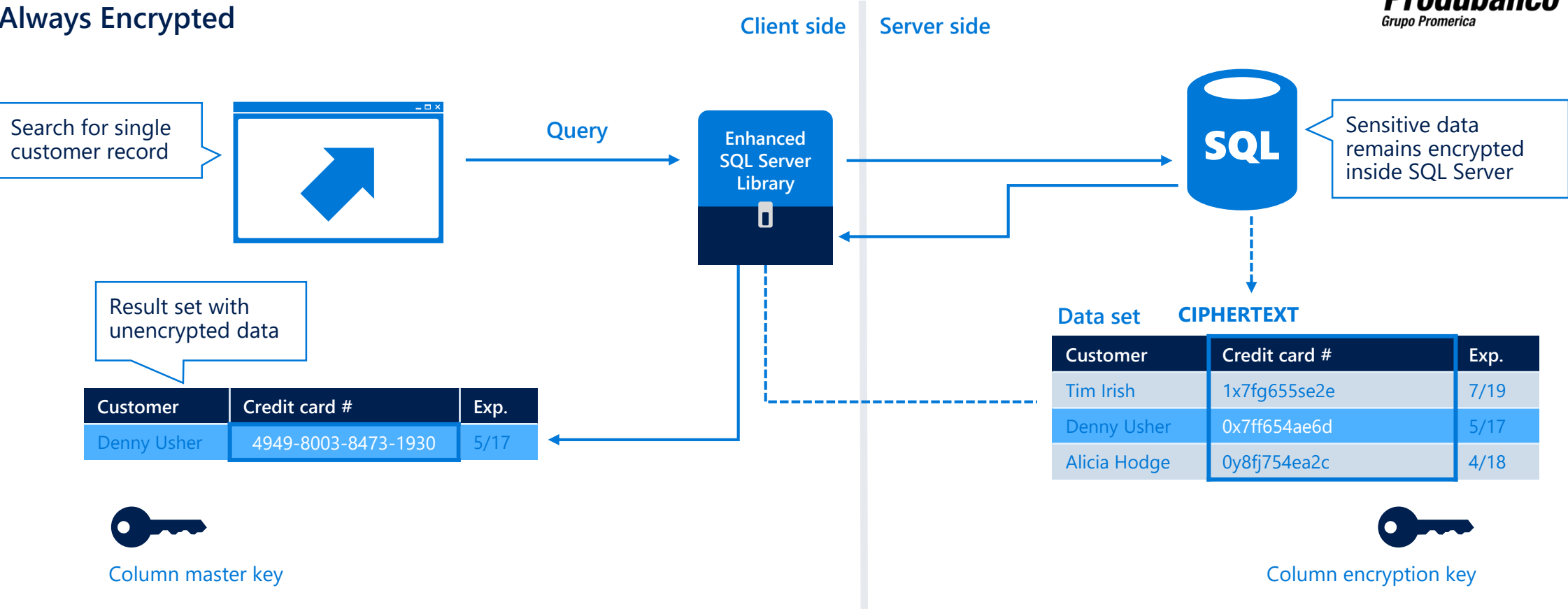
Protection at rest and in motion



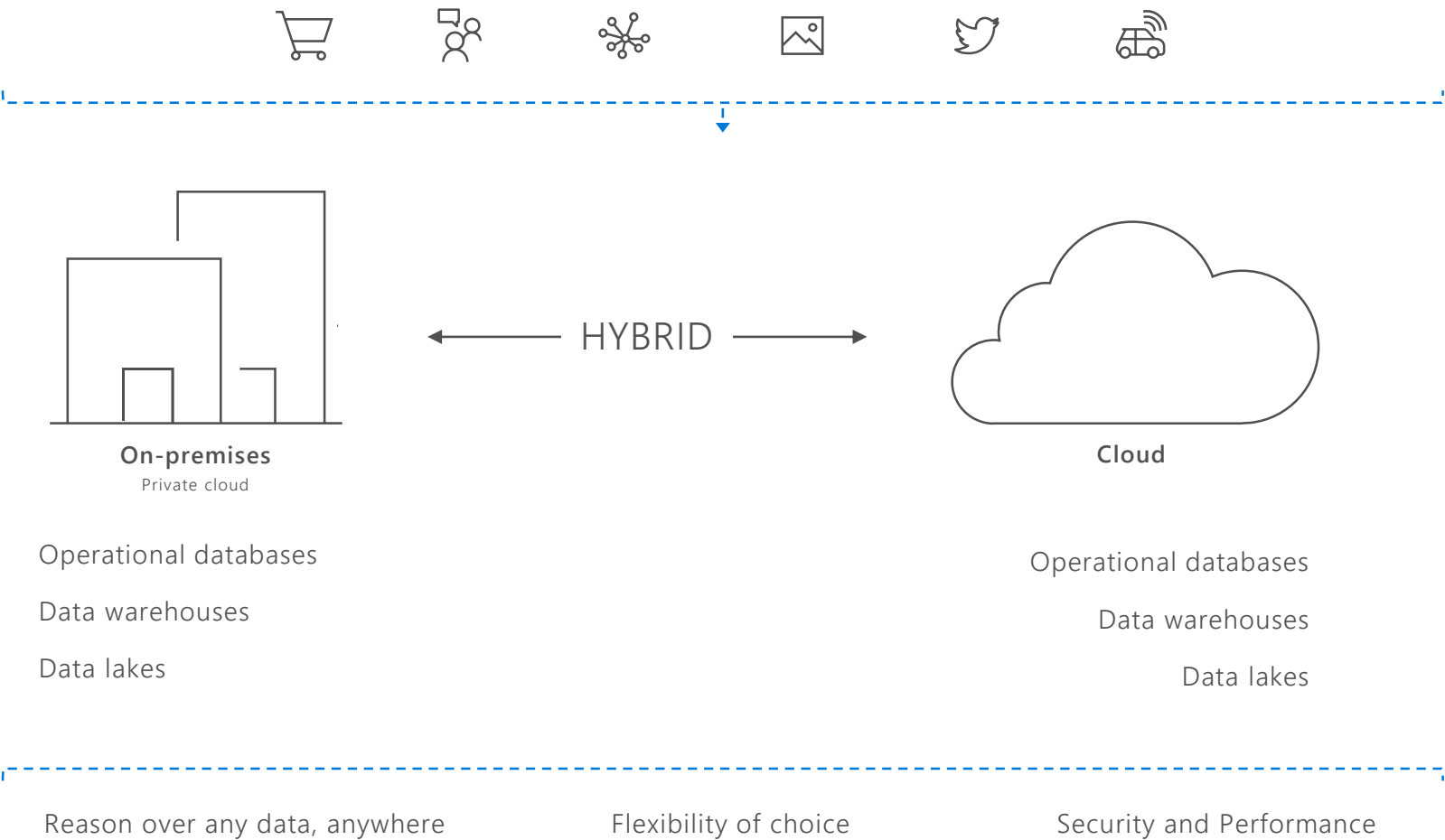
# ENCRYPT DATA AT REST AND IN MOTION



Always Encrypted



# THE MODERN DATA ESTATE



# THE MODERN DATA ESTATE

Microsoft's cloud solution



## Azure data services

Operational databases



**70% faster than competition**  
Azure SQL Database



**<10ms latency SLAs**  
Azure Cosmos DB, Postgres, MySQL

Data warehouses



**2x the global reach**  
Azure SQL Data Warehouse

Data lakes



**99.9% SLA**  
Azure Data Lake, Databricks, HDInsight

Reason over any data, anywhere



**AI built-in**



Flexibility of choice



**Any language, any  
platform, anywhere**



JAVA



Security and performance



**More certifications  
than any other cloud**

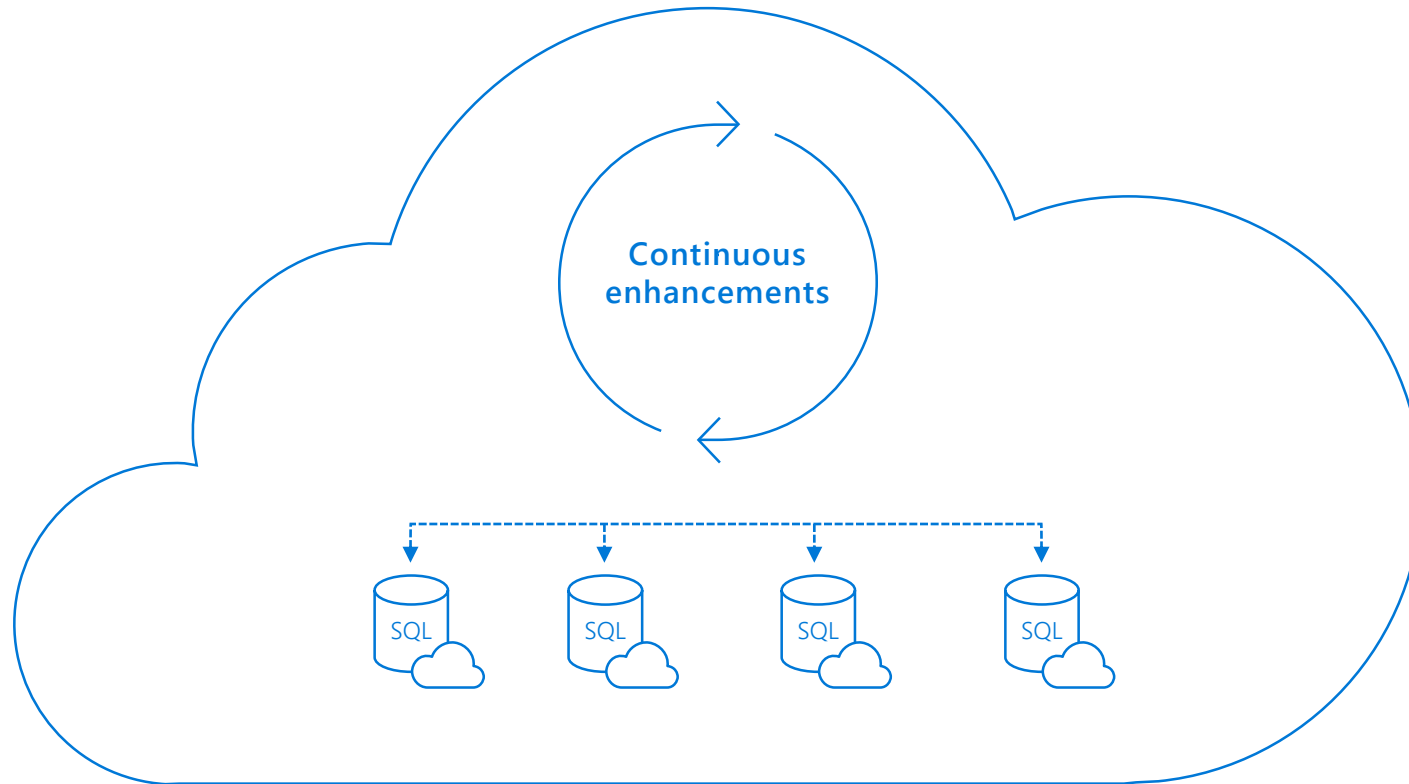


CSA



NIST

# CLOUD-FIRST APPROACH BREEDS FASTER INNOVATION





STREAMLINE YOUR JOURNEY TO THE CLOUD  
WITH EASY APP MODERNIZATION

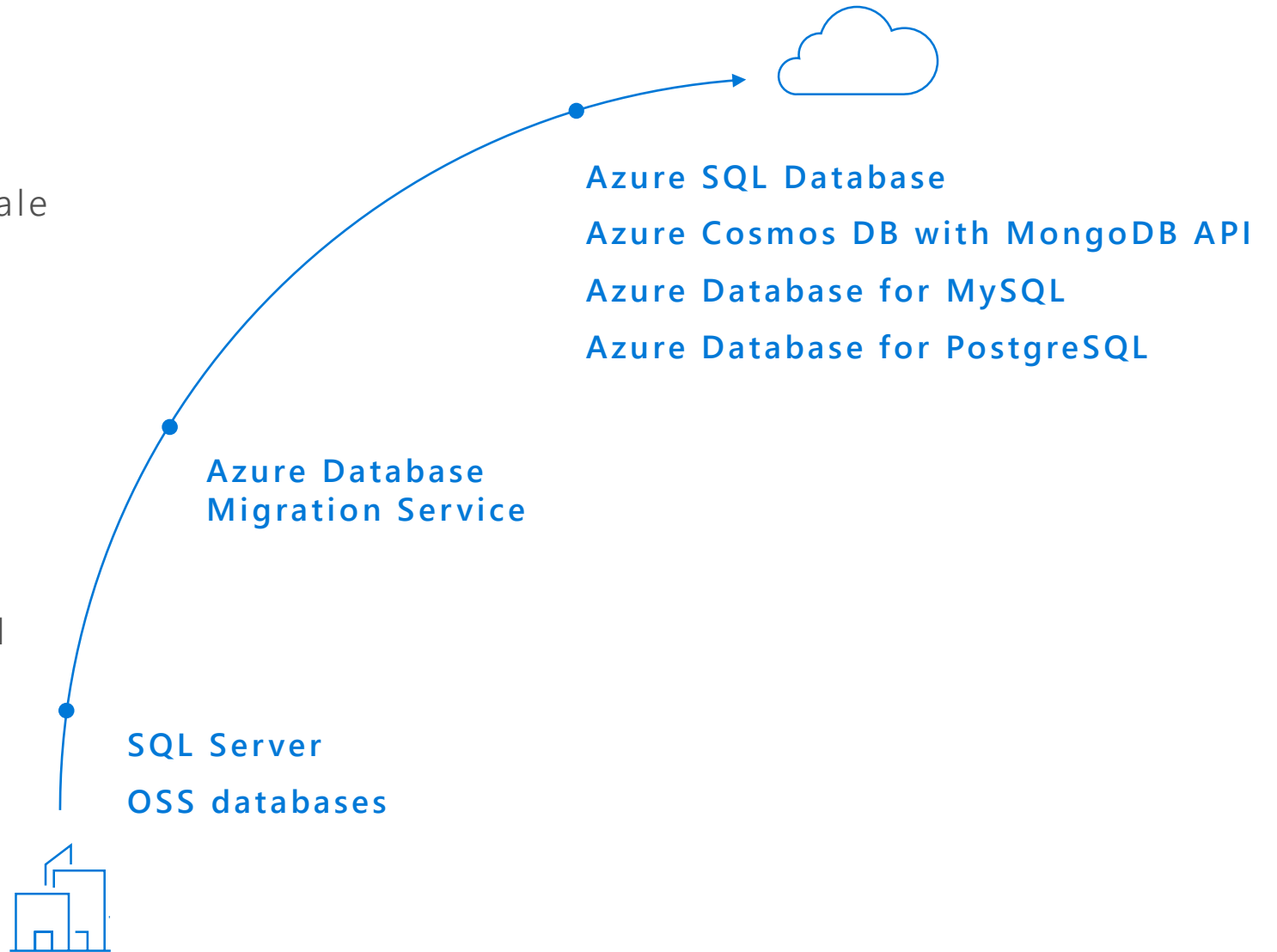
# LIFT + SHIFT AND TRANSFORM

Seamless and reliable migration at scale

Lift and shift to the cloud with  
no code changes

Modernize across SQL Server,  
PostgreSQL, MySQL and MongoDB

Maximize current on-premises  
license investments with Azure Hybrid  
Benefit NEW



# Azure Hybrid Benefit's family of savings

Customers with active Software Assurance on their SQL Server and Windows Server licenses can leverage Azure Hybrid Benefit for both VM and fully-managed scenarios to unlock savings up to 55%<sup>1</sup>

## Windows Server

Leverage Azure Hybrid Benefit for Windows Server to pay a reduced rate, and combine Azure Hybrid Benefit for SQL Server for even greater savings

## SQL Server on Azure Virtual Machines

Leverage Azure Hybrid Benefit for SQL Server to pay a reduced rate, and combine Azure Hybrid Benefit for Windows Server for even greater savings

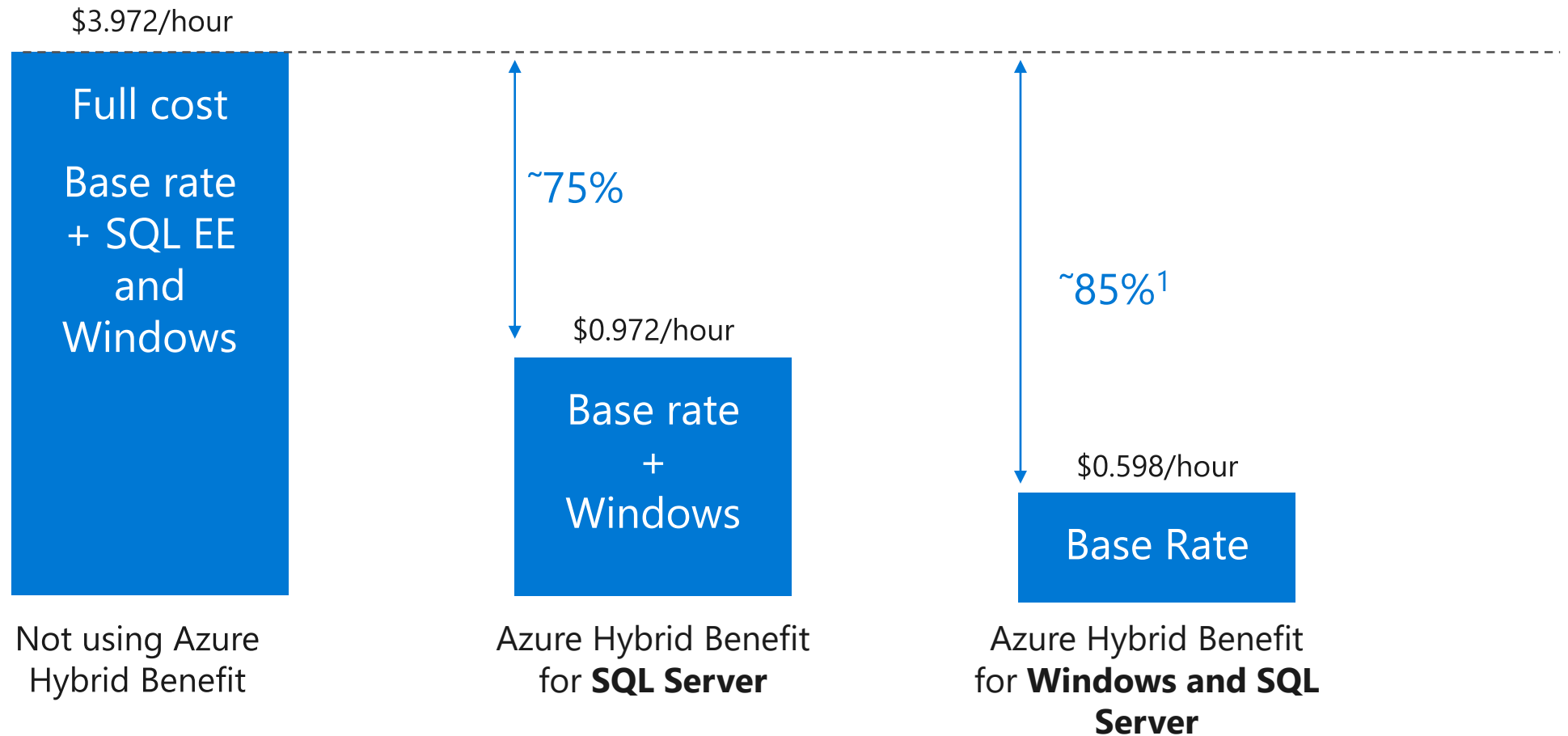
## Azure SQL Database

Leverage the Azure Hybrid Benefit for SQL Server to pay a reduced rate on fully-managed Azure SQL Database

<sup>1</sup>Savings may be higher when that Azure Hybrid Benefit for Windows Server and SQL Server are used together or 'stacked' in IaaS

# Azure Hybrid Benefit savings in IaaS

Customers save up to 85% by combining AHB for SQL Server and Windows Server in Azure VMs

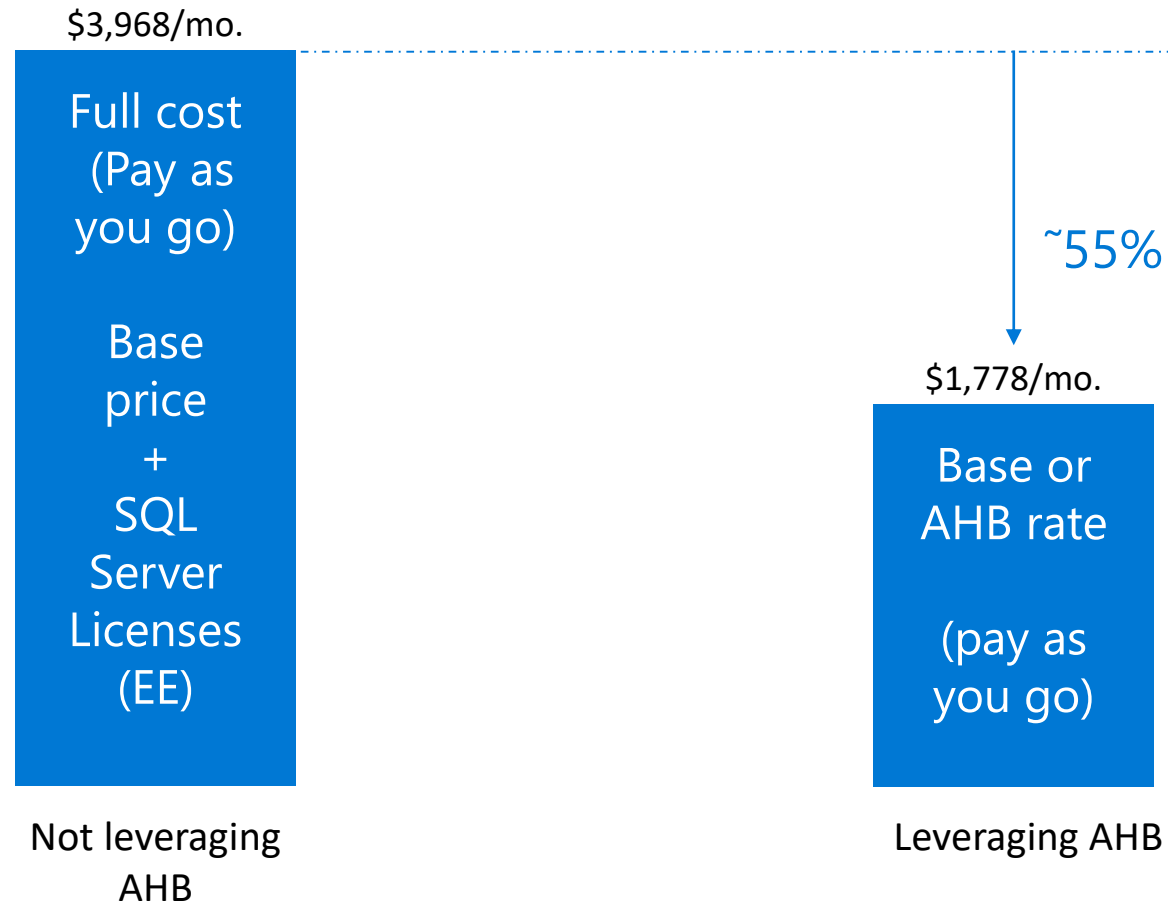


<sup>1</sup>Savings based on 8-Core D13 v2 VM in East US 2 region. Savings are calculated from full price (license included) for SQL Server Enterprise edition VM against reduced rate (applying Azure Hybrid Benefit for SQL Server and Windows Server), which excludes Software Assurance costs for SQL Server and Windows Server, which may vary based on EA agreement. Actual savings may vary based on region, instance size and compute family. Prices as of June 5 2018, subject to change.



# Azure Hybrid Benefit savings on SQL Database

Customer save up to 55% with AHB for SQL Server



**Note:** Savings based on eight vCore SQL Database Managed Instance Business Critical in West US 2 Region, running 730 hours per month. Savings are calculated from on demand full price (license included) against base rate (applying Azure Hybrid Benefit for SQL Server). Savings excludes Software Assurance cost for SQL Server Enterprise edition, which may vary based on EA agreement. Actual savings may vary based on region, instance size and performance tier. Prices as of May 2018, subject to change.

# AZURE SQL DATABASE

THE INTELLIGENT CLOUD DATABASE FOR APP DEVELOPERS

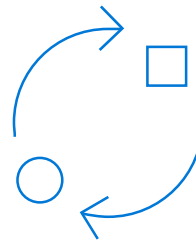
**Intelligent  
DBaaS**



**Privacy  
and trust**



**Seamless  
and compatible**



**Competitive  
TCO**



Lift and shift  
SQL Server apps

Migrate SQL Server  
data marts

Build intelligent  
apps with R built-in

Save up to 55% with Azure  
Hybrid Benefit for SQL Server

# AZURE DATABASE FOR MYSQL AND POSTGRESQL

Work in the DB of your choice

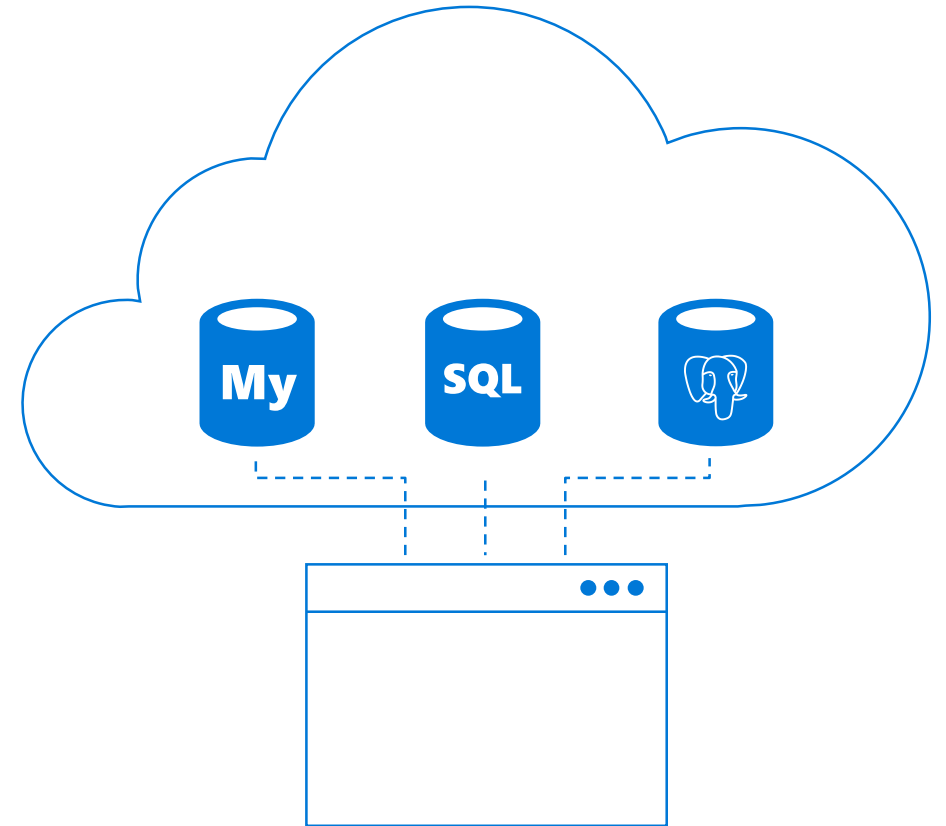
Create with built-in high availability

Set up in minutes, scale on the fly

Sustain performance with adaptive improvements

Rest easy with unparalleled security

Standard tier [PREVIEW](#)



Lift and shift MySQL  
and PostgreSQL apps

Migrate WordPress  
and Drupal

Build apps with your  
OSS DB of choice

# AZURE COSMOS DB

GLOBALLY DISTRIBUTED, MULTI-MODEL NOSQL DATABASE SERVICE

Multi-model data with your favorite API

Elastically scale storage and throughput

Multiple, well-defined consistency levels

<10ms latency guarantees at the 99th percentile

Industry-leading SLAs across performance, latency, availability and throughput



MongoDB



Table API



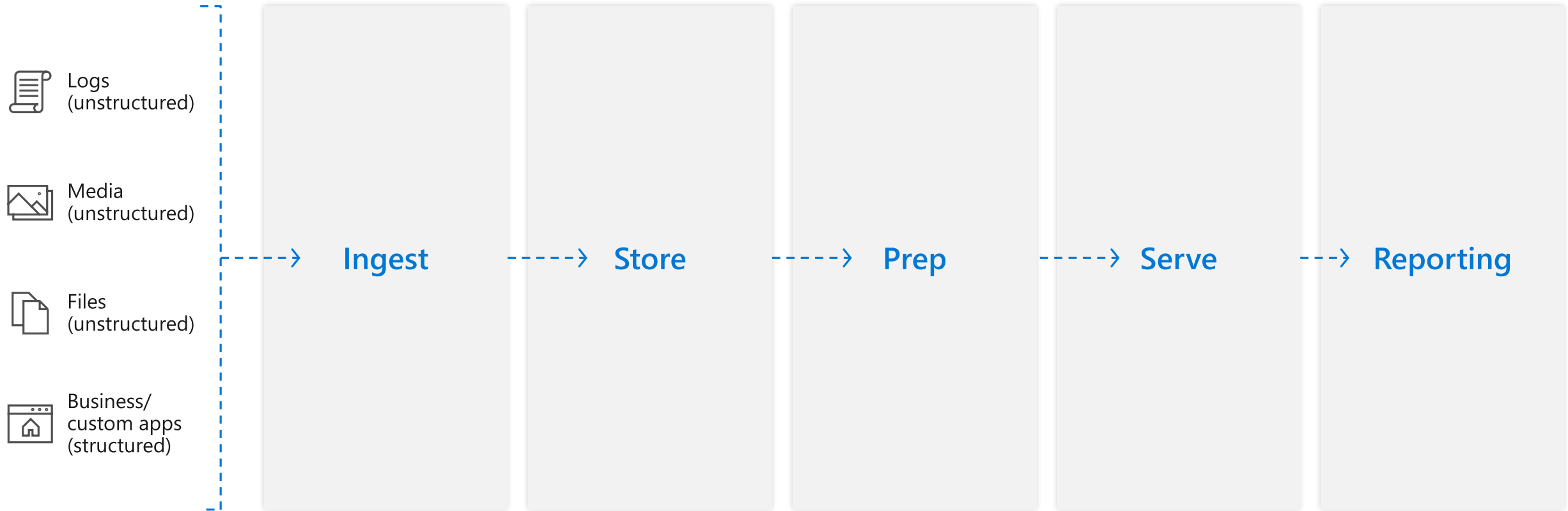
Lift and shift NoSQL apps

Run Spark over operational data

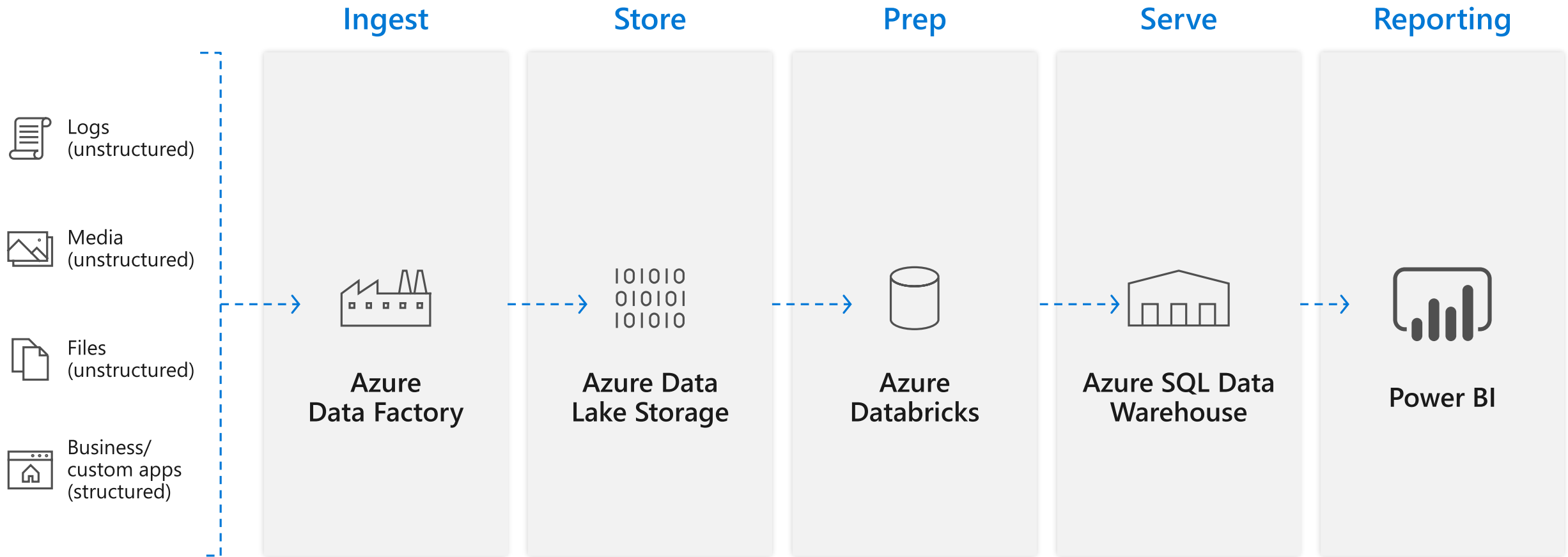
Build real-time customer experiences

Ideal for IoT, gaming and eCommerce

# Cloud Scale Analytics



# Cloud Scale Analytics



# M I C R O S O F T   F O R   Y O U R   M O D E R N   D A T A   E S T A T E



LOB



CRM



Graph



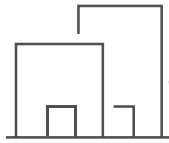
Image



Social



IoT



SQL Server

← HYBRID →



Azure Data Services

Easiest lift and shift  
with no code changes

Industry leader 4 years in a row   Operational databases

#1 TPC-H performance   Data warehouses

T-SQL query over any data   Data lakes

Operational databases   **70% faster**

Data warehouses   **2x the global reach**

Data lakes   **99.9% SLA**

AI built-in | Most secure | Lowest TCO

Reason over  
any data, anywhere

Flexibility  
of choice

Security and  
performance

A woman with blonde hair tied back, wearing a grey tank top and carrying a light-colored bag, is walking away from the camera on a city street. The scene is bathed in the warm, golden light of a setting or rising sun, creating a soft, hazy atmosphere. In the background, blurred cars and city lights are visible, suggesting a busy urban environment.

Empower today's innovators to unleash the power of data  
and reimagine possibilities that will improve our world

