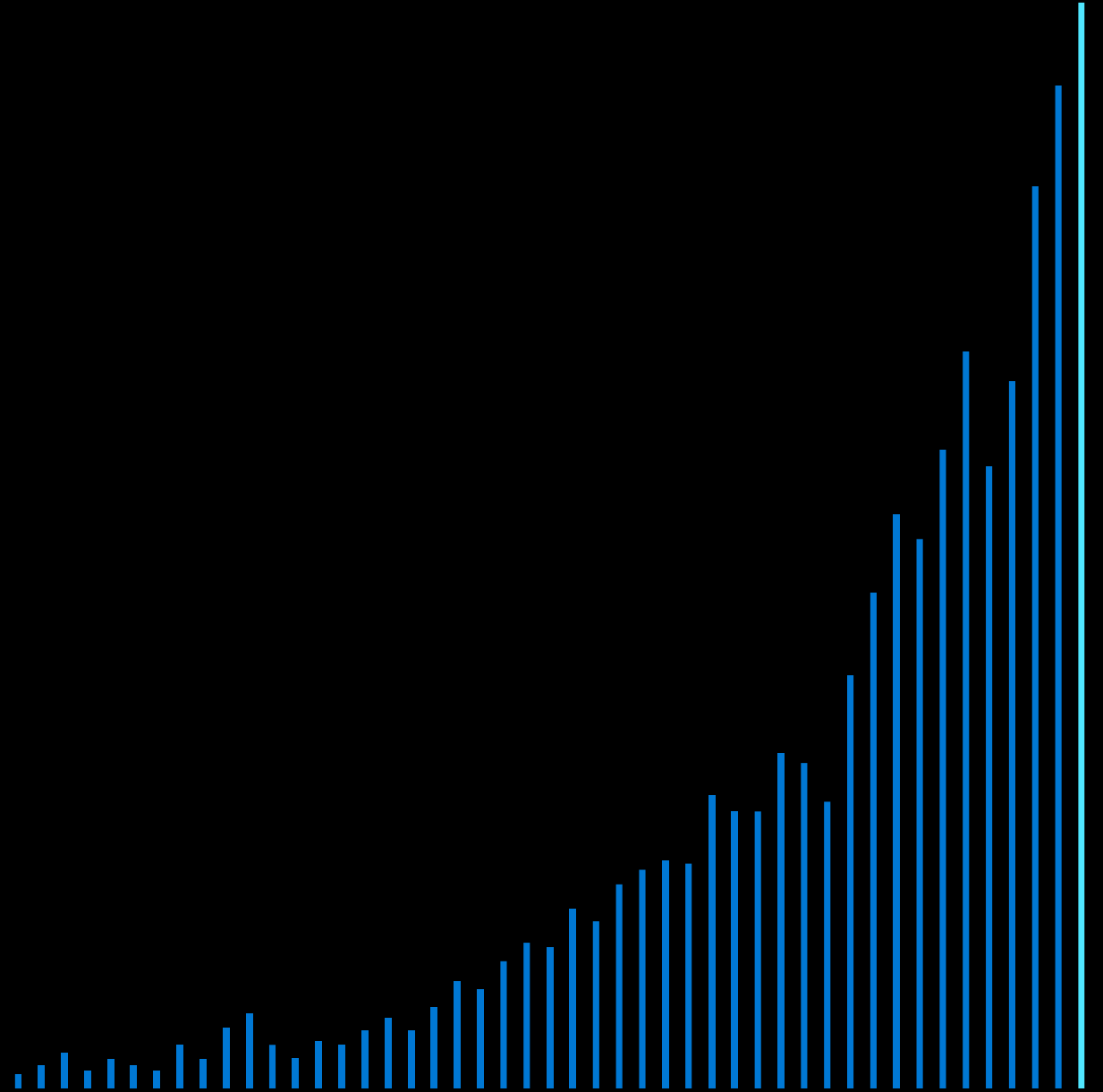Microsoft

Analytics in a day

Cloud analytics in the age of self-service and data science

Agenda & Intro

Times are approximate and will be fluid with the class
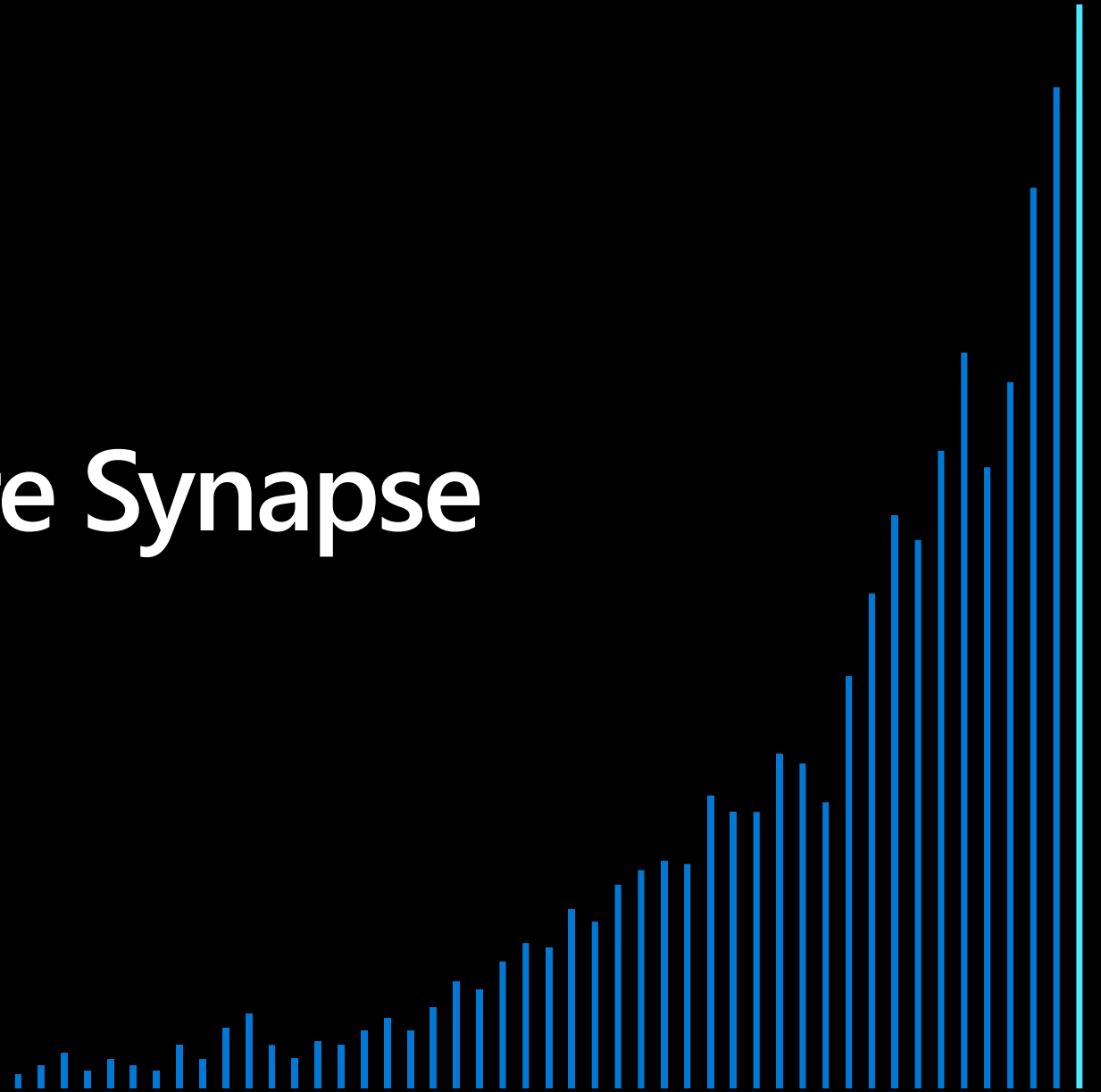
Morning

·9:00 – 9:30   Insights for All – Azure Synapse Overview

·9:30 – 11:30   Integrated Platform - Azure Synapse Analytics

·11:30 – 12:00   Lab Intro & Lab 1 : Data Loading

Afternoon

·1:00 –2:00   Lab 1 : Continued

·2:00 –3:00   Lab 2: Azure Synapse Performance

·3:00 –4:00   Insight for all with Power BI + Azure Synapse

·4:00 –5:00   Lab 3: Azure Synapse + BI

Today, all businesses are data businesses

Data is the lifeblood of modern work

Data makes business possible

Data is crucial to businesses of all sizes

Securing data is mandatory

All data businesses need to be analytic businesses

Without analytics data is a cost center, not a resource

Businesses need to "know thyself"

Workers are empowered with intelligent insights

Augmented intelligence sees patterns we cannot

Analytic businesses need to evolve data science

Every business has opportunities to make analytics faster, easier, and more insightful

Data science empowers us to go farther

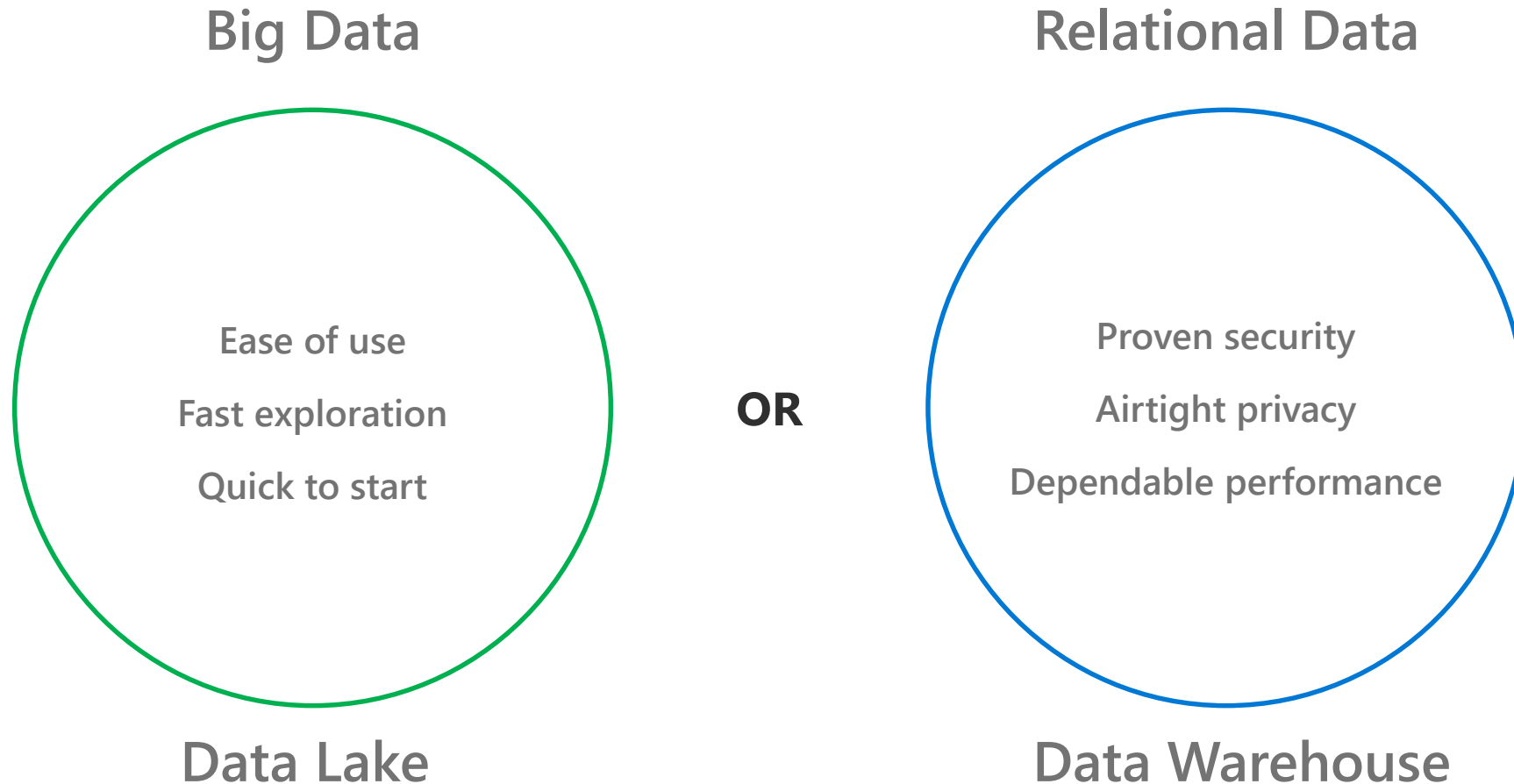**Businesses need scalable analytics**

AI/ML creates smarter organizations

Azure Synapse Analytics

Limitless analytics service with unmatched time to insight

***Azure Synapse is Azure SQL Data Warehouse evolved**—blending big data, data warehousing, and data integration into a **single service** for end-to-end analytics at cloud scale.*

This is a result of businesses being forced to maintain two critical, yet independent analytics systems

Big Data

Relational Data

Ease of use

Fast exploration

Quick to start

OR

Proven security

Airtight privacy

Dependable performance

Data Lake

Data Warehouse

Azure brings these two worlds together, in a single service

Ease of use

Fast exploration

Quick to start

Proven security

Airtight privacy

Dependable performance
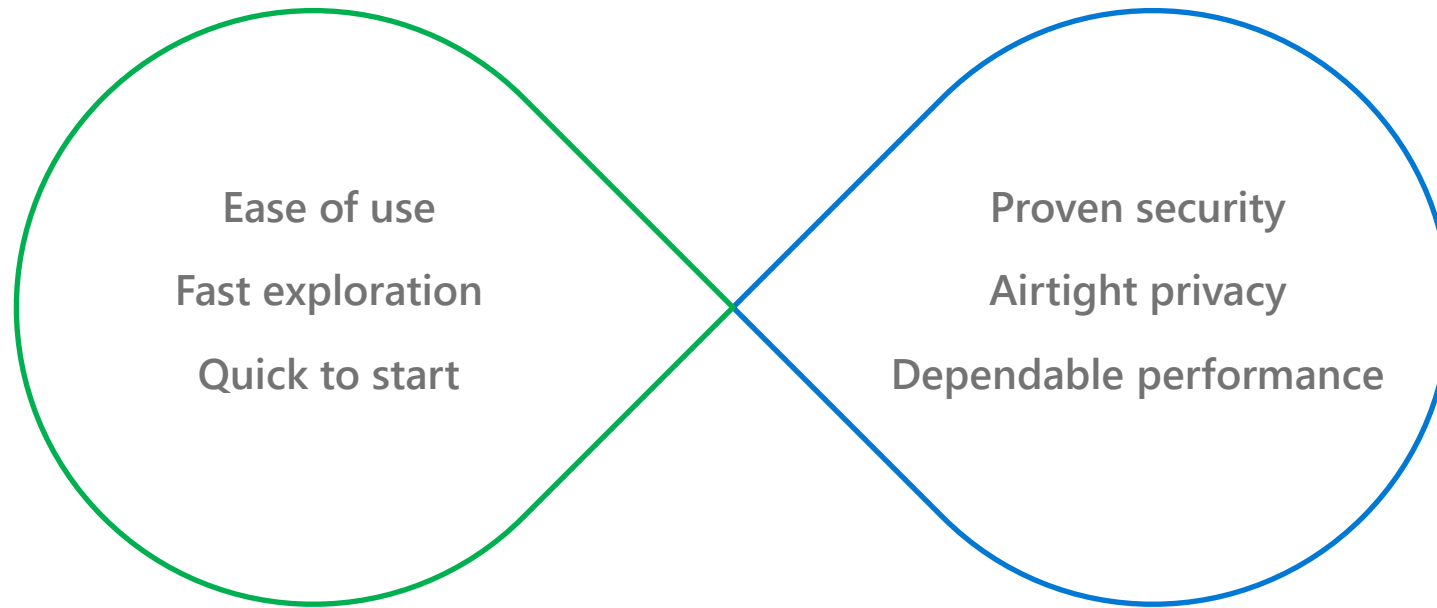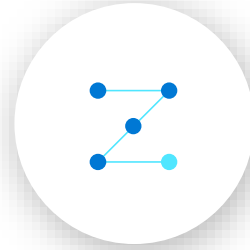
Welcome to Azure Synapse Analytics

Azure Synapse Analytics

Limitless Scale

Powerful Insights

Unified Experience

Unmatched Security

Limitless scale provides a breathtaking view of your data

All of it, from warehouses and Big Data lakes

with limitless scalability, provisioned or serverless,

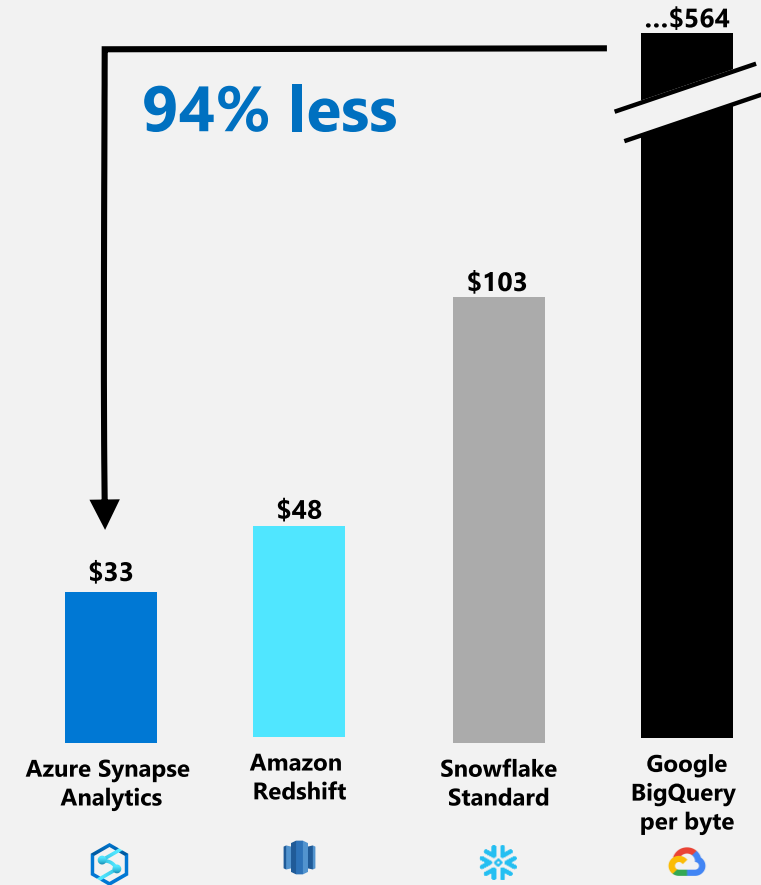and intelligently optimized workload performance.

A breakthrough in the cost of enterprise analytics

With the best price-performance in the business

Up to **14x** faster and costs **94%** less than other cloud providers

TPC-H Benchmark

Price-performance | Lower is better

...$564

94% less

$103

$48

$33

Azure Synapse Analytics

Amazon Redshift

Snowflake Standard

Google BigQuery per byte

Unlock **powerful insights**, get a multi-layered grasp of your business

Integrated BI and machine learning drives insight for all users

from the data scientist, coding with statistics,

to the business user with Power BI.
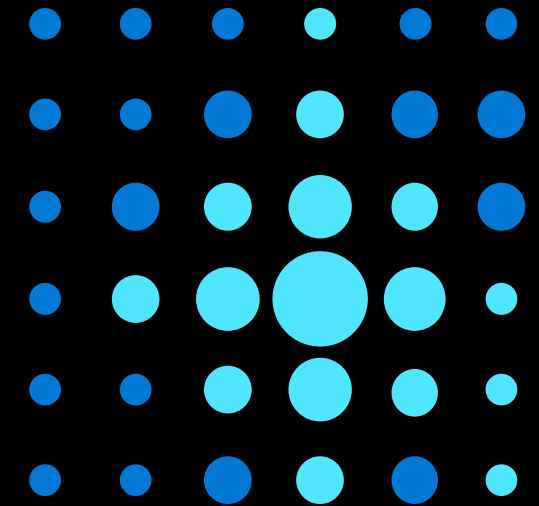
Build end-to-end analytics solutions with a **unified experience**

A consistent version of data for everyone *and* all analytics use cases,

but with zero management and maintenance,

plus financially backed SLAs.
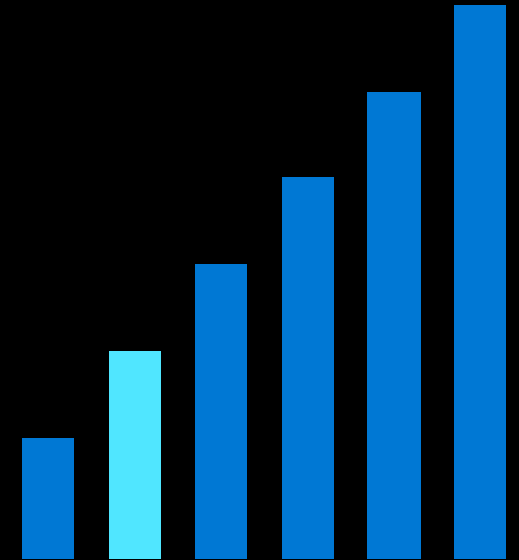
Rigorous assurance of safe-keeping with the most advanced security and privacy features

We protect sensitive data in real time,

monitoring and responding to threats as they arise,

with industry-leading security *and* privacy features

at no extra cost to you.

Azure Synapse Analytics

Limitless analytics service with unmatched time to insight
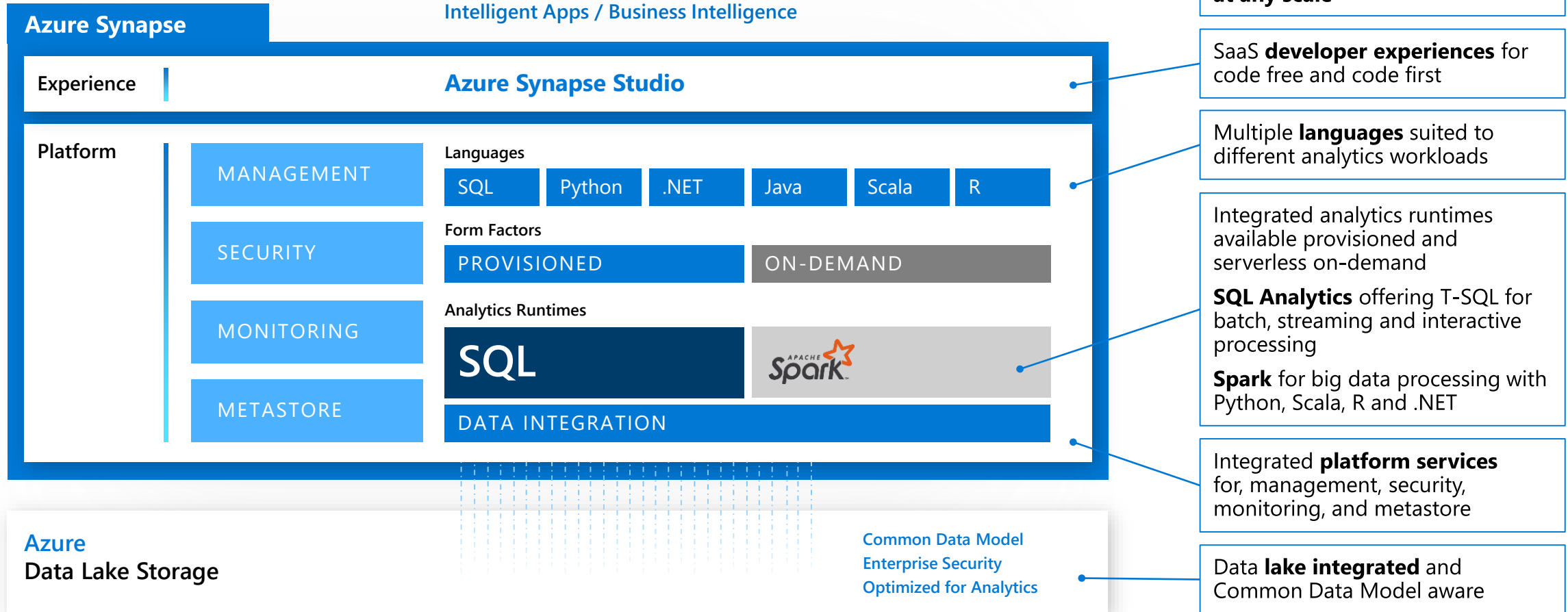
Artificial Intelligence / Machine Learning / Internet of Things
Intelligent Apps / Business Intelligence

Azure Synapse

Experience

Azure Synapse Studio

Platform

| MANAGEMENT |
| SECURITY |
| MONITORING |
| METASTORE |

Languages

| SQL | Python | .NET | Java | Scala | R |

Form Factors

| PROVISIONED | ON-DEMAND |

Analytics Runtimes

| SQL | Spark |

DATA INTEGRATION

Azure
Data Lake Storage

Common Data Model
Enterprise Security
Optimized for Analytics

Designed for analytics **workloads at any scale**

SaaS **developer experiences** for code free and code first

Multiple **languages** suited to different analytics workloads

Integrated analytics runtimes available provisioned and serverless on-demand

SQL Analytics offering T-SQL for batch, streaming and interactive processing

Spark for big data processing with Python, Scala, R and .NET

Integrated **platform services** for, management, security, monitoring, and metastore

Data **lake integrated** and Common Data Model aware

SQL Analytics - Core Architectural Pillars

Hassle-free Management	Built in scale, management, and support
Auto backup and geo-restore	Auto backups every 4 hours, retention for 7 days, and geo-replicated
Scale and Separation	Separates storage and compute for elastic scale. Scales on-demand
Market leading Security & Automation	Automation, policy-based, and industry leading security

SQL Analytics - Core Architectural Pillars

Built for data lake	Query any data over the data lake at PB scale
Elasticity & resiliency	Stateless service architecture— separation of state and compute
Performance	Tier 1 performance of appliance form factor.
Concurrency	High concurrency via resource aware task scheduling.
Autonomous workload manager	Self-tuned workload management: capacity planning, access control and resource governance.