Desafíos del DBA SQL Server en la nueva era

Speaker
Maximiliano Accotto | owner TriggerDB Consulting SRL

Acerca de mi

- Argentino nacido en Adrogue Provincia de Buenos Aires
- Data platform Geek
- Microsoft MVP Data Platform desde el 2005.
- Speaker internacional con mas de 500 charlas impartidas
- Especialista en tecnologías de Data y BI con mas de 15 años de trayectoria

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Sobre TriggerDB

TriggerDB Consulting SRL es una empresa Argentina fundada por **Maximiliano Accotto** , experto reconocido a nivel mundial en Microsoft SQL Server y BI.
Somos partner certificados de Microsoft en las competencias de SQL Server, Data Analytics y Powerbi.
Nuestros mas de 15 años de trayectoria , alto expertice y mas de 150 clientes en toda la región, nos hace lideres en servicios de consultoría y capacitación en tecnologías de SQL Server , analytics y Powerbi.

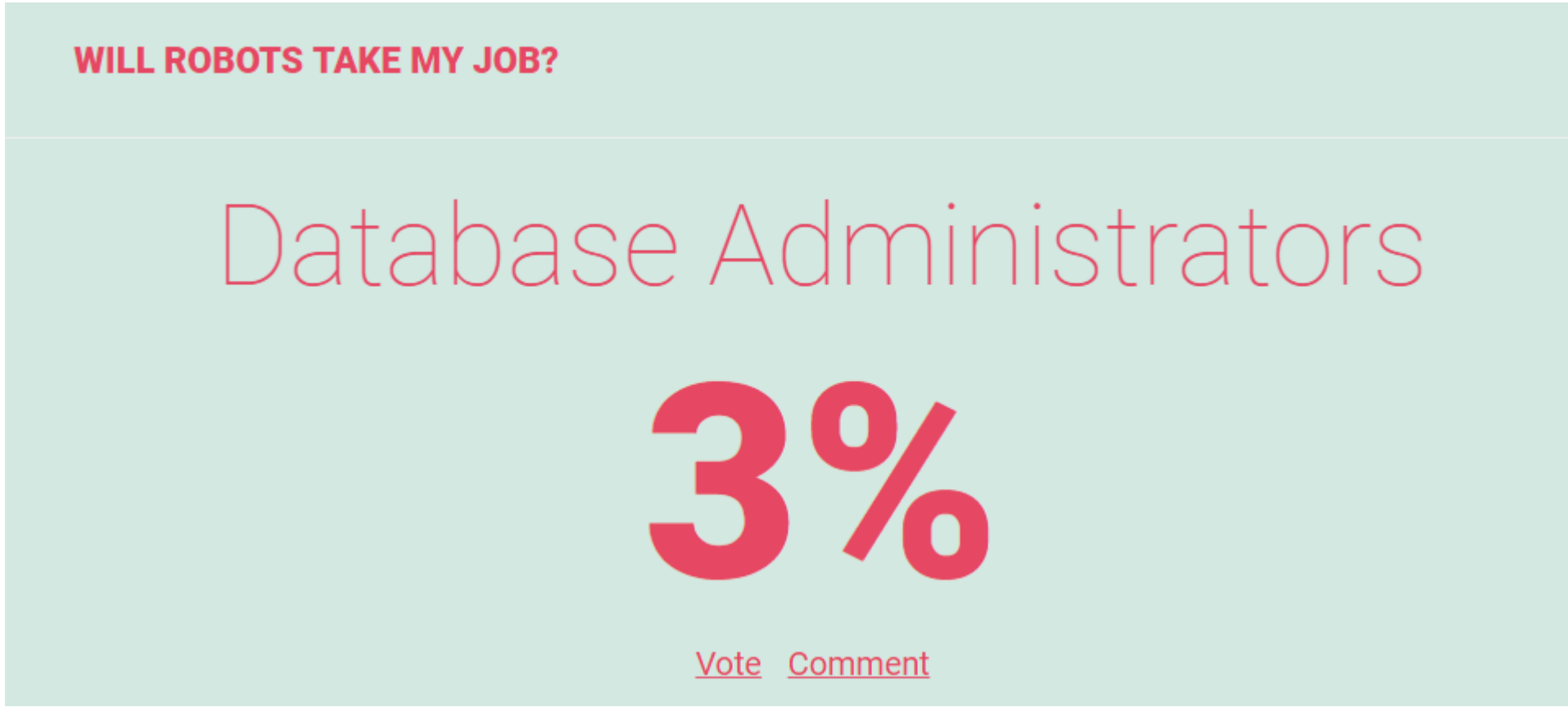
Microsoft Silver Partner

POWER BI PARTNER

El desafio del DBA en la actualidad

¿Que puede pasar con nuestro role?

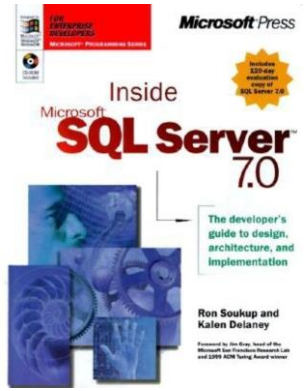
https://willrobotstakemyjob.com/

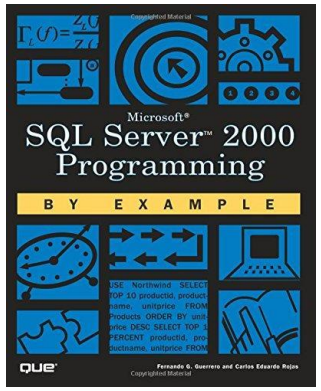


La evolución

Mi evolución aprendiendo como DBA

Mis inicios





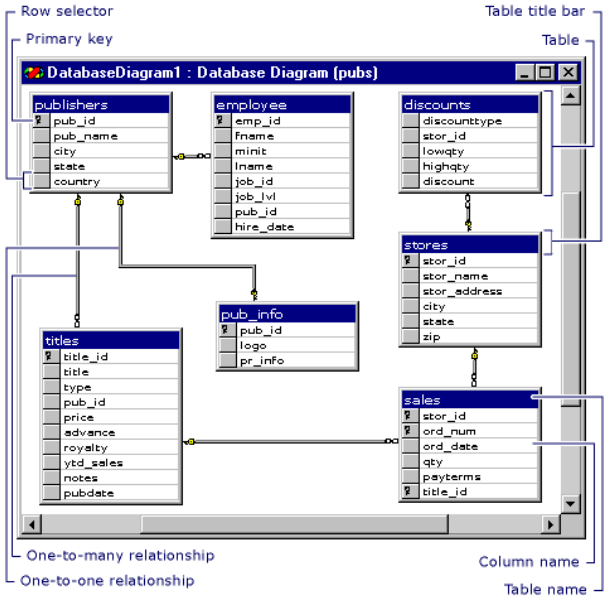
Mi actualidad

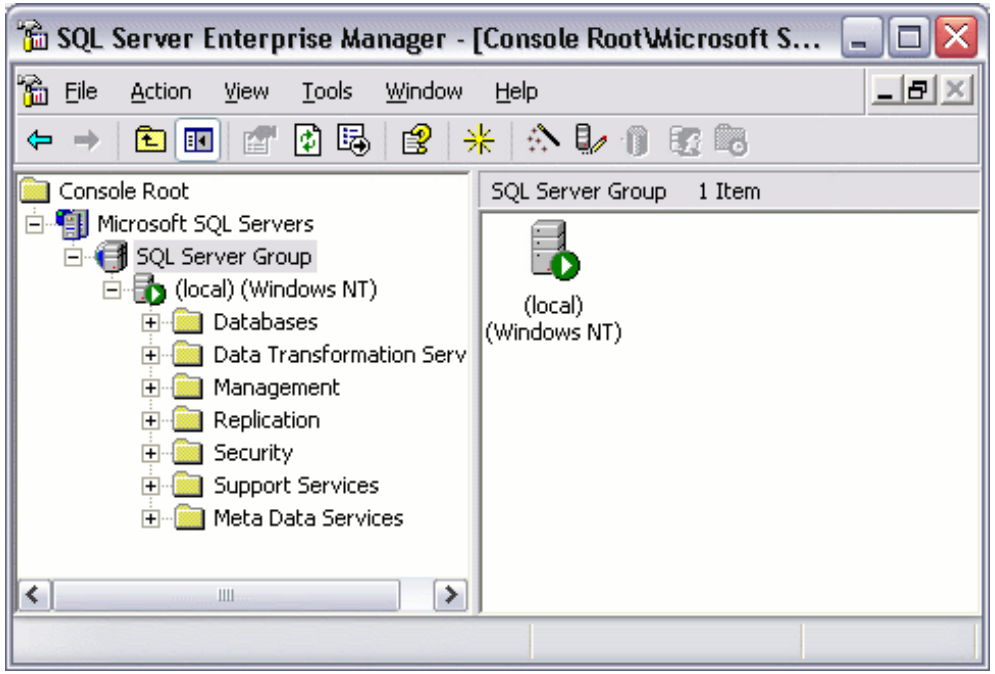
Google

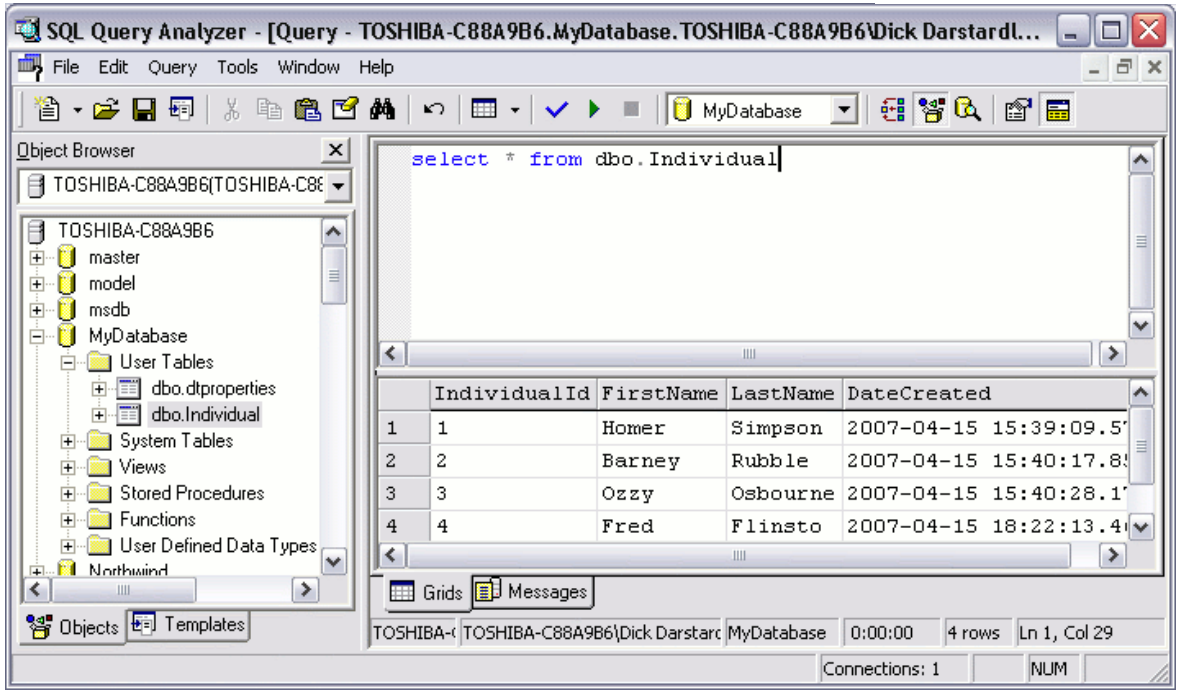
YouTube

GitHub

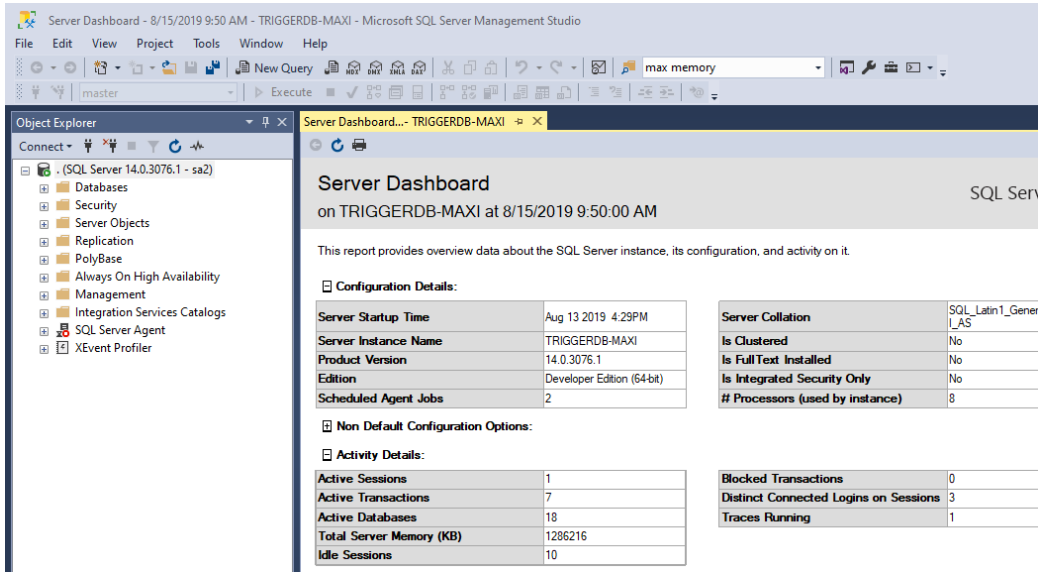
Tools que usaba

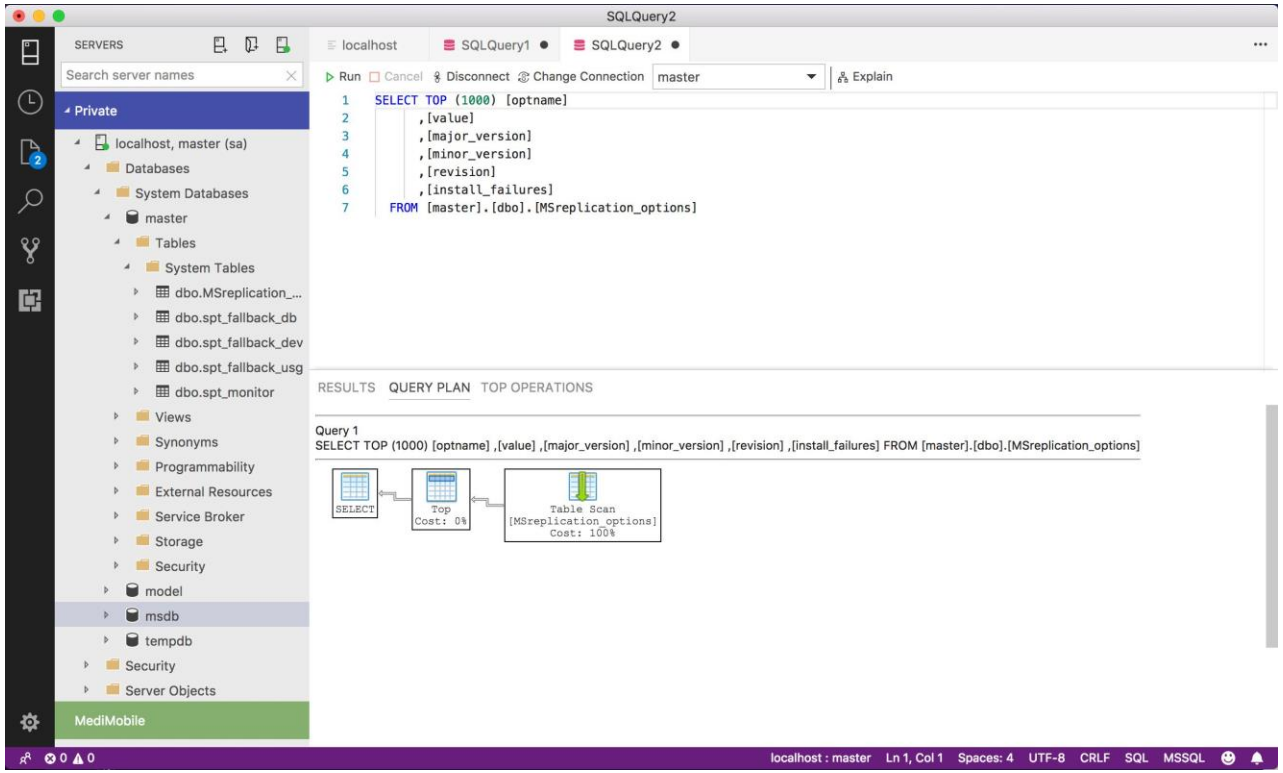


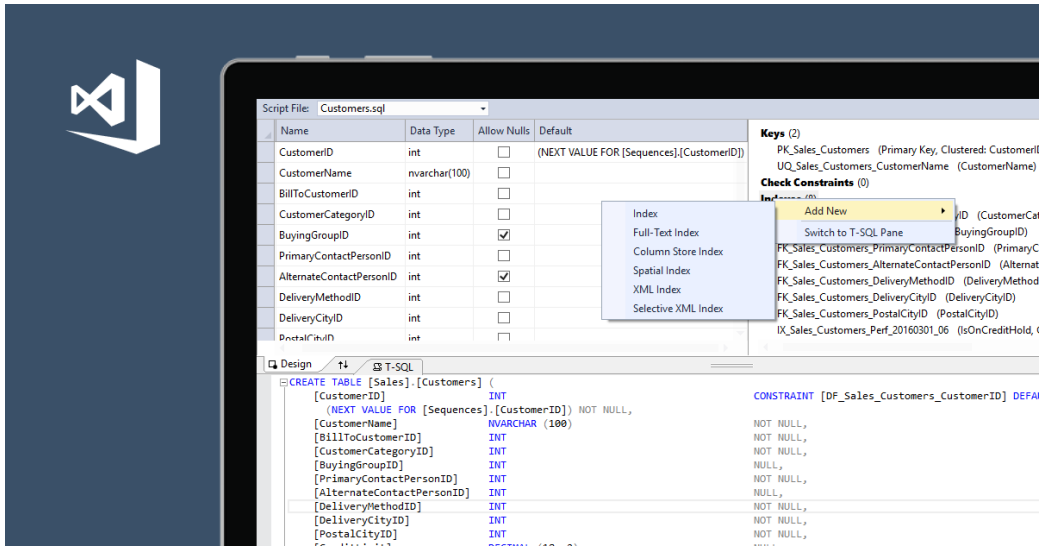




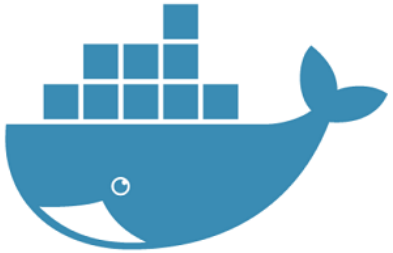
Tools que uso hoy

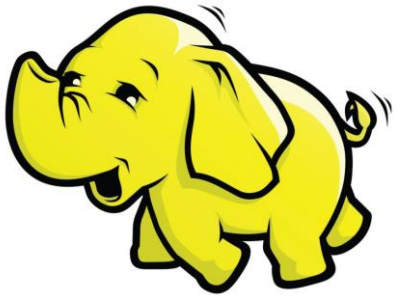


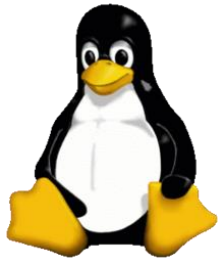




La actualidad del DBA SQL Server







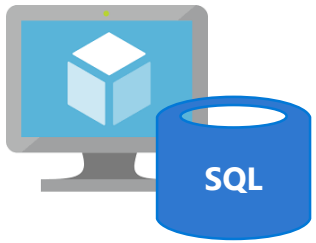
Evolución de SQL Server en el tiempo

SQL 1.1 - 1991	SQL 4.2 - 1993	SQL 6.5 - 1996	SQL 7.0 – 1998	SQL 2000	SQL 2005	SQL 2008	SQL 2012	SQL 2014	SQL 2016/ 2017 y futuro
• Windows 3.0 • OS/2	• Windows NT • OS/2	• Ansi Compliant	• OLAP Database	• XML	• CLR • Service Broker • SODA • Data Mining • SSIS • SSRS	• Spatial DB • Jerarquicos Data Type • FileStream • CEP	• In-memory Index • DQS • MDS • FileTable	• InMemory OLTP • Cloud	• Linux • Docker • Kubertentes • Big Data • Machine Learning • Polybase • HDFS • Data Lake

SQL y Cloud

SQL Server y “Cloud”

- Cloud Privada



SQL Server in
Virtual Machine (IAAS)

- Cloud Publica

Azure SQL Database
Azure SQL Database Managed Instance
(PAAS)

- **Cloud hibrida**

Azure SQL Data
Warehouse

MSSQL y Linux

SQL Server y Linux

SQL 2017 o sup

Support for RedHat Enterprise Linux (RHEL), Ubuntu, and SUSE Enterprise Linux (SLES)

Package-based installation: Yum Install, Apt-Get, and Zypper

Database Compatibility on all Platforms

Linux

SQL Server y Linux – Admin tools

Windows SQL Server Management Studio (SSMS)

Windows SQL Server Data Tools (SSDT)

3rd party tools continue to work

Existing drivers/frameworks supported

Azure Data Studio

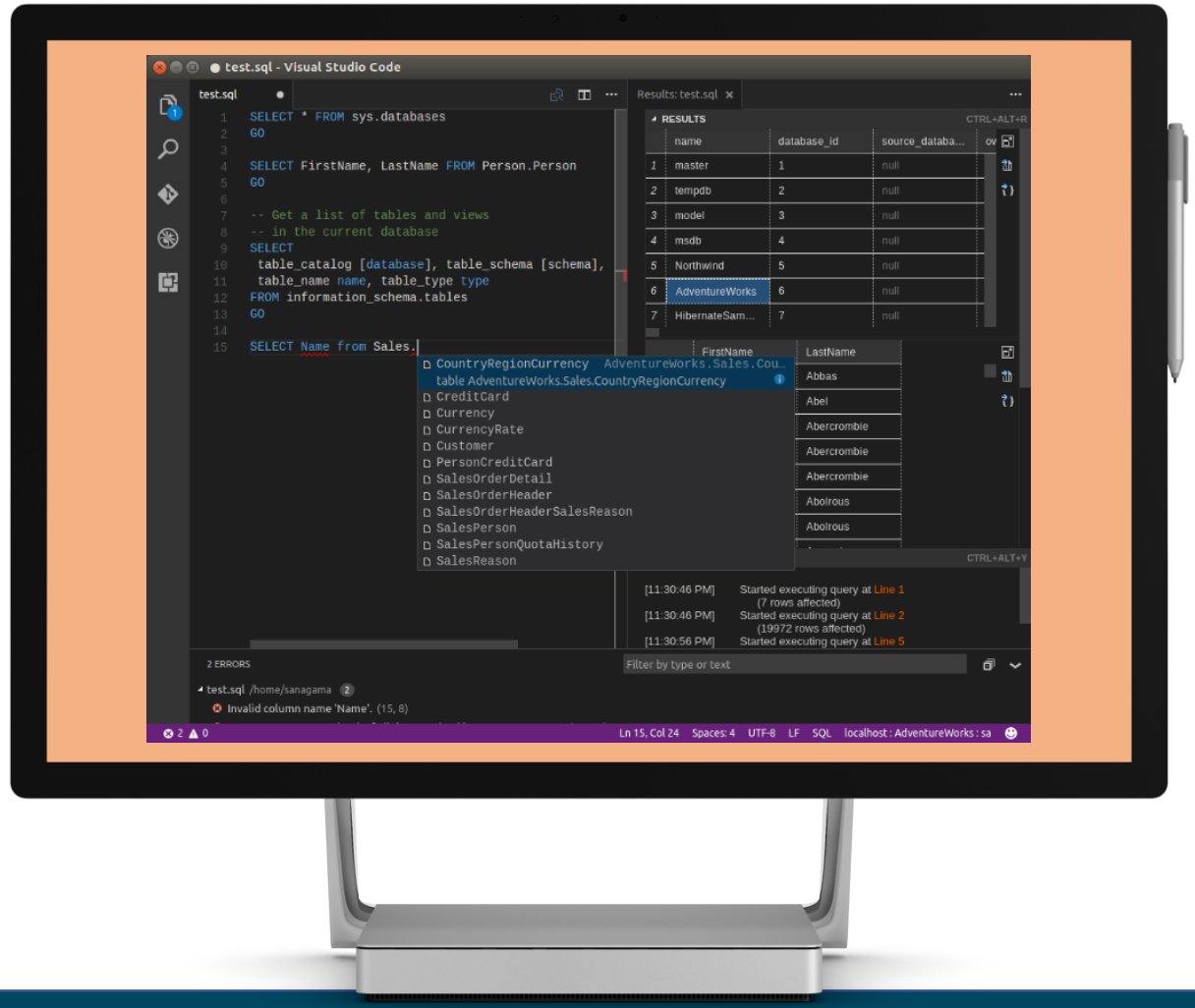
Visual Studio Code mssql extension

Native OS command line tools

- sqlcmd, bcp, sqlpackage

mssql-cli

mssql-scripter



MSSQL y Containers

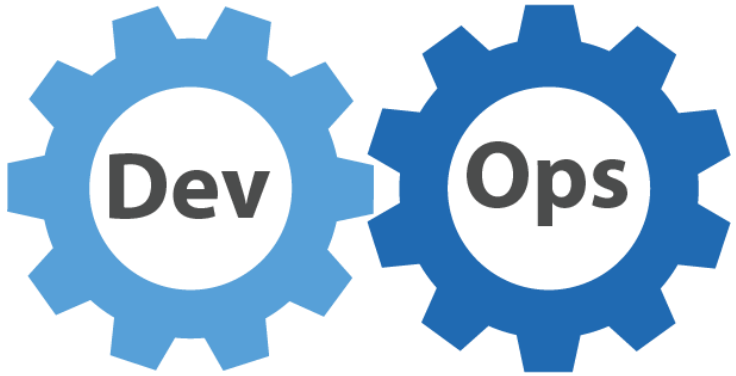
Why Containers?

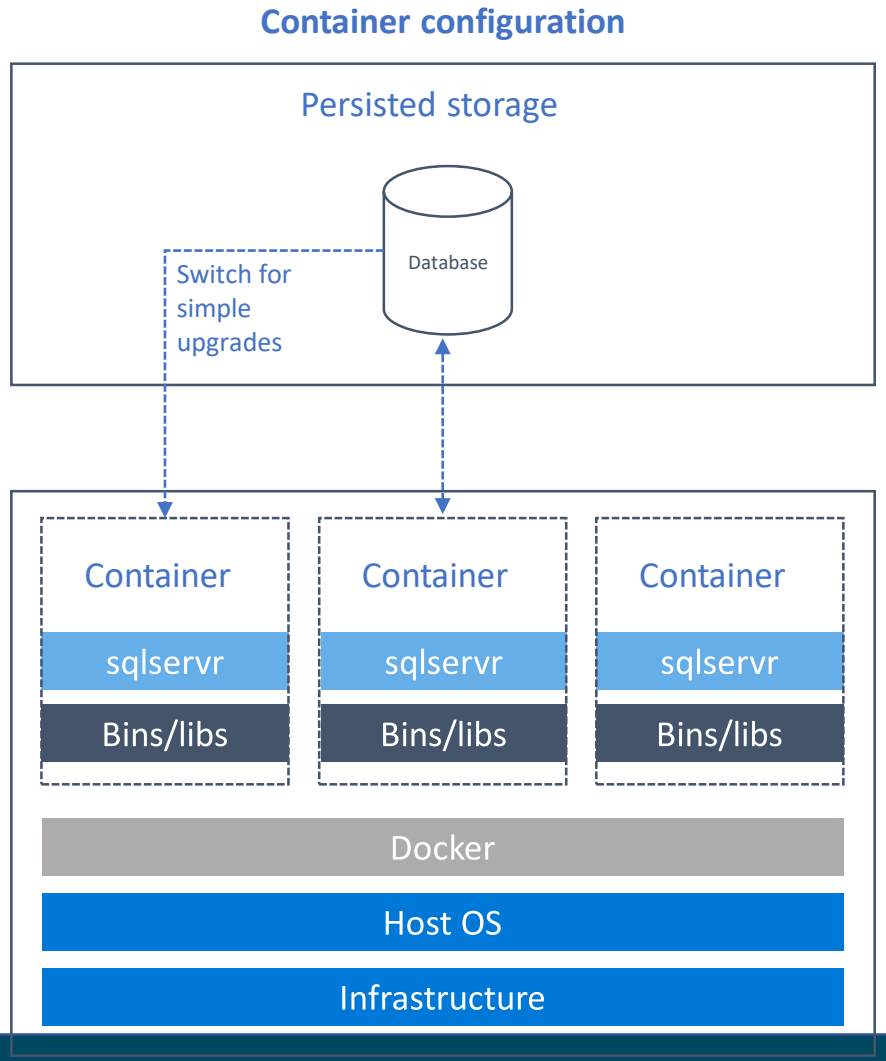
Portable
Run anywhere Docker is supported

Lightweight
Reduced disk, CPU, and memory footprint

Consistent
Consistent image of SQL Server, scripts, and tools

Efficient
Faster deployment, reduced patching, and less downtime





k8s implementations

minikube

- Single node on your laptop

Kubeadm

- Install your own cluster

RedHat OpenShift

- K8s platform private or public cloud

Azure Kubernetes Service (AKS)

- Azure hosted k8s

OpenShift on Azure (OSA)

- Managed OpenShift on Azure

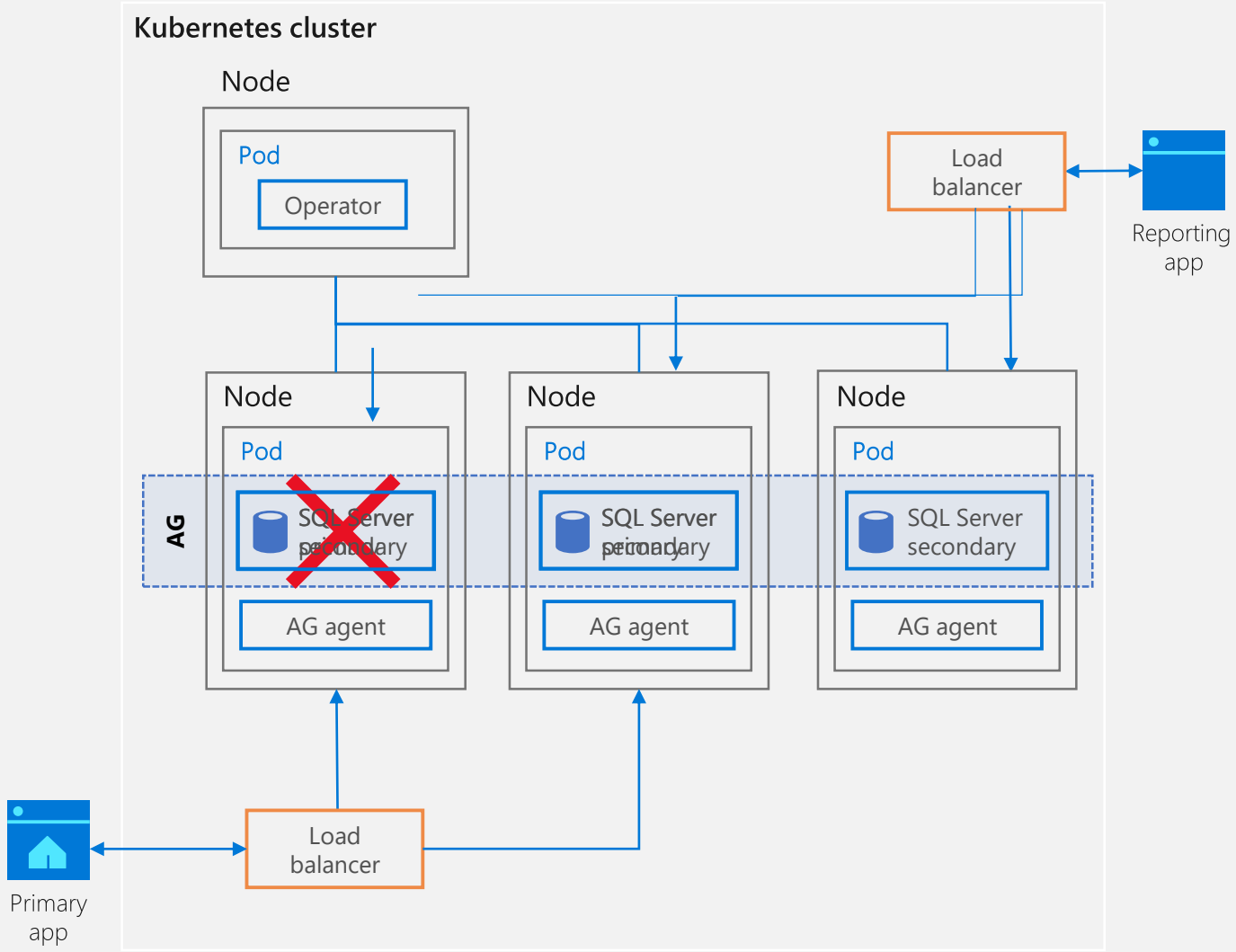
Other

- Azure Stack
- Windows Server

Always On Availability Groups on Kubernetes

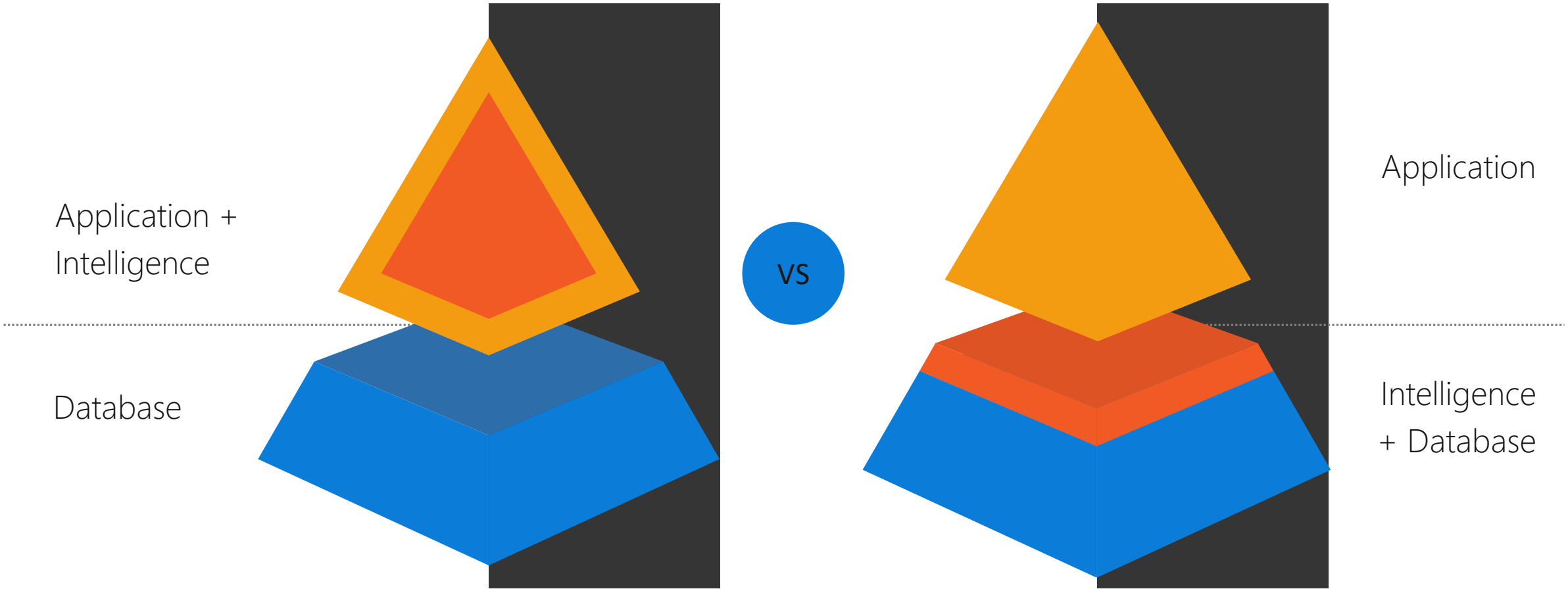
- SQL Server/k8s failover integration
- Operator deployment
- AG concepts all apply
- Load Balancer for Primary App
- Load Balancer for Secondary Replica Readers

Availability groups on Kubernetes



MSSQL y ML

Llevar la inteligencia a donde están los datos

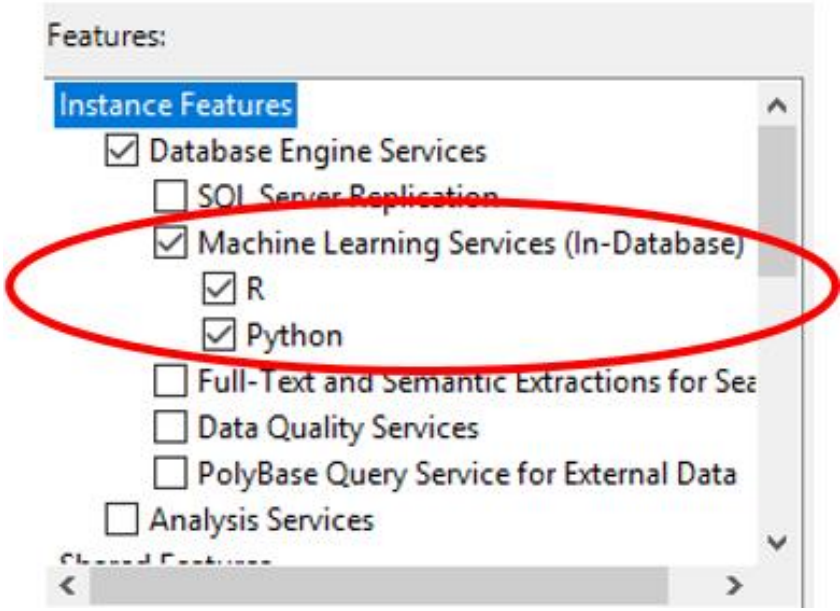


Regular Database + App

Intelligence Database + App

SQL Machine Learning Services

- **SQL Server 2016**
  - R support (3.2.2 version)
  - Microsoft R Server
- **SQL Server 2017**
  - Scoring native en TSQL usando PREDICT function
  - EXTERNAL LIBRARY DDL para el manejo de paquetes R
  - Ejecución en batch para la entrada de datos
  - Soporte para R (3.3.3 version)
  - Soporte para Python (Anaconda 3.5.2)
- **SQL Server 2019**
  - Soporte para Java
  - Big Data Cluster



Data Scientists - Exploración de Datos y Desarrollo de Modelos

Data Scientist Workstation

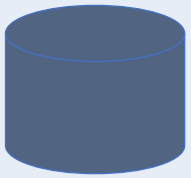
Any R/Python IDE

train <- RxSqlServerData(query, connectionString, computeContext)

rxLogit(formula, train)

1 Script

3 Results



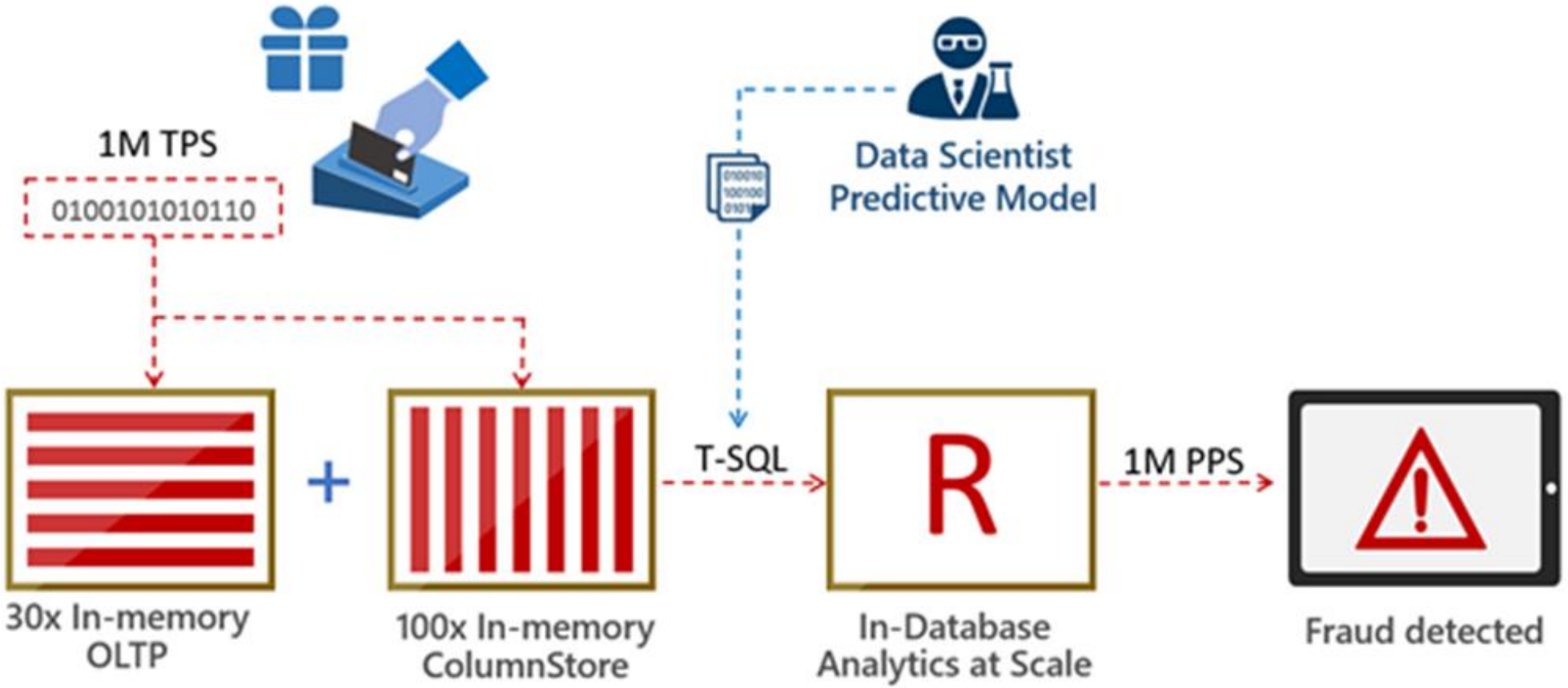
SQL Server

Machine Learning Services

R/Python Runtime

2 Execution

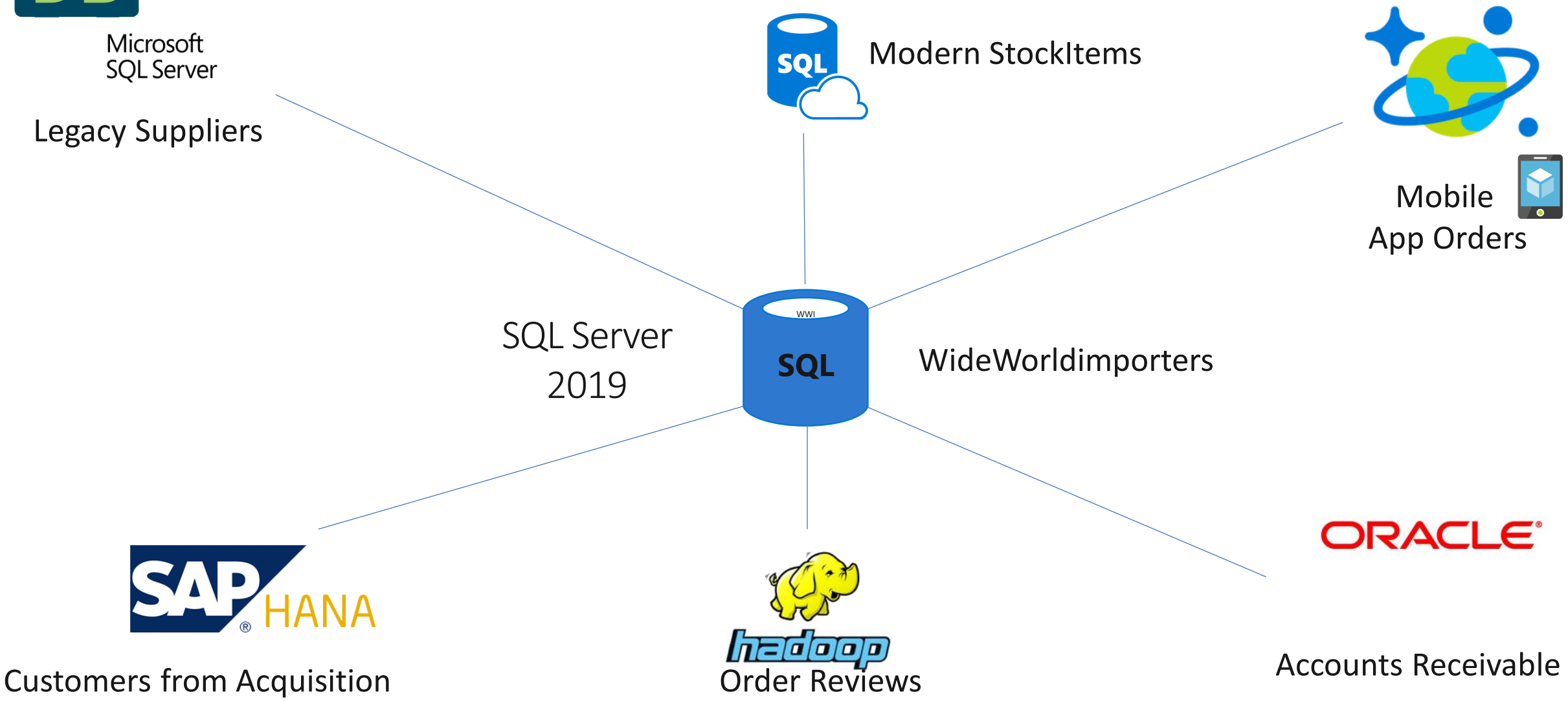
1,000,000 predictions per second



https://blogs.technet.microsoft.com/dataplatforminsider/2016/10/11/1000000-predictions-per-second/

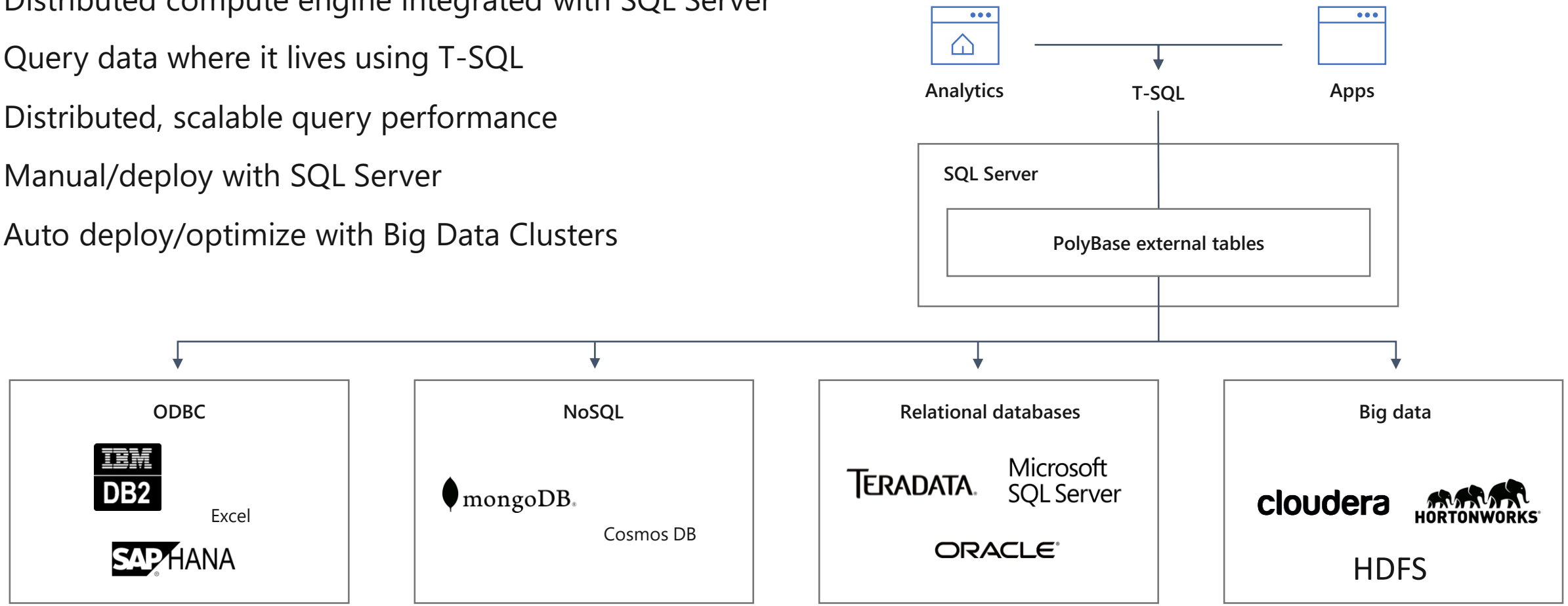
MSSQL
Data Virtualization

SQL Server 2019: Data Virtualization



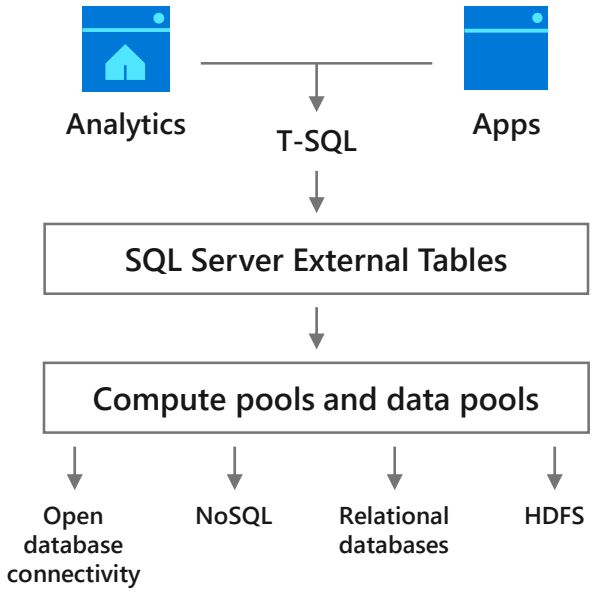
SQL Server Polybase?

- ✓ Distributed compute engine integrated with SQL Server
- ✓ Query data where it lives using T-SQL
- ✓ Distributed, scalable query performance
- ✓ Manual/deploy with SQL Server
- ✓ Auto deploy/optimize with Big Data Clusters



SQL Server 2019 Big Data Clusters

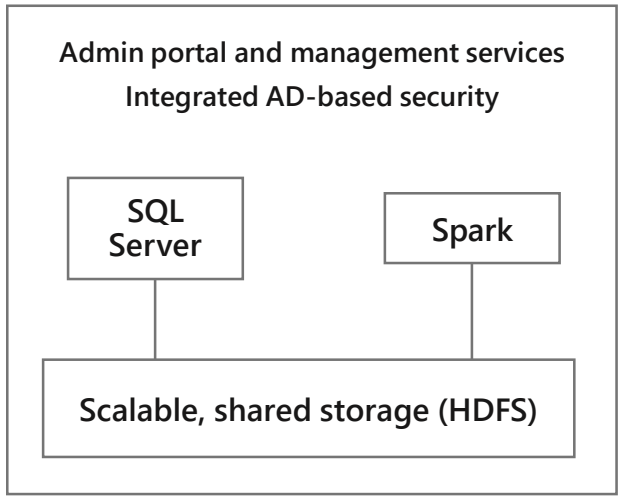
Data virtualization



Combine data from many sources without moving or replicating it

Scale out compute and caching to boost performance

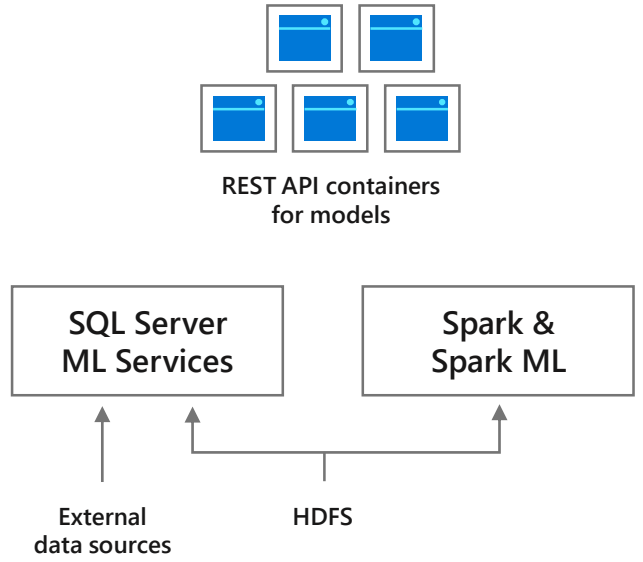
Managed SQL Server, Spark, and data lake



Store high volume data in a data lake and access it easily using either SQL or Spark

Management services, admin portal, and integrated security make it all easy to manage

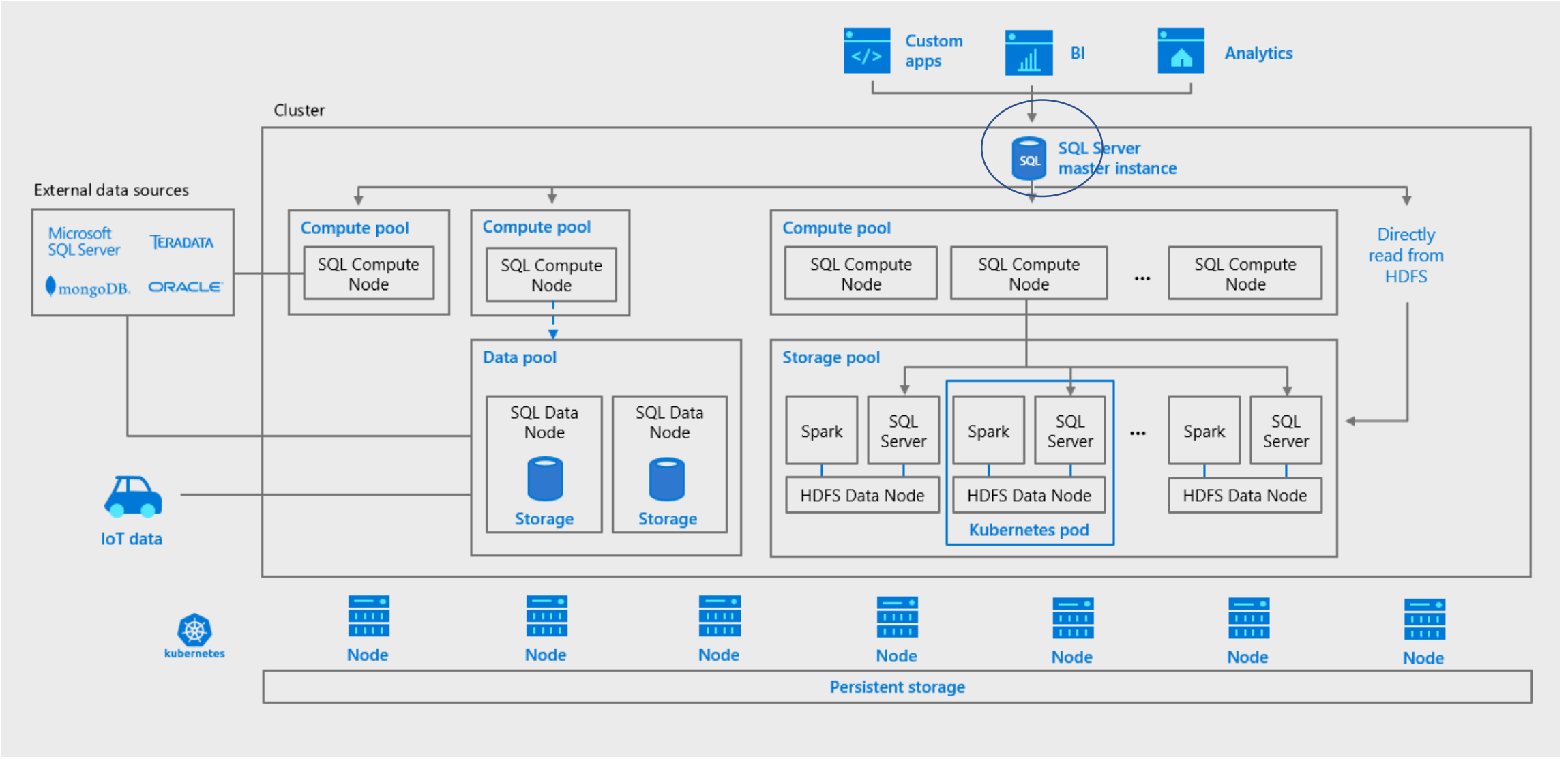
Complete AI platform



Easily feed integrated data from many sources to your model training

Ingest and prep data and then train, store, and operationalize your models all in one system

SQL Server 2019 y ML (big data Cluster)



Links

MS Build 2019
https://www.microsoft.com/en-us/build
SQL Server 2019 big data cluster
https://docs.microsoft.com/en-us/sql/big-data-cluster/big-data-cluster-overview?view=sqlallproducts-allversions
SQL Server containers
https://docs.microsoft.com/en-us/sql/linux/quickstart-install-connect-docker?view=sql-server-2017&pivots=cs1-bash

Muchas gracias