



SQL Server 2019: The Modern Data Platform



Gracias a nuestros patrocinadores



**UNIVERSIDAD
MESOAMERICANA**



**Internet Society
Capítulo Guatemala**



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Muppity

Experience

Microsoft Certified Professional 2012/2014, 2016-2017

More than 10 years of experience

Multi-platform DBA

Community

PASS Guatemala SQL Server User Group
board member

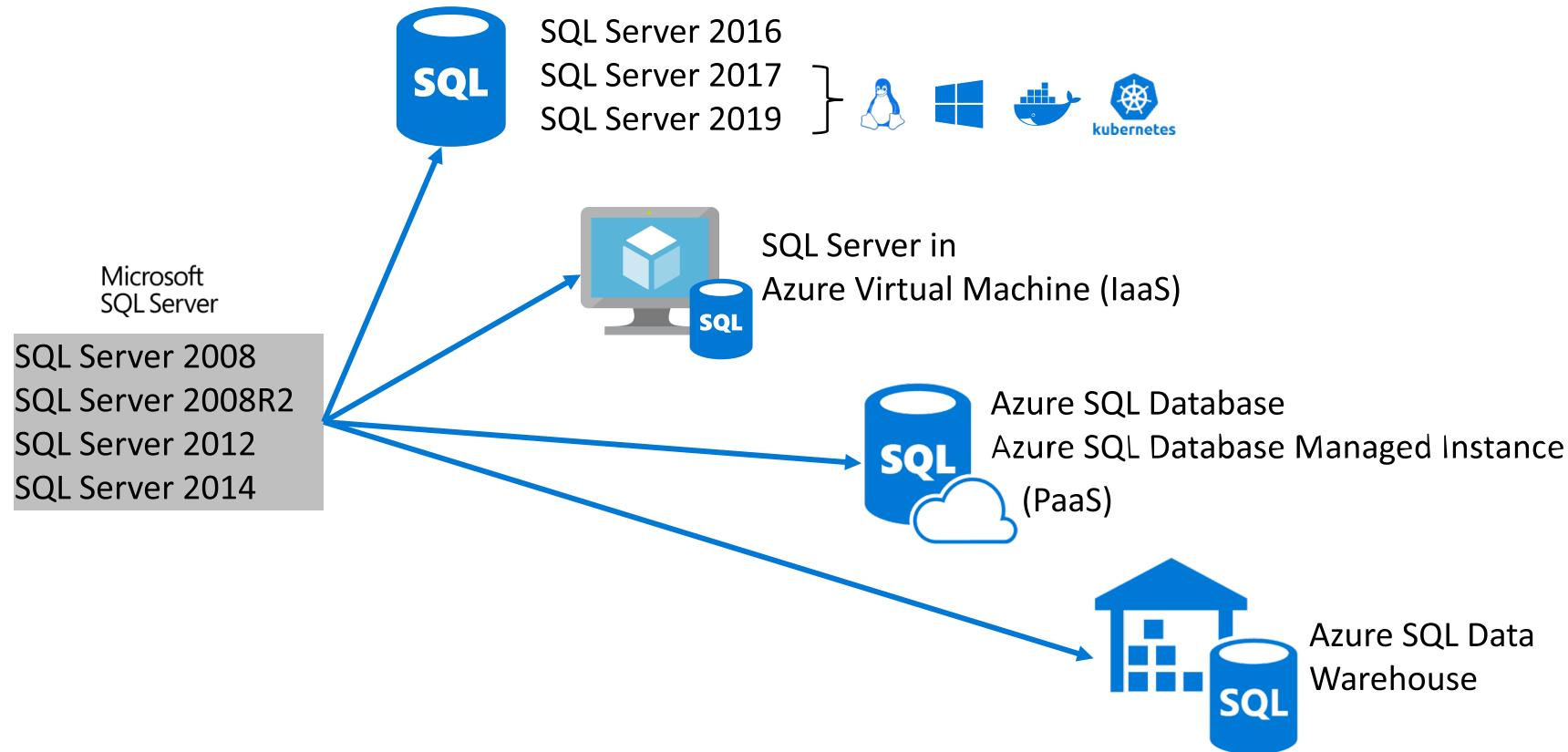
Fields of Experience

MS SQL Server

Linux Distros

Oracle 10-11g

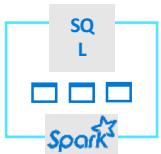
Azure Data Modernization Choices



Modern Data Platform SQL Server 2019

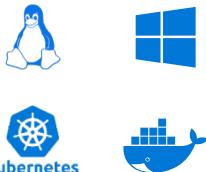
Now with big data clusters

Intelligence over any data



Analytics over structured and unstructured data with the power of SQL and Apache Spark

Choice of platform and language



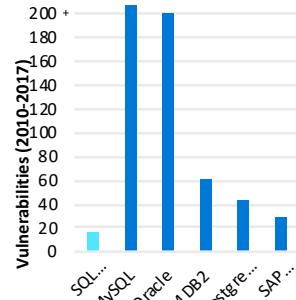
T-SQL
Java
C/C++
SCALA
Node.js
C#/VB.NET
Python
Ruby
.NET core

Industry-leading performance



#1 OLTP performance¹
#1 DW performance on 1TB², 10TB³, and 30TB⁴

Most secure over the last 8 years⁵



Insights in minutes and rich reports



The best of Power BI and SQL Server Reporting Services in Power BI Report Server



In-memory across all workloads

Private cloud

Most consistent data platform



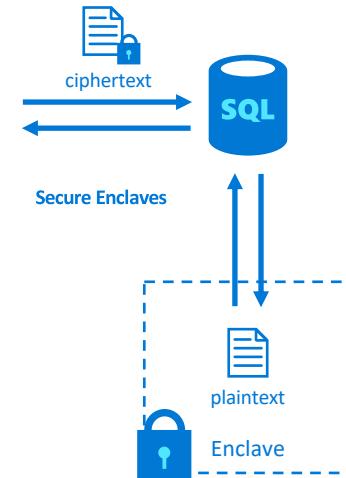
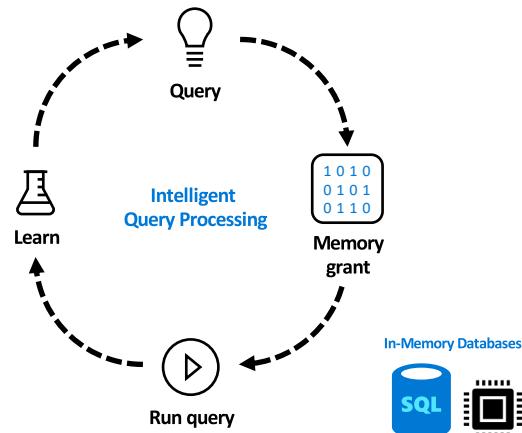
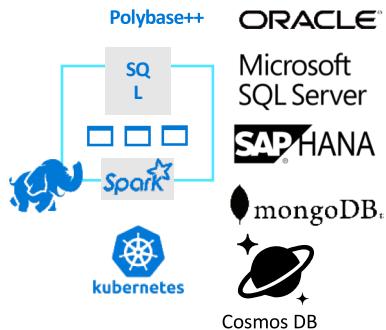
1/10th the cost of Oracle

All TPC Claims as of 1/19/2018.

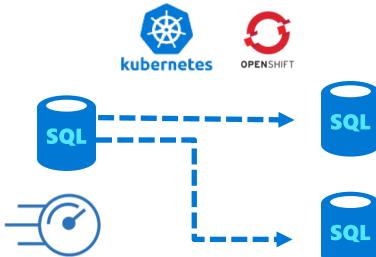
¹ <http://www.tpc.org/4081>; ² <http://www.tpc.org/3331>; ³ <http://www.tpc.org/3326>; ⁴ <http://www.tpc.org/3321>; ⁵ National Institute of Standards and Technology Comprehensive Vulnerability Database

SQL Server 2019

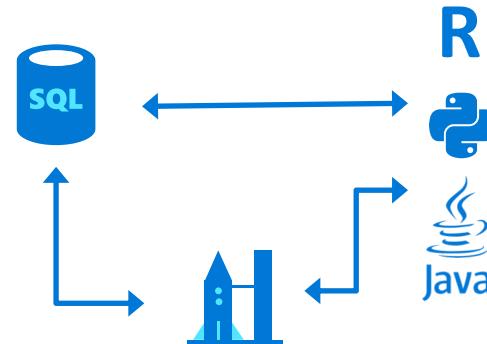
Key New Functionality



High Availability



Built-in Machine Learning and Extensibility



Modern Platforms with Compatibility

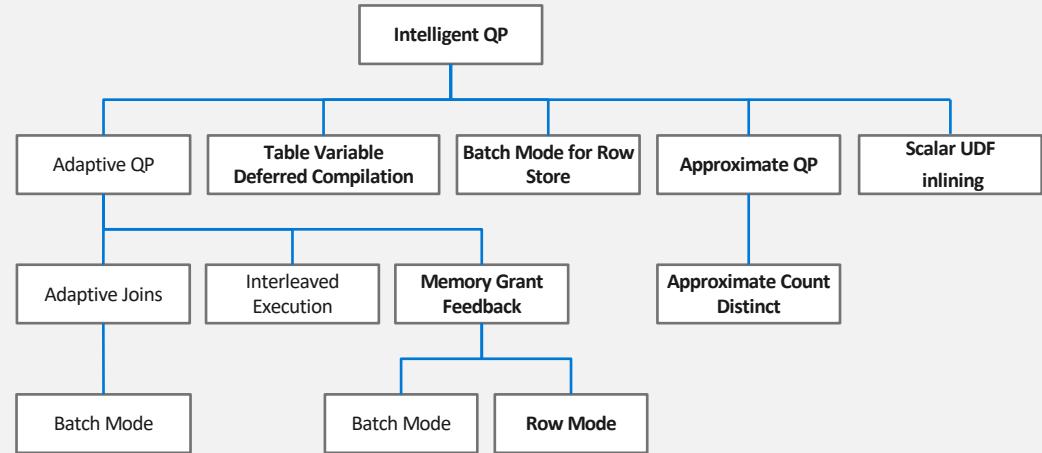


Intelligent Performance with SQL Server

The intelligent database

- Intelligent Query Processing
- Performance insights anytime and anywhere with **Lightweight Query Profiling**
- Accelerating I/O performance with **Persistent Memory**
- TempDB: It Just Runs Faster
Memory-optimized TempDB Metadata

The Intelligent Query Processing feature family



Mission critical security

Confidential computing

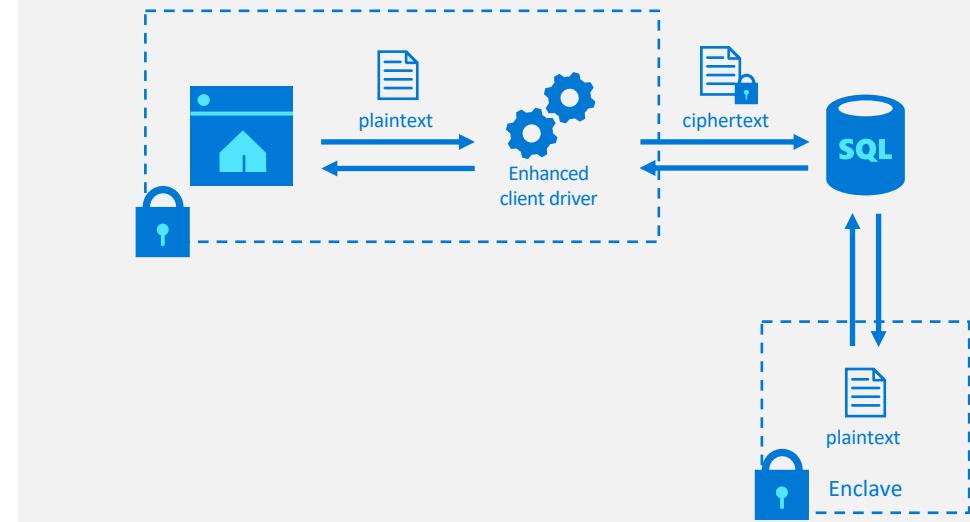
Always Encrypted with secure enclaves

Data Classification and auditing built-in

TDE scan suspend and resume

Simplified certificate management

Always Encrypted with secure enclaves



High Availability

Keep SQL Server running

Online Index Enhancements

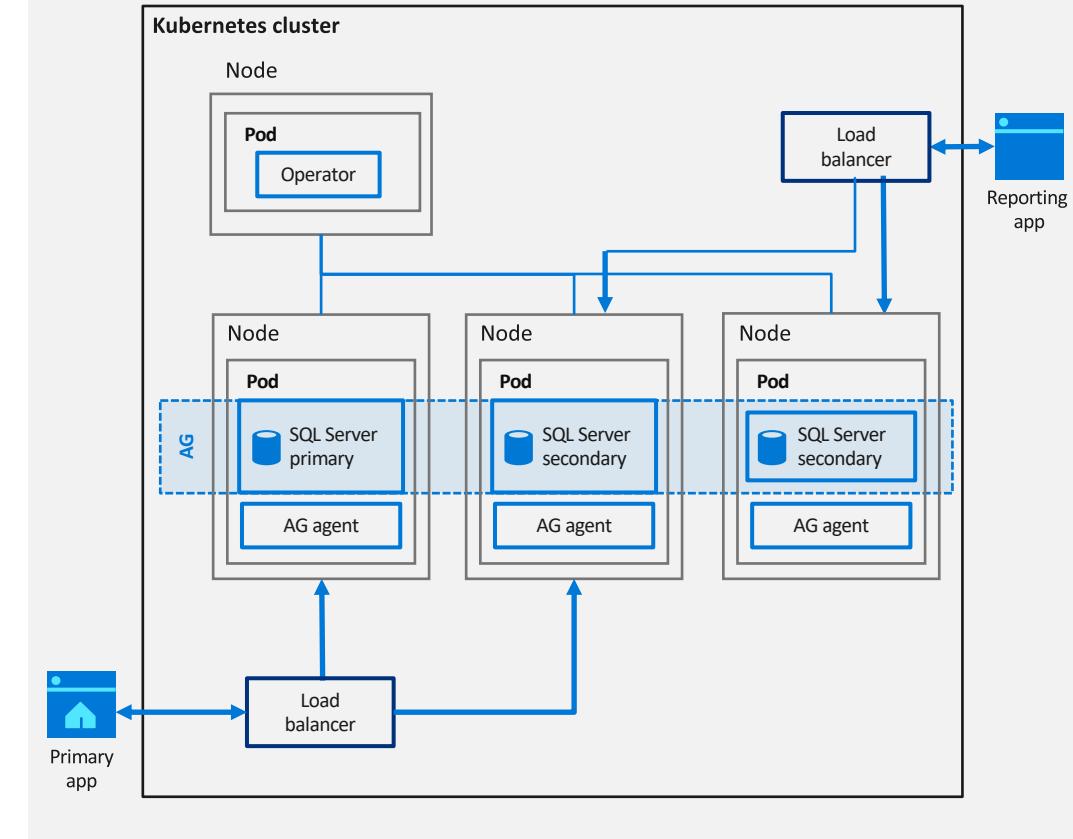
Availability Groups Enhancements

System Databases (Planned)

Availability groups on Kubernetes

Accelerated Database Recovery

Availability groups on Kubernetes



SQL Server 2019 and Linux and Containers

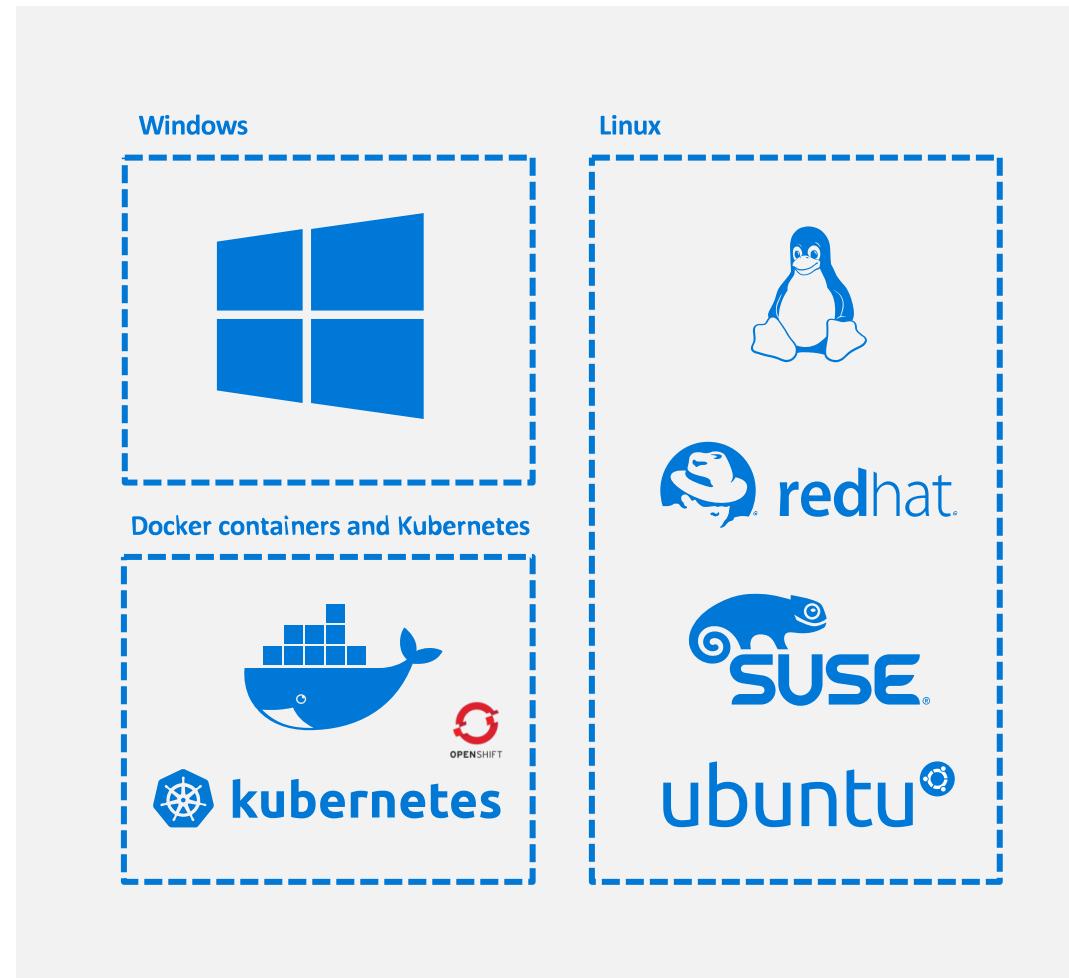
New Features

- Replication
- Distributed transactions
- Machine Learning
- Polybase

The Microsoft Container Registry

Red Hat Images

Availability Groups on Kubernetes



Why SQL Server and Containers?



Portable

Run anywhere Docker is supported



Lightweight

Reduced disk, CPU, and memory footprint



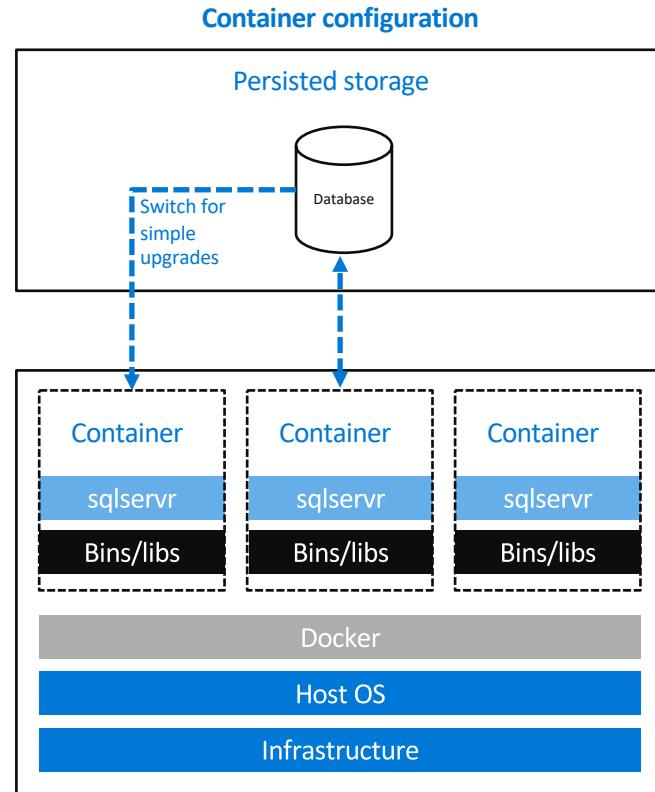
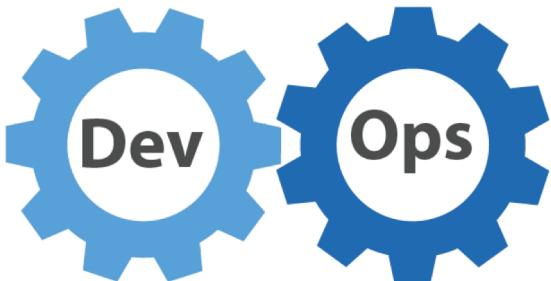
Consistent

Consistent image of SQL Server, scripts, and tools



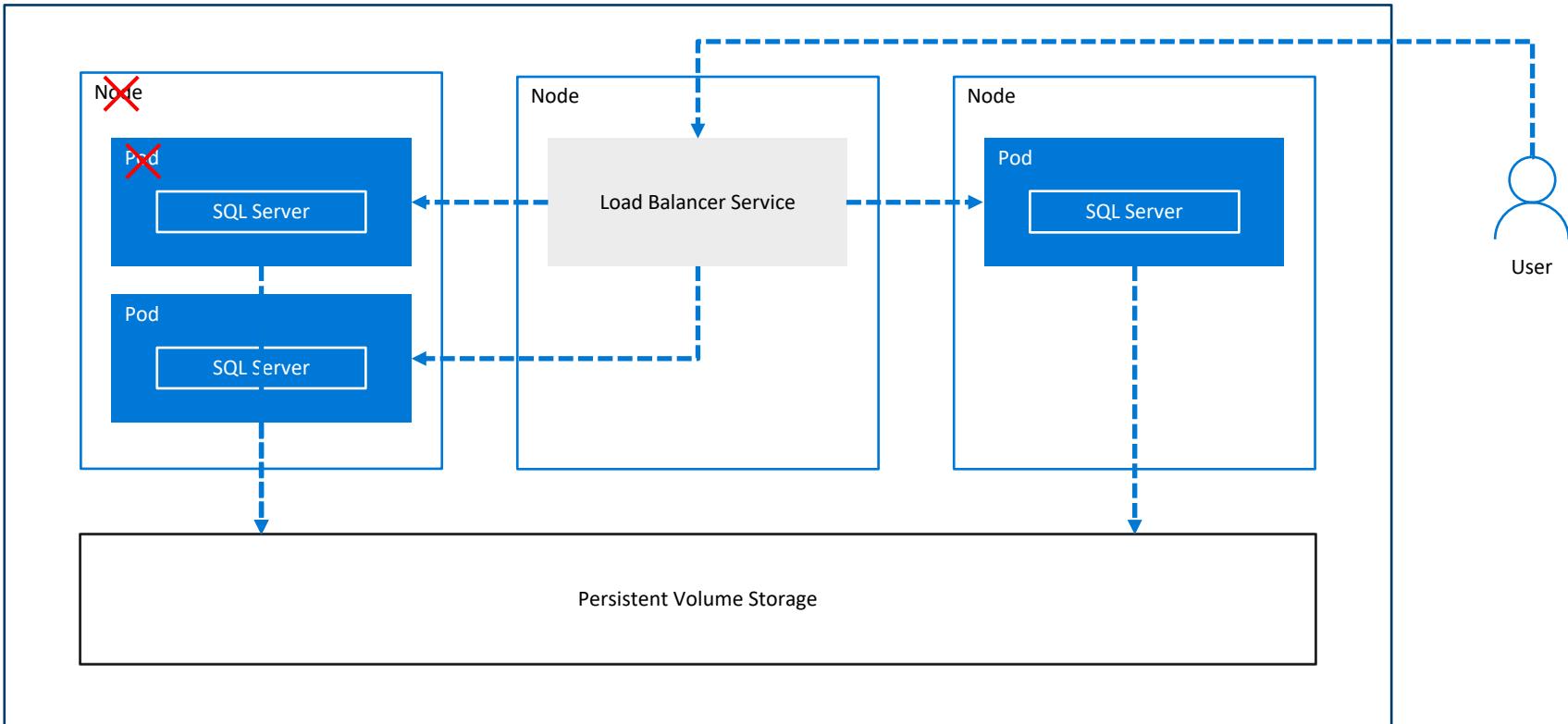
Efficient

Faster deployment, reduced patching, and less downtime



SQL Server - Shared storage HA in Kubernetes

Built-in HADR orchestration with no clustering required

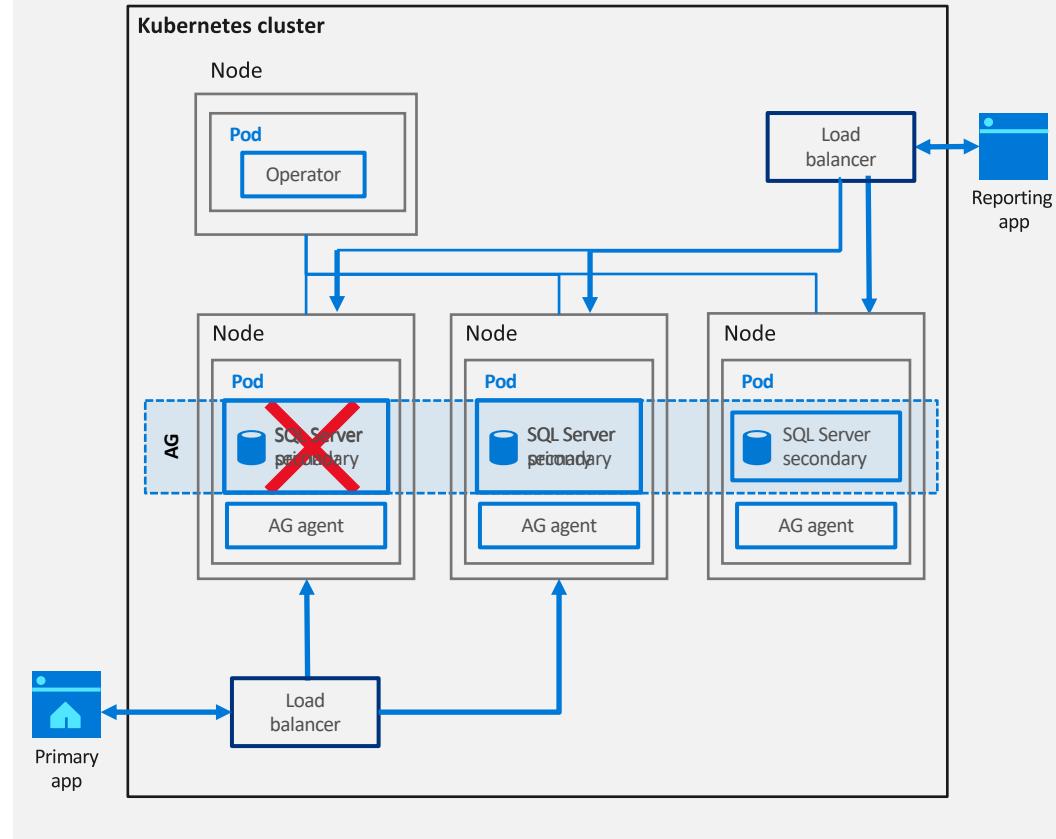


SQL Server 2019

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



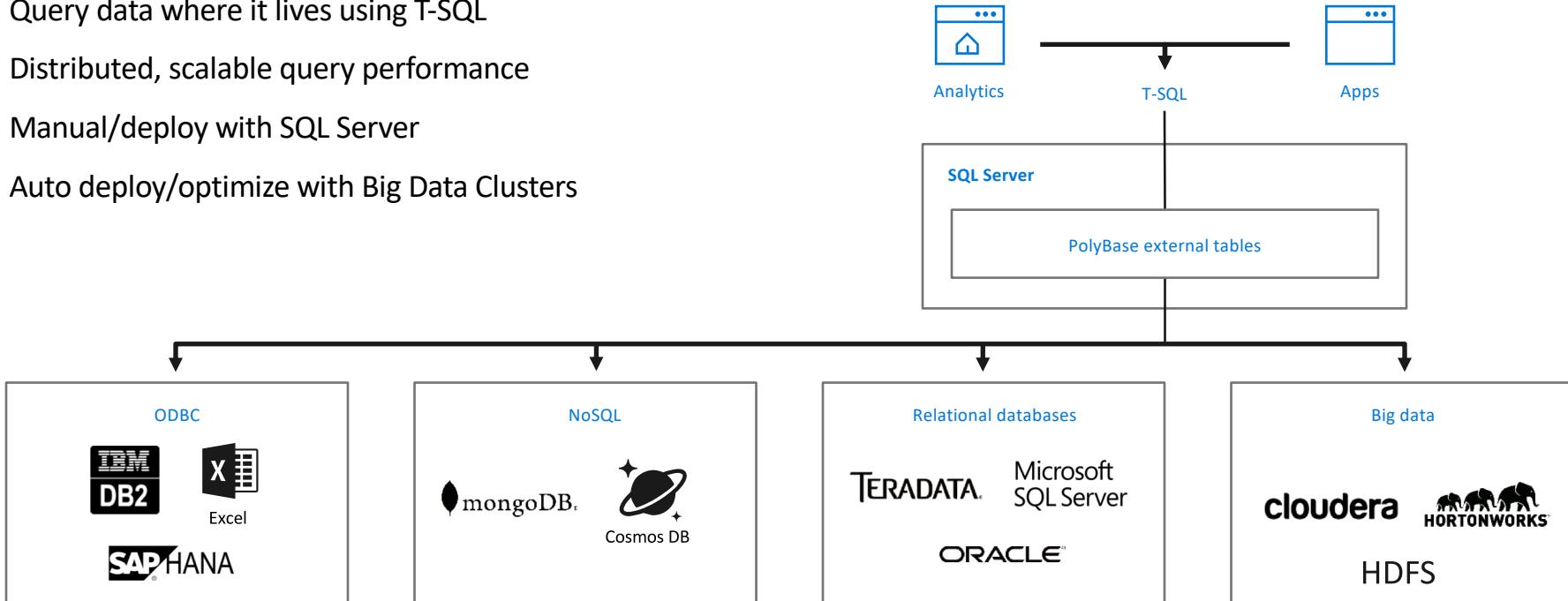
Demo



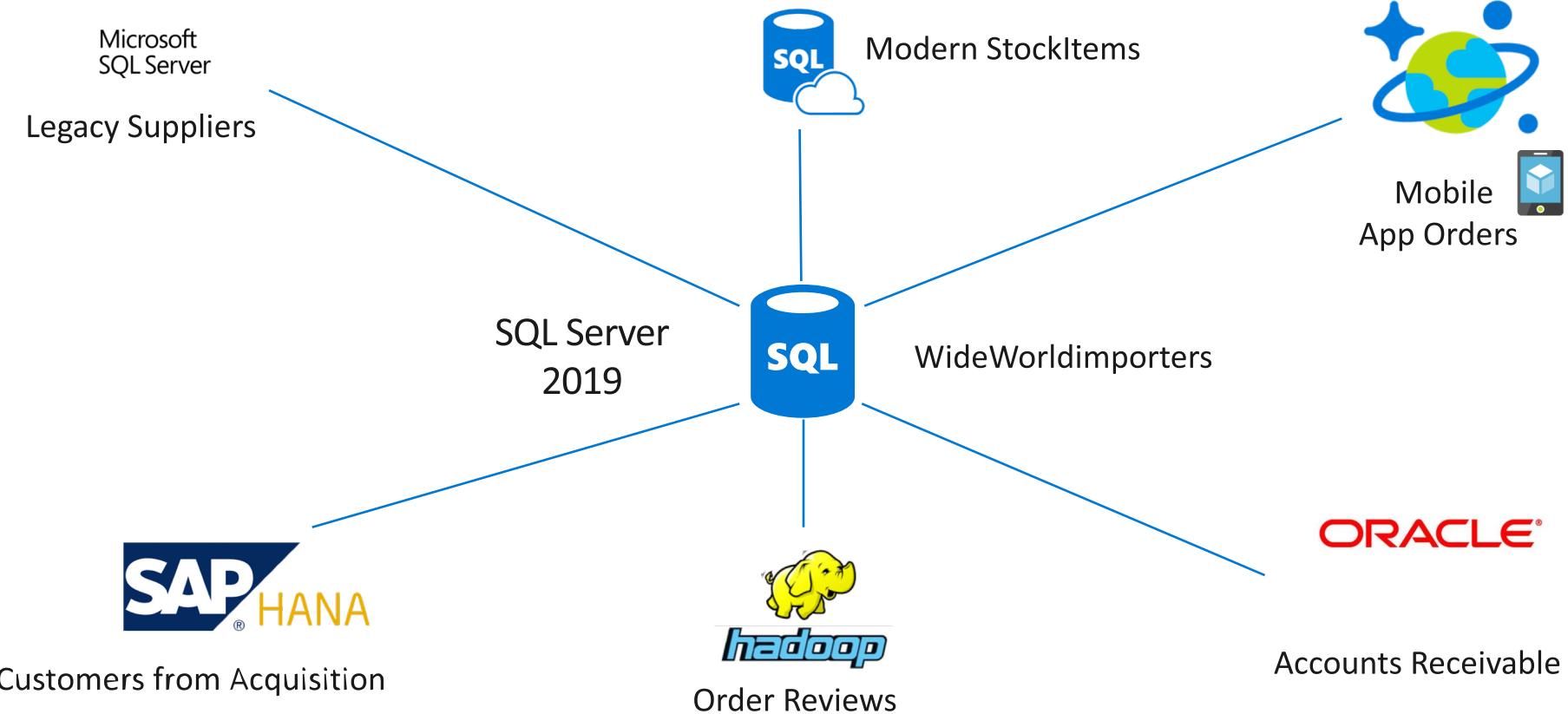
What is SQL Server Polybase?

“It’s all about
Data Virtualization”

- ✓ 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: Data Virtualization



The Customer Voice

- Columnstore stats in DBCC CLONEDATABASE
- Estimate compression for Columnstore indexes
- Diagnostics for auto stats blocking
- The #1 voted customer feedback item of all time: String Truncation (1000+ votes)
- Troubleshoot page resource waits with new built-in T-SQL

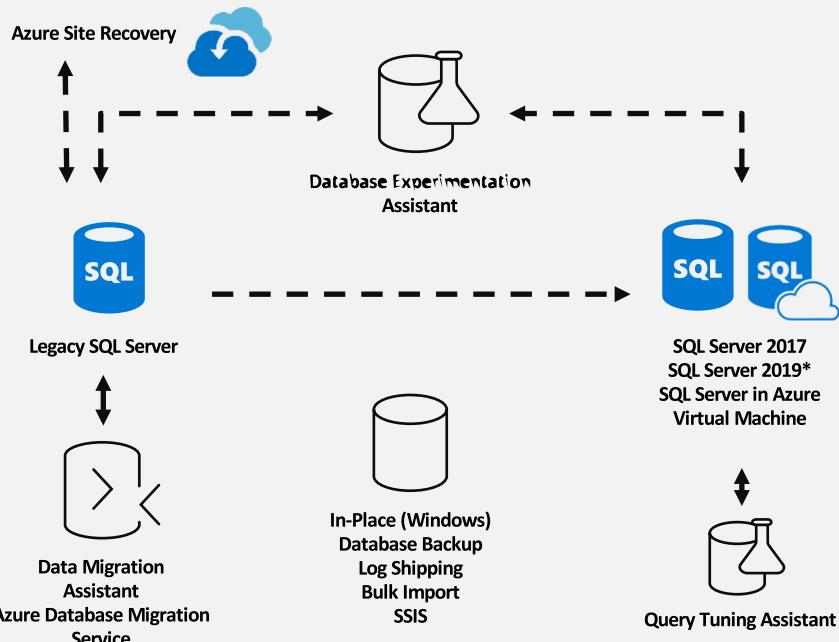
String or binary data would be truncated

String or binary data would be truncated
in table '%.*ls', column '%.*ls'.
Truncated value: '%.*ls'

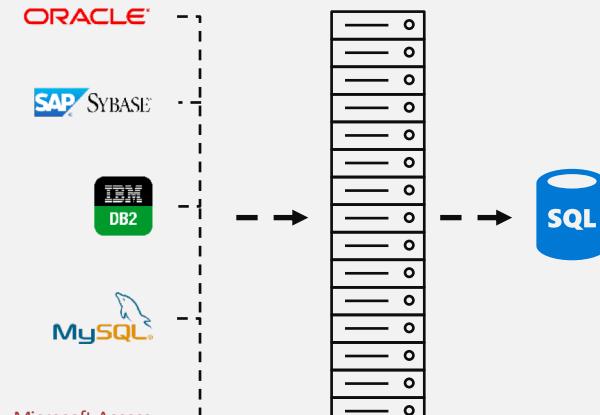
```
SELECT page_info.*  
FROM sys.dm_exec_requests AS d  
    CROSS APPLY  
sys.fn_PageResCracker(d.page_resource) AS r  
    CROSS APPLY sys.dm_db_page_info(r.db_id,  
r.file_id, r.page_id, 'DETAILED')  
    AS page_info;
```

Migrate to the Modern SQL Server

Migration from legacy SQL Server



Migration from external databases



Questions?



Learn more

Use our free training at <https://aka.ms/sqlworkshops>

Learn from videos and demos at <https://aka.ms/sqlchannel>

Download and try it at <http://aka.ms/ss19>

What's new for SQL 2019 [documentation](#)

Sign-up for the EAP program at <https://aka.ms/eapsignup>



Material



Follow

Github

<https://github.com/Muppity/Presentations-Material>

Docker, Kubernetes Resources

https://hub.docker.com/_/microsoft-mssql-server

<https://kubernetes.io/docs/tutorials/hello-minikube/>



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Thank You