

# Gewinnen im neuen Zeitalter des Datenmanagements\_Warum Dell Technologies die richtige Wahl ist

Martina Kern

Ingram Micro, Sr. Business Development Manager Dell Technologies

# Today's agenda

11:00 – 11:05 Begrüßung und Einführung

Martina Kern, Ingram Micro, Sr. Business Manager Dell Technologies

11:05 – 11:25 Integration aller Daten mit SQL Server 2019 und Nutzung von Azure Arc

Horst Urlberger, Microsoft Azure Business Group, Business Lead – Data Modernization

11:25 – 11:50 Informationen zur Positionierung, Plattform und Sizing von Microsoft-Daten und SQL Server mit Dell Technologies

Mark Mulvany, Dell Technologies, EMEA Hybrid Cloud Lead (en) mit  
Markus Wolfram, Dell Technologies, System Engineer Distribution

11:50 – 12:00 Ressourcen & Call to Action

Markus Wolfram, Dell Technologies, System Engineer Distribution  
Nikola Grujicic, Ingram Micro, Presales System Engineer

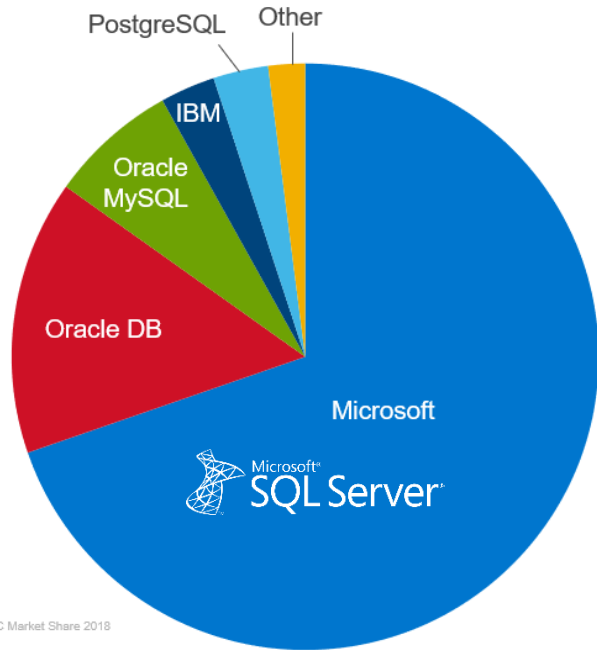
# Stein für Stein zum erfolgreichen Datacenter – ruckzuck!

Wir wollen Sie auch in Zukunft optimal unterstützen und bitten Sie uns kurz am Ende des Webinars ein paar Fragen zu beantworten



**Wir verlosen 3 Dell EMC PowerEdge Baustein-Sets**

# SQL Server market: ±€150M infra



Source : IDC Market Share 2018

## Database market:

- Microsoft leads Database market with ±65% share
- Database market to grow 8% CAGR to \$125,6B by 2026

## EMEA 2022 SQL Server TAM infra: ±€1.0B

- Server: ±€450M
- Storage: ±€550M

Source: IDC Market report & T4ai



Germany ICT market ± 15% EMEA

## Germany 2022 SQL Server TAM infra: ±€150M

- Av. deal size: ±€150K

# Integration aller Daten mit SQL Server 2019 und Nutzung von Azure Arc

Horst Urlberger

Microsoft Azure Business Group, Business Lead – Data Modernization



# Businesses face broad challenges if they do not modernize



Expensive ETL for integrating external data sources



Siloed relational and big data



Time-consuming query performance tuning



Meeting data security and compliance standards



Keeping data and applications always available.



Performance affected by unreliable I/O latency



Consistency across platforms and languages

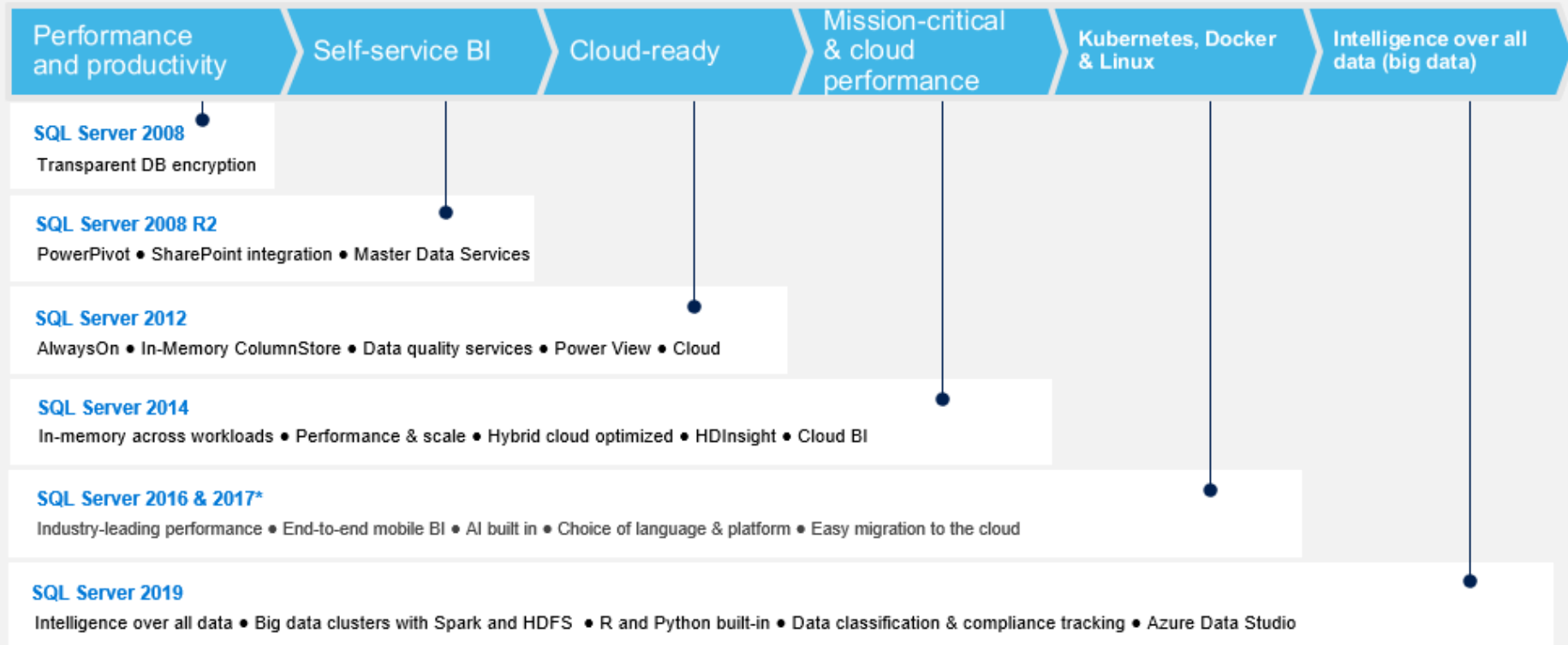


Should I invest in containers



Barriers to creating intelligent apps with AI and ML

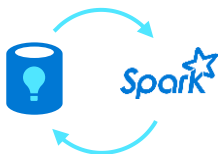
# The Evolution of Microsoft SQL Server



# SQL Server 2019

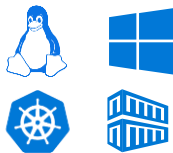
Industry-leading performance and security, with intelligence over all your data

Intelligence over any data



AI and Machine Learning over all data with the power of SQL and Spark

Choice of platform, language and container



T-SQL  
Java  
C/C++

PHP  
Node.js  
C#/VB.NET

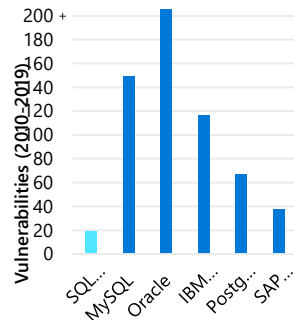
Python  
Ruby

Industry-leading performance and availability



#1 OLTP performance<sup>1</sup>  
#1 DW performance on 1TB<sup>2</sup>, 10TB<sup>3</sup>, and 30TB<sup>4</sup>  
Intelligent Database

Most secure over the last 9 years<sup>5</sup>



Insights in minutes on any device



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



Edge

In-memory across all workloads



Private cloud

1/10th the cost of Oracle

Most consistent data platform



Public cloud

All TPC Claims as of 9/23/2019.

<sup>1</sup> <http://www.tpc.org/4081>; <sup>2</sup> <http://www.tpc.org/3331>; <sup>3</sup> <http://www.tpc.org/3336>; <sup>4</sup> <http://www.tpc.org/3337>; <sup>5</sup> National Institute of Standards and Technology Comprehensive Vulnerability Database



# Remove data silos with Polybase

## – All about Data virtualization



### Challenge

Integrating data from numerous data silos is complex with traditional ETL methods



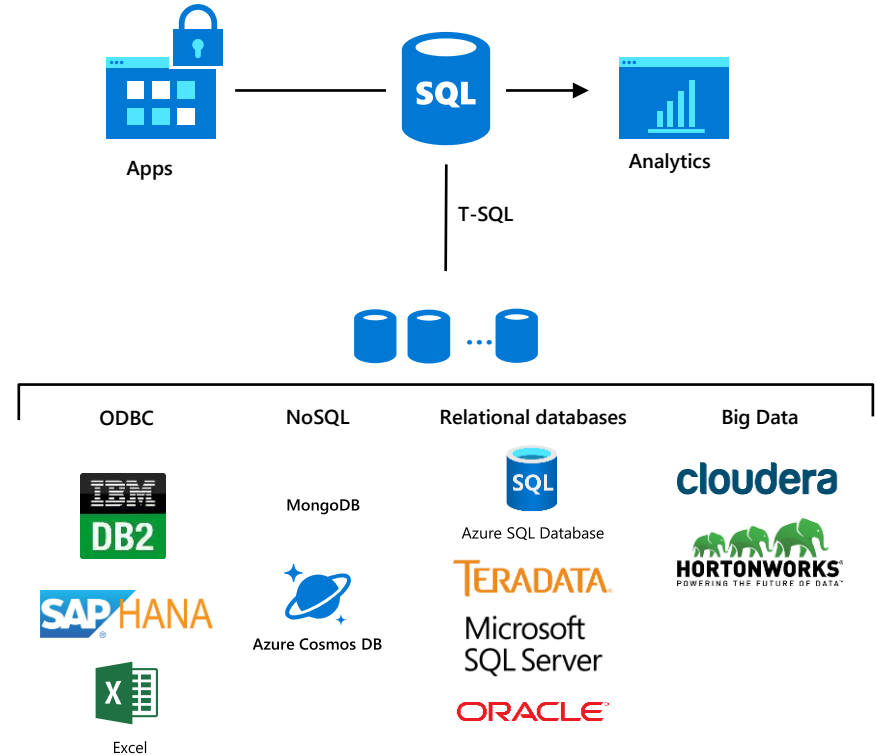
### Solution

Access from multiple sources without moving data

Integrate data with data virtualization

T-SQL language with external tables

Distributed/scalable performance with Polybase



# Industry leading performance



## Challenge

DBA's spend most of their time tuning database performance, leading to high operational costs

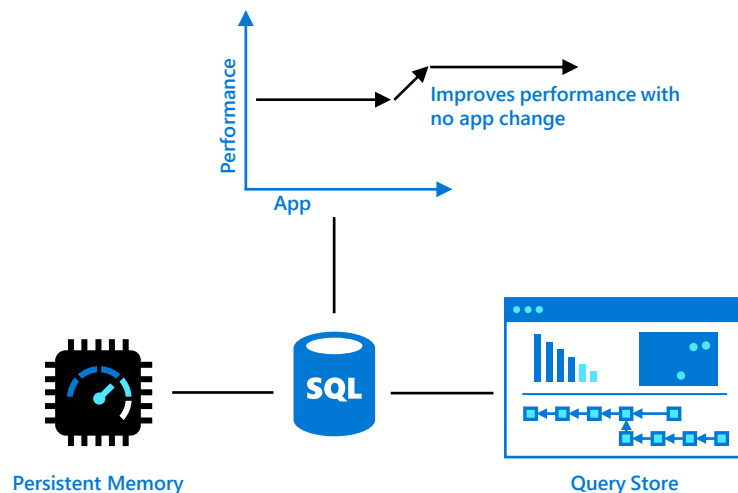


## Solution

Automation with Intelligent Database capabilities while providing mission critical performance

- Gain performance with no app changes with Intelligent Query Processing
- Performance insights anytime anywhere with Query Store and lightweight query profiling
- Accelerate I/O performance with Persistent Memory

## Intelligent Database



Intelligent Query Processing improved Banco Itaú's query performance by 92% without the need for any code changes



## Challenge

Setting up disaster recovery in an IaaS environment creates management overhead



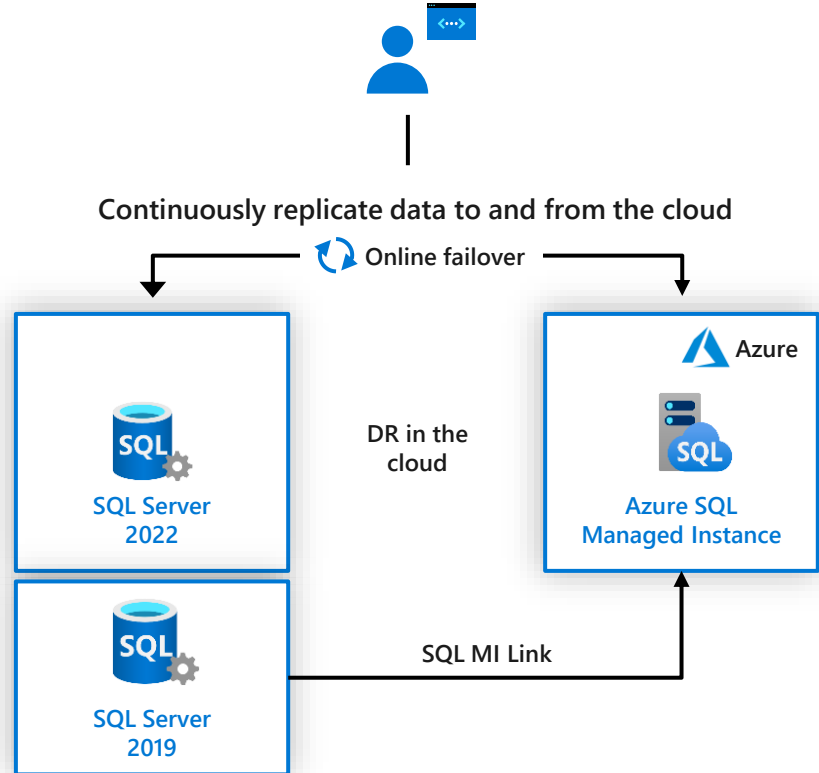
## Solution

Run disaster recovery with less maintenance with new link feature for Azure SQL Managed Instance

- Deploy and configure easily with PaaS
- Optionally use Azure SQL Managed Instance for read-scale out
- Built-in distributed availability group (DAG)
- Restore Azure SQL Managed Instance databases back to SQL Server

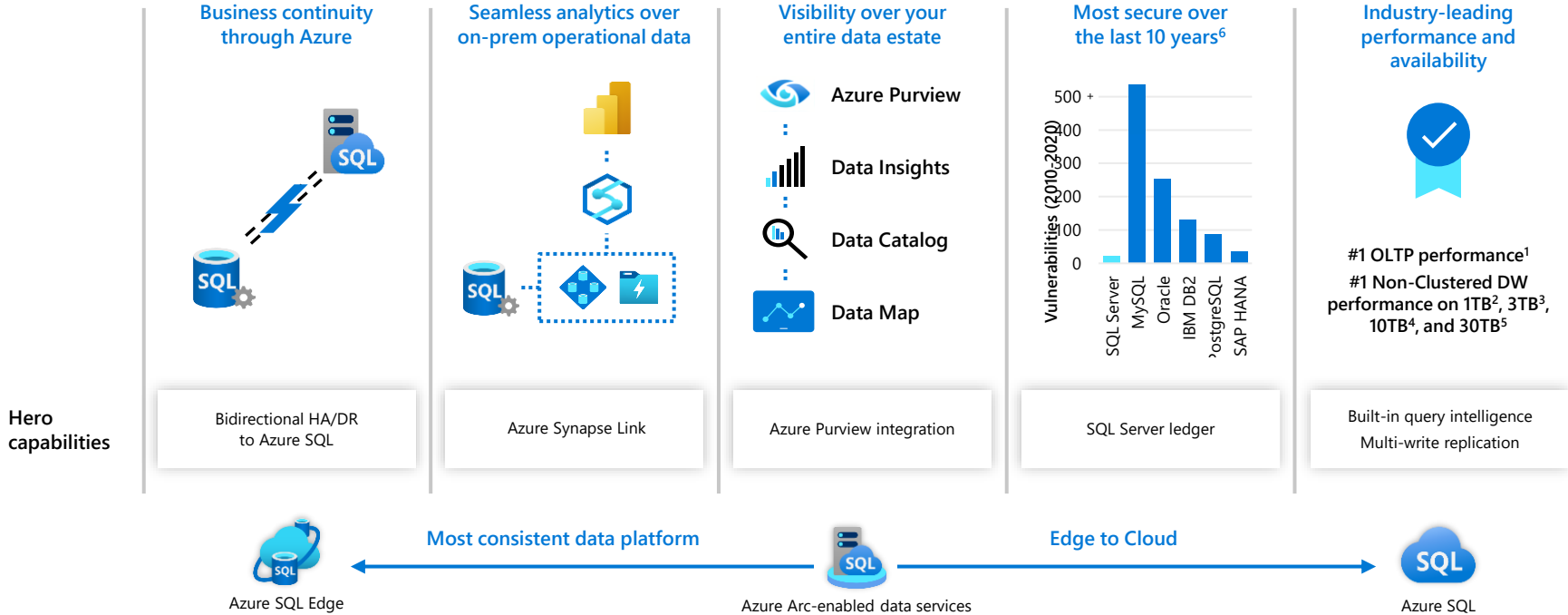
# SQL Server 2022 — Business continuity through Azure

## Increase uptime



# SQL Server 2022

Azure-enabled with continued performance and security innovation



All TPC Claims as of 10/06/2021.

<sup>1</sup> <http://www.tpc.org/4087>; <sup>2</sup> <http://www.tpc.org/3374>; <sup>3</sup> <http://www.tpc.org/3380>; <sup>4</sup> <http://www.tpc.org/3362>; <sup>5</sup> <http://www.tpc.org/3364>; <sup>6</sup> National Institute of Standards and Technology Comprehensive Vulnerability Database

# Retirement of SQL Server Big Data Clusters

All existing users of SQL Server 2019 with Software Assurance will be **fully supported on the platform for the next three years, through February 2025**.

- The **PolyBase scale-out groups** feature of Microsoft SQL Server has been retired. Scale-out group functionality will be removed from the product in SQL Server 2022. **PolyBase data virtualization** will continue to be fully supported as a scale-up feature in SQL Server.
- **Microsoft Azure Synapse** is an enterprise analytics service that accelerates time to insight across data warehouses and big data systems, using distributed processing and data constructs. Azure Synapse brings together SQL technologies used in enterprise data warehousing, Spark technologies used for big data, Pipelines for data integration and ETL/ELT, and deep integration with other Azure services such as Power BI, Cosmos DB, and Azure Machine Learning.

[The path forward for SQL Server analytics - Microsoft SQL Server Blog](#)

# Azure Hybrid

Innovation anywhere with Azure



Single control plane with Azure Arc



Bring Azure services to any infrastructure



Modernize datacenters with Azure Stack



Extend to the edge with Azure IoT

# Azure Arc enabled data offerings



SQL Server on  
Arc enabled servers

Organize, inventory  
Azure Defender for advanced security  
Free SQL Assessment service



GA July 2021



Azure Arc enabled data services

PaaS-like data services on any infra  
Supported on major K8s  
Cloud billing model for on-prem



SQL GA July 2021

# Azure Arc-enabled infrastructure

Bring on-premises and multi-cloud infrastructure to Azure with Azure Arc



## Azure Arc-enabled servers

Organize, inventory, and monitor  
Governance and Security  
Simplified role-based operations  
Physical, Virtual, Windows, Linux



AWS Linux 2

Now available



## SQL Server on Azure Arc-enabled servers

Organize, inventory, and monitor  
Governance and Security  
Use with your existing SQL servers  
SQL on Windows or Linux servers



Now available



## Azure Arc-enabled Kubernetes

Organize, inventory, and monitor  
Governance and Security  
Monitoring and Policy  
GitOps-based zero-touch deploy



AKS on Azure Stack HCI

Now available



# Azure Arc enabled data services

Cloud experience for data workloads anywhere

AVAILABLE NOW

Azure Arc enabled SQL Managed Instance

PUBLIC PREVIEW

Azure Arc enabled PostgreSQL Hyperscale

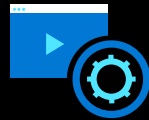


Support disconnected mode



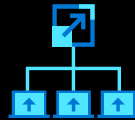
**Always current**

Automated updates  
Evergreen SQL



**As-a-Service**

Built in HA/DR  
Automation at scale



**Elastic scale**

Scale up, scale out  
Hyperscale Postgres



**Unified management**

Single pane of glass  
Consistent workflows



**Cloud Billing Model**

Per Core, Per Hour with  
AHB Benefits



Any hardware, any Kubernetes



# Azure Arc-enabled data services: management comparison

Built-in Capabilities	Deployment Model		
	Customer Infrastructure		Azure
	SQL Server / PostgreSQL	Azure Arc enabled-data services	Azure PaaS databases
Database security features	✓	✓	✓
Elastic / "Limitless" scalability	✗	✓ Limited by the capacity of customer infrastructure	✓
Automatic HA/DR	✗	✓ Customer responsible for underlying HW/K8s availability	✓
Auto upgrade, patching	✗	✓	✓
Auto backup-restore	✗	✓	✓
Monitoring	✗	✓	✓
Compliance certifications	✗ Customer responsible for compliance certification	✗ Customer responsible for compliance certification	✓ 90+ certifications
Data sovereignty	✓	✓	✓ Azure regions not available in all countries yet
Customer control	✓	✓	✓ Pre-defined HW options No control over HW/OS
Fully managed by Microsoft	✗ Customer-managed	✗ Customer-managed using software provided by Microsoft	✓
Guaranteed availability SLA	✗ Customer-managed	✗ Customer-managed using software provided by Microsoft	✓

# Azure Arc-enabled data services at a glance

## Apps and BI



Custom apps



BI



Analytics

## Azure Data Services



...

## Azure Arc data controller

Provisioning	Updates
HA/DR	Backup
Scaling	Diagnostics



Azure Security Center



Azure Monitor



Azure Backup

## Any Kubernetes



Kubernetes



OpenShift



AKS



EKS



GKE



VMware Tanzu

## Any hardware

OEM hardware

Azure Stack

Google Cloud Platform



Amazon EC2

# When to use **Azure Stack HCI**

Run virtual machines on-premises and easily connect to Azure hybrid services



**Modernize and  
secure  
your datacenter**



**Affordably  
modernize  
branch offices**



**Industry-best  
performance for  
SQL Server  
databases**



**Virtual desktops  
infrastructure  
with edge-local  
access**

# Plan for End of Support deadlines in 2022 and 2023

**July 9, 2022**

SQL Server 2008, 2008 R2  
Extended Security Updates end

**July 12, 2022**

SQL Server 2012 End of Support

**January 10, 2023**

Windows Server 2008 and  
2008 R2 Extended Security  
Updates end

**October 10, 2023**

Windows Server 2012 and  
2012 R2 End of Support

# Assess your options for 2012 workloads

## Move to Azure

### Move apps and workloads to Windows Server and SQL Server on Azure Virtual Machines

- Run securely with free Extended Security Updates for three more years after the deadline for Windows Server 2012 and 2012 R2 and SQL Server 2012 .
- Save with Azure Hybrid Benefit.

### Modernize when ready

- Modernize to PaaS with Azure services such as App Service, and Azure SQL Managed Instance. Never have to patch or upgrade again.

OR

## Upgrade on-premises

### Upgrade to latest version

- Windows Server 2019
- SQL Server 2019

### Can't meet the deadline? Protect server workloads

- **Buy** Extended Security Updates to get 3 more years of security updates for Windows Server 2012 and 2012 R2 and SQL Server 2012.

# Get started with SQL Server 2019

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

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

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

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

Modernize SQL Server: [check out the video](#)

Get the book: <https://aka.ms/sql2019book>

Azure Stack HCI Whitepaper:

[aka.ms/azurestackhcioverview](https://aka.ms/azurestackhcioverview)

# Get started with SQL Server 2022



Learn more about SQL Server 2022

[aka.ms/sqlserver2022](https://aka.ms/sqlserver2022)



Early Adoption Program and stay informed

[aka.ms/EAPSignup](https://aka.ms/EAPSignup)



technical deep-dive on SQL Server 2022

[aka.ms/sqlserver2022mechanics](https://aka.ms/sqlserver2022mechanics)



Register for the SQL Server 2022 Webinar

[aka.ms/sqlserver2022webinar](https://aka.ms/sqlserver2022webinar)



Don't miss us on Data Exposed

[aka.ms/dataexposed](https://aka.ms/dataexposed)

# Azure Arc-enabled Data Services: Customer Wins



[Deere & Company](#)

## Global Manufacturer (US)

- “Intelligent machinery” in factories
- Automation of IT tasks
- Migration of existing SQL Server

*We can't keep doing business the way we've always done it. Cloud-native patterns and practices help us deliver the factory solutions that are a key to our future success. That's what Azure Arc-enabled data services has enable for us.*

Jason Wallin  
Principal Architect



[Royal Bank of Canada](#)

## Regional Bank (Canada)

- Automation on regulated on-prem data
- DBaaS with built in HA
- Migration of existing SQL Server to Arc

*[Azure Arc-enabled SQL Managed Instance] With automation at-scale, self-service deployment in minutes, we can be more innovative and cost efficient, accelerating our time to market and focus our resources where they matter the most.*

Vinh Tran  
Head of Cloud Engineering



[SKF](#)

## Global Manufacturer (Sweden)

- “Cloud-orchestrated, locally executed”
- DBaaS with consistency to on-prem
- Adopting full hybrid stack from MSFT

*Azure hybrid cloud solutions enable us to maximize our efficiency, grow our digital platform for world-class manufacturing, and empower the SKF Factories of the Future to innovate towards data-driven manufacturing.*

Sven Vollbeh  
Head of Digital Manufacturing



[Koc / Opet](#)

## Regional Energy distributor (Turkey)

- Portable, scalable solution w/K8s
- Data sovereignty required by law
- Modernize apps with Arc SQL MI

*We can deploy Azure SQL Managed Instance in our own environment for next-gen mobile apps. This enabled us to not only meet the regulatory requirements on sensitive PII, but also operate and manage databases at scale just like in Azure.*

Basar Kavas  
Software Solutions Manager



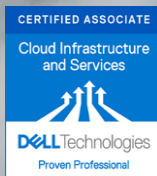
# Data a workload we cannot afford to lose !

## Ingram Micro

**Mark Mulvany** MCT Alumni, MCSE, MCTS Azure, CNA

EMEA HYBRID CLOUD LEAD, DCS

[Mark.mulvany@dell.com](mailto:Mark.mulvany@dell.com)



**DELL**Technologies



**Mark Mulvany** MCT Alumni, MCSE, MCTS

**EMEA Hybrid Cloud Lead**  
**Dell Technologies**



[delltechnologies.com/sql](https://delltechnologies.com/sql)



[mark.mulvany@dell.com](mailto:mark.mulvany@dell.com)



[/markmulvanymct](https://www.linkedin.com/in/markmulvanymct)



[@markmulvanymct](https://twitter.com/markmulvanymct)



[delltechnologies.com/cloud](https://delltechnologies.com/cloud)

## Key Focus & Competencies

Cloud Technologist & Discussion Leader / Subject Matter Expert

Azure Architect & AWS Practitioner / Apex SME

Dell Technologies Cloud Platform SME

VCF 4.0 & Tanzu Modern Application Portfolio

Hybrid Cloud Design & Workload placement specialist

## Experience 30+ Years

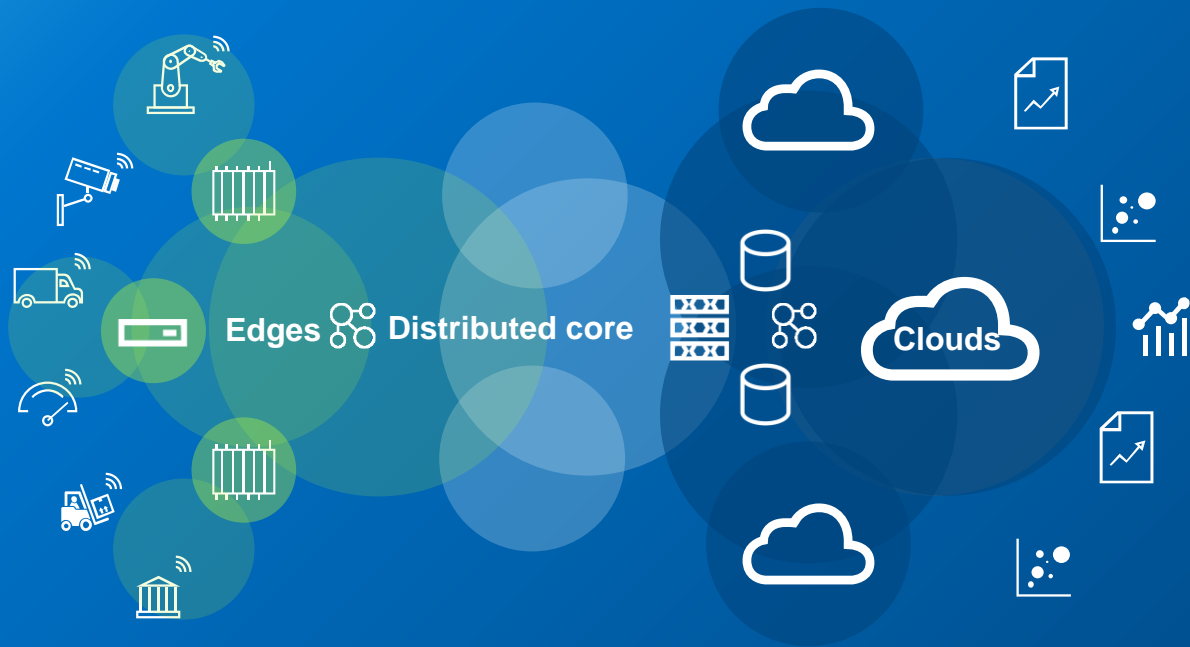
Customer facing with over 30 years industry experience including previously 14 years running own consulting business. Pre-Sales Consultant, Solution Architect, Engineer, Instructor and experienced international speaker areas of expertise include Cloud Computing, Repatriation of Workloads, Software

## Approach to Solutions

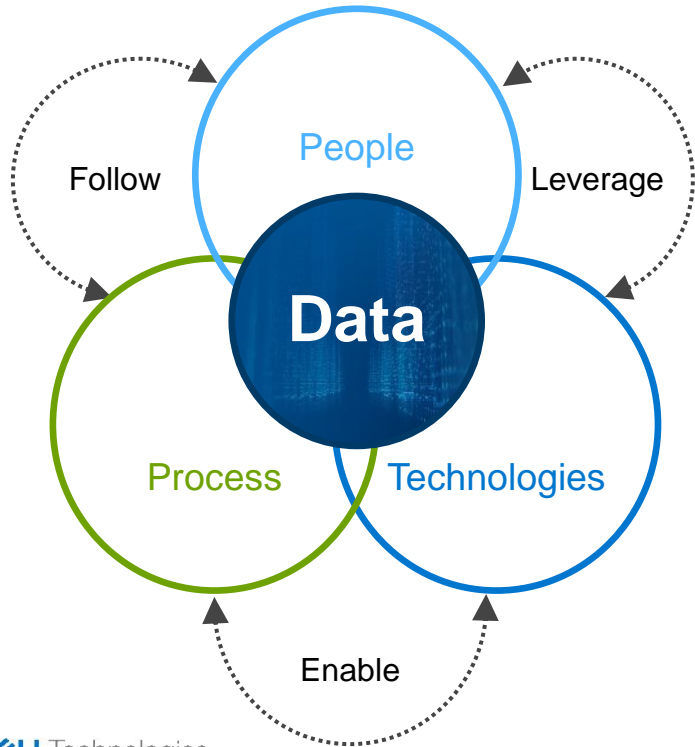
Understanding of the unique challenges of multiple verticals with a focus on first learning the client's perspective and requirements to formulate a solution that will uniquely fit their needs.



# This new era demands a data centric approach



# IT Reality: Data is at the core



## IT Goals:

- Enhance the way databases are repurposed and data is addressed
- Change processes to better leverage technology
- Employ new tools and processes when repurposing databases
- Review processes for production and non-production database isolation
- Utilize hybrid cloud to apply consumption models that best address business needs

# There are many paths towards modernizing the Data Estate

Consolidate & archive

Upgrade & re-platform

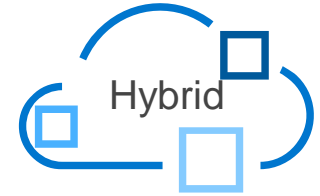
Migrate to on-premises cloud

Migrate to public cloud

Employ a hybrid cloud



Existing infrastructure

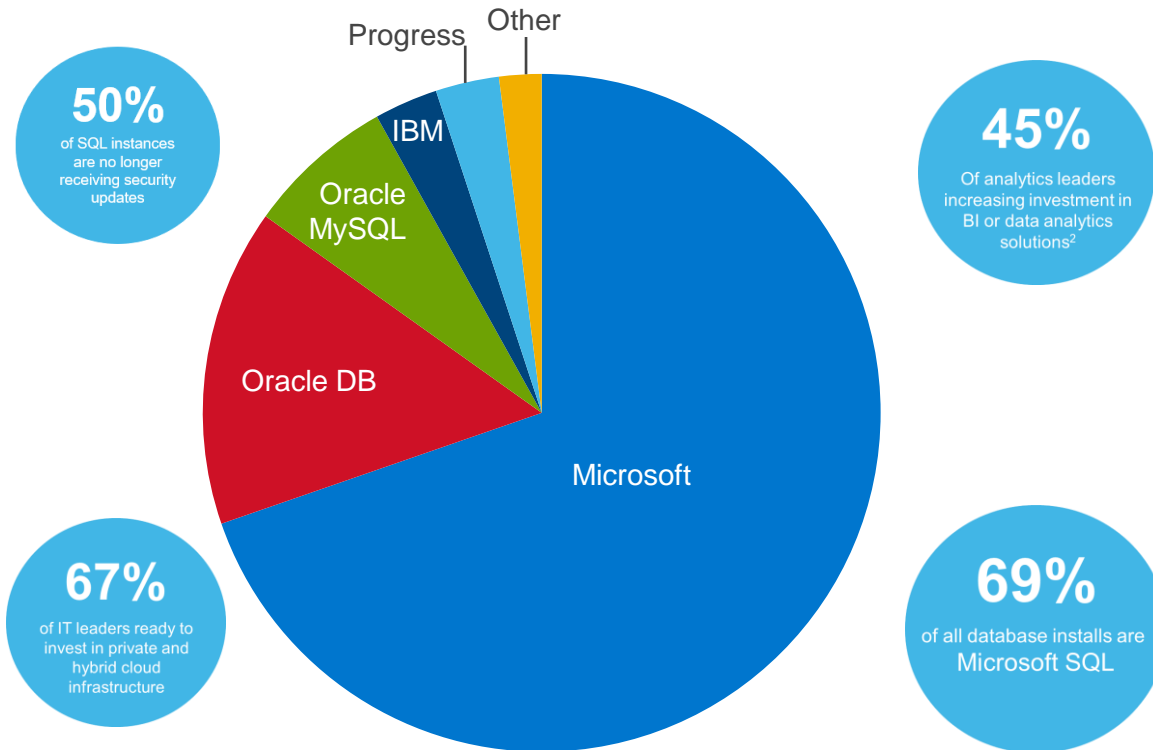


Data Virtualization



Containers

# Data a workload we cannot afford to lose !



Source : IDC Market Share 2018

Microsoft SQL the World's most widely used DBMS / Database !

Over 2/3 of all databases are powered by SQL Server

- 4x more instances than Oracle
- \$2B USD infrastructure market
- \$0.9B Server
- \$1.1B Storage

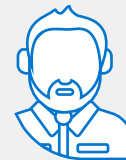
# Get to the DBA through the infrastructure team



Server / Storage  
Admin

## Shared challenges:

- Cost of data growth
- Multiple processes and infrastructure stacks to maintain



Database  
Administrator

## Questions to ask:

- Which version of SQL are you running?
- How many separate SQL instances do you manage?
- How many are managed outside your org?
- Have you virtualized SQL?
- How are you addressing security gaps?

## Questions to ask:

- Have you enabled self-service for BI and/or App Dev teams?
- Are you using Azure public?
  - Yes? – Are you considering Azure stack?
- How long does it take you to move project from dev into production
- Are you using SQL to power your custom applications?

# Microsoft SQL & Windows Server 2012 End-Of-Life Support imminent !

Microsoft SQL is the most common application running in on-prem virtual environments.



## No security updates

New vectors in breaching databases will not be fixed. Exposure is related to the number of EOL databases.



## No database fixes

Work arounds to fix database issues and bugs & enhancements. Operationally expensive and impractical.

**July 12<sup>th</sup> 2022** End of all support SQL Server 2012

**January 4<sup>th</sup> 2020** End of all support SQL Server 2008 R2

**July 9<sup>th</sup> 2019** End of all support SQL Server 2008

~ **50%**  
Of SQL running today is  
2008 / 2012  
\*estimated



### Avoid business disruptions

Security updates rated "critical" to protect against vulnerabilities. Microsoft recommends you apply these immediately.



**4.2 Billion**

Records stolen by hackers in 2016



**20%**

Of organizations lose customers during an attack; 30% lose revenue



**\$8 Trillion**

Expected cost of cybercrime to the global economy by 2022

Sources: Risk Based Security Report 2017, Cisco 2017 Annual Cybersecurity Report, Juniper Research Cybercrime & The Impact of Threats 2017, Microsoft, Table of Contents, © Copyright 2018 McAfee, SQL Server, DELL Technologies



# “Why Not Just Put the Whole Thing in Public Cloud?”

Selling the hybrid approach



And that does not even begin to consider

- Data gravity
- Data velocity
- Data control
- Compliance and security

*“Keep your data on-prem in a software-defined cluster and make it available to cloud-based applications and analytics”*

# Nothing standard about Microsoft SQL Server Standard



Functionality



Storage capacity



Cost

# Storage capacity

524 PB



Vs.

524 PB



SQL Server Enterprise Edition

SQL Server Standard Edition

# SQL Standard vs Enterprise

		Standard	Enterprise
Compute and storage	Maximum number of cores	24	OS Max
	Maximum memory utilized per instance	128 GB	OS Max
	Maximum size	524 PB	524 PB
Intelligence over all your data	SQL Server 2019 Big Data Clusters with Apache Spark and HDFS built into SQL Server engine	×	×
	Data virtualization using PolyBase (including additional data sources like Oracle, Teradata, MongoDB, and other SQL Server databases)	×	×
	Unified AI platform to train and operationalize models with SQL Server ML Services	×	×
Choice of language and platform	Compatibility certification	×	×
	UTF-8 support	×	×
	Support for SQL Server Java extension	×	×
Industry-leading performance and availability	Free DR replicas in Azure and on-premises	×	×
	Intelligent Query processing : Scalar UDF inlining, table variable deferred compilation, approximate count distinct	×	×
	Intelligent Query processing features: row mode memory grant feedback , batch mode for row store and automatic tuning		×
	Automatic read-write connection re-routing		×
	In-Memory Database: memory-optimized tempdb		×
	In-Memory Database: Persistent Memory support	×	×
Secure and reliable	Accelerated Database recovery	×	×
	Always Encrypted with secure enclaves	×	×
	Transparent database encryption	×	×
	Data classification and auditing	×	×
Quick business insights	Vulnerability assessment	×	×
	Azure Data Studio to manage SQL Server including support for T-SQL using Notebooks	×	×
	SQL Server Analysis Services Direct Query	×	×

Small difference in terms of functionality

# Four options to manage end of support

## 1. Do nothing – Really Bad Idea

- ✓ Risky roll of the dice, especially when coupled with aging infrastructure
- ✓ Run the risk of a security exploit, regulatory requirement (GDPR) or non-compliance

## 2. Transform with Azure/ Azure Stack

- ✓ Migrate IaaS applications and databases to Azure/Azure Stack VM's
- ✓ Get 3 years of extended security updates for SQL Server and Windows Server 2012 at no additional charge

## 3. Move and Modernize - Recommended

- ✓ Migrate data to a modern Dell EMC Platform
- ✓ Upgrade on-prem and leverage Modern San or HCI
- ✓ **Windows Server 2019 or 2022**
- ✓ SQL Server 2019 migrate

## 4. Purchase Extended Support

- ✓ Purchase extended security updates to get 3 more years
- ✓ Upgrade when ready (within 3 years)
- ✓ **Excessive cost – To kick the can down the road**

## Power 3



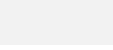
PowerStore



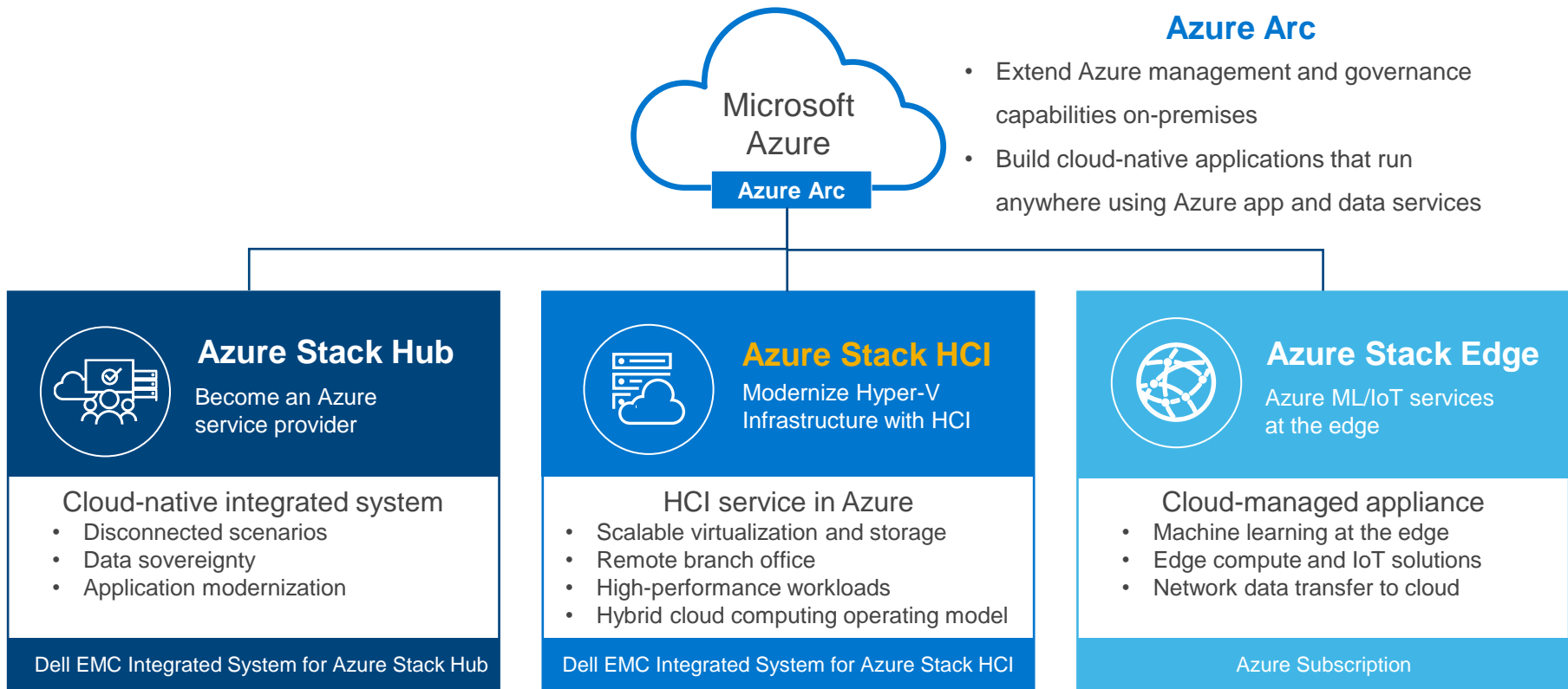
PowerEdge



PowerSwitch



# Hybrid Infrastructure with Microsoft Azure



# Dell Integrated System for Microsoft Azure Stack HCI



**Full stack  
lifecycle  
management**

Reduce time to  
complete complex  
tasks



**Flexible  
configuration  
options**

Meet requirements  
of a broad set of  
use cases



**Global solution  
level support &  
services**

Accelerate time to  
value



**Pay as you use  
consumption  
options**

Pay for what you use,  
when you use it



**All-in-one, validated HCI system**

# Azure Arc & Azure Managed SQL


## Bring Azure services and management and any Dell Technologies infrastructure

### Azure Arc enabled data services


Bring Azure data services to on-premises, multi-cloud, and edge

Azure SQL Managed Instance | Azure Database for PostgreSQL Hyperscale


**Disconnected support**  
Cloud benefits for both disconnected and connected workloads



**Always current**  
Automated updates  
Evergreen SQL  
Hyperscale on-premises

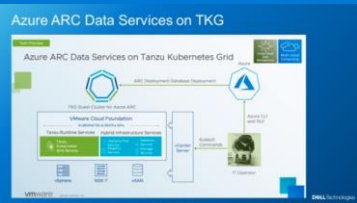


**Elastic scale**  
Deploy in seconds  
Scale up, scale out  
Automation at scale

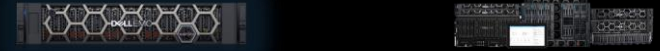


**Unified management**  
Single view for on-prem and clouds  
Consistent workflows

Any hardware, any Kubernetes



Power 3



## Run Azure SQL data services anywhere

Deploy and manage data services where you need it.

Stay always current with evergreen SQL and seamlessly manage and secure your data assets

Across on-premises, clouds, and edge.



### Azure Arc-enabled data services

**Always current**  
Automated updates  
Evergreen SQL  
Hyperscale on-premises

**Elastic scale**  
Deploy in seconds  
Scale up, scale out  
Automation at scale

**Unified management**  
Single view for on-prem and clouds  
Consistent workflows

### Dell Technologies validated infrastructure powered by Intel Technologies

- Dell EMC PowerFlex
- Dell EMC PowerStore
- Dell EMC PowerMax
- Dell EMC VxRail
- Dell EMC Integrated System for Microsoft Azure Stack HCI
- Dell Technologies APEX Data Storage Services

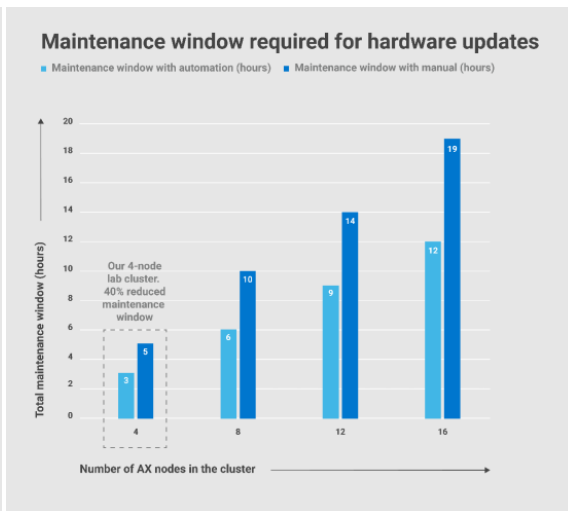
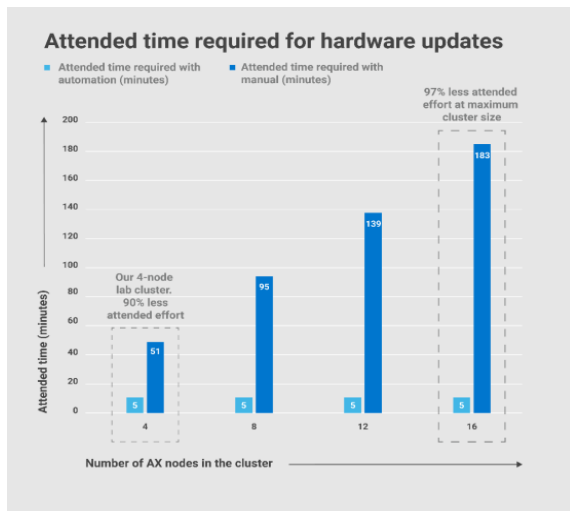


# AX nodes simplify Life Cycle Management of Azure Stack HCI

## Qualifies for the Azure 3 years extended support

97% Less attended time required for infrastructure updates<sup>1</sup>

40% Reduced maintenance window for a 4 node cluster<sup>1</sup>



*“Now my Saturday maintenance takes just 30 minutes, given all the automation and visibility that I can utilize from the OpenManage integration with Windows Admin Center, so I have more time with my family.”*



**Greg Altman, IT Infrastructure Manager, Swift-Train Company**

*“The simplification of life cycle management for AX nodes from Dell EMC Azure Stack HCI solutions is a game changer. This takes away all the hard work through a tested and validated catalog, reducing the time to complete from a few days to hours.”*

**Acuutech<sup>®</sup>**

**Terry Storey,  
Chief Cloud Officer, Acuutech**

<sup>1</sup> Based on Dell EMC internal testing <https://infohub.delltechnologies.com/t/dell-emc-solutions-for-microsoft-azure-stack-hci-life-cycle-management-approach-comparison-1/>

# SQL Serve and Virtual Machines

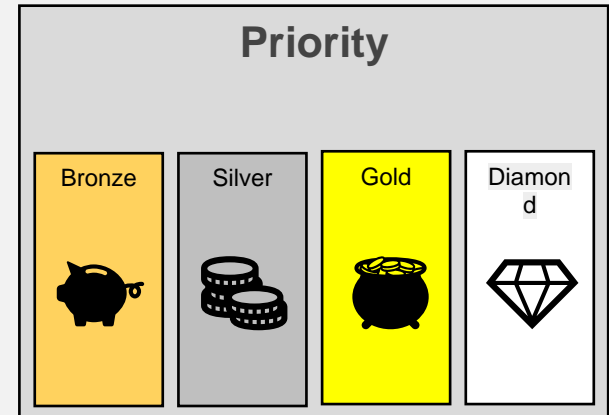
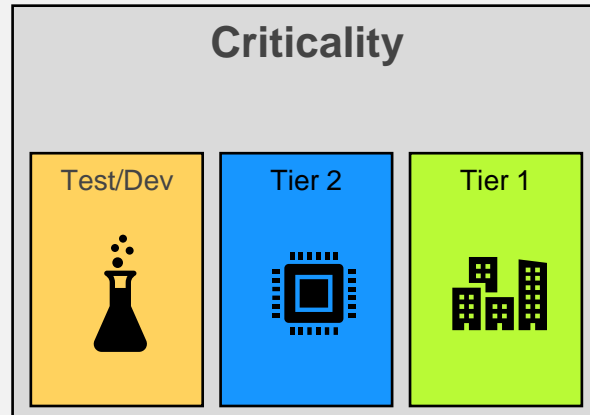
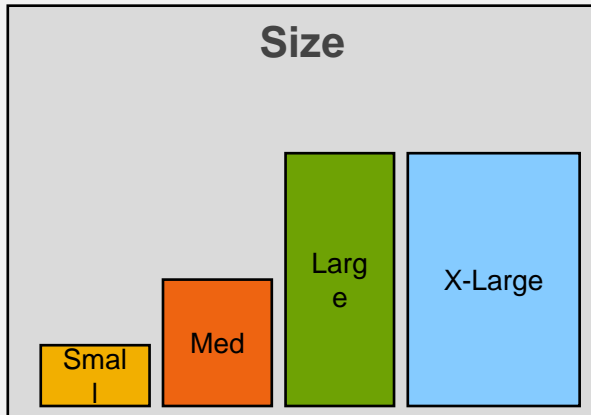
- Size and Importance of SQL Server VMs



SQL Server deployments come in a variety:

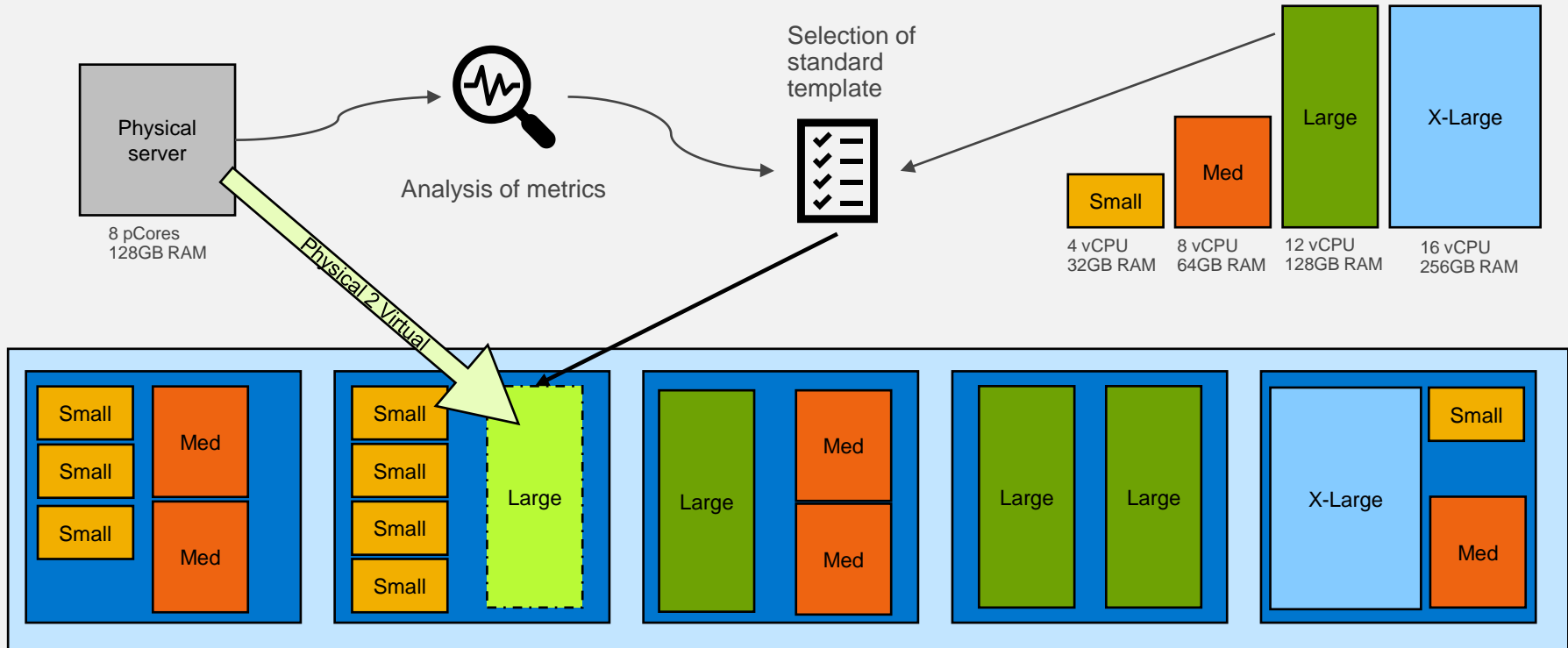
Sizes, Performance, Availability requirements, and Criticality.

In order to easily manage a consolidated shared environment, it is best practices to create **standardized VM templates “T-shirt sizes”**.



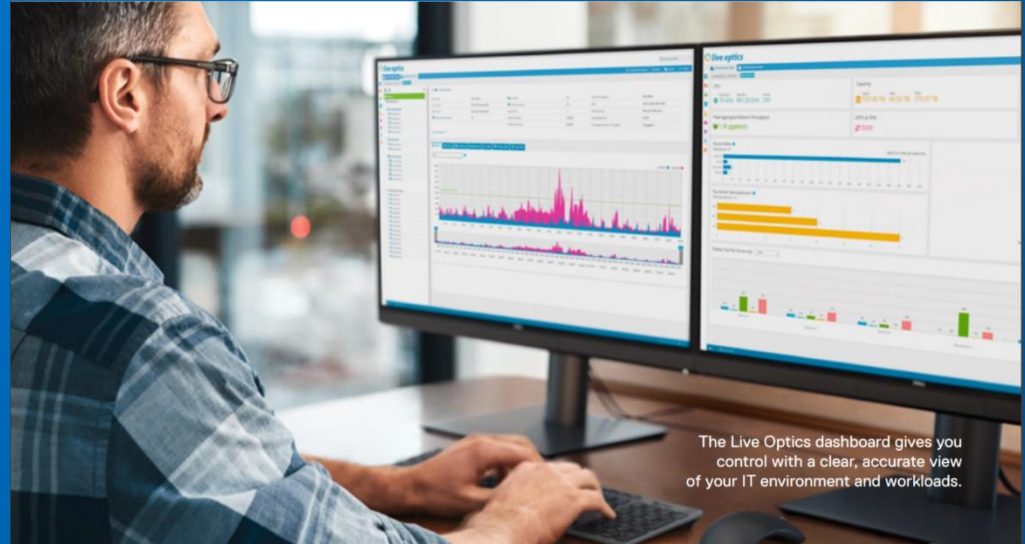
# SQL Server and Virtual Machines

- Size and Importance of SQL Server VMs (cont'd)







# Live optics – takes the guesswork out of modernization

- Live inventory:
  - Hardware
  - Software
- Identify performance bottlenecks
- Characterise storage growth
- Scenario planning



# Power Up Examples : SQL Server Projects

SQL	Servers	Networking	Storage
	 PowerEdge	 PowerSwitch	 PowerStore

- Migration
- SQL 2012 & older
- Consolidate / Modernize

PowerEdge R640

S5248-ON 25GbE

PowerStore 500T

- App Automation
- Containerization
- DBaaS

PowerEdge R750

S5248-ON 25GbE

PowerStore 1000T

# Have the SQL Data conversation today !

75% of all databases on the planet are Microsoft SQL.  
50% of them are out of service life this poses significant risk for our customers

SQL 2019 brings vast new capabilities including the ability to deliver Big Data Clusters and increased demand for supporting infrastructure like Powerstore

Dell EMC delivers modern SQL infrastructure to enable agile SQL operations and more intelligent SQL outcomes check out

**Only Dell Technologies and Ingram Micro can provide an end-to end certified edge –to-core-to cloud strategy to meet the challenges of an intelligent enterprise**

[Did you know we have a customer facing website detailing our Dell Technologies solutions for Microsoft SQL Server](#)

# Call to Action & Resources

Markus Wolfram

Dell Technologies | System Engineer Distribution

Nikola Grujicic

Ingram Micro | Presales System Engineer



# Call to Action



- 1. Familiarize yourself with SQL Server and Dell EMC resources** (next slide)
- 2. Pass MS SQL Curriculum to earn Solution Competency** (next slide)
- 3. Reach out to your accounts and qualify their current SQL Server landscape**
  - For SQL Server instances prior release 2012\*, assess plan for migration to SQL Server 2019
  - For SQL Server instances past release 2012\*, assess plan to leverage advanced data analytics

\* Support for SQL Server 2012 ends on July 12, 2022
- 4. Register your deal with “SQL Server” or just “SQL” in the opportunity name** (next slide)
- 5. Special SQL Server sizing webinar to be announced soon! Please make sure to join!**
- 6. You are not alone! Ask for Support!**
  - For Dell Technologies, reach out to [Markus.Wolfram@dell.com](mailto:Markus.Wolfram@dell.com)
  - For Microsoft, reach out to [horst.urlberger@microsoft.com](mailto:horst.urlberger@microsoft.com)
  - For Ingram Micro, reach out to [nikola.grujicic@ingrammicro.com](mailto:nikola.grujicic@ingrammicro.com)



# Microsoft SQL Server - Resources for Channel Partners

## Solution Briefs and White Papers

### PowerEdge

- [Unlock insights with PowerEdge and SQL Server 2019](#)
- [Dell EMC Servers Offer Significantly Better Performance for Microsoft SQL Server](#)
- [SQL Server Best Practices for Intel and AMD](#)
- [Newer Dell EMC PowerEdge Servers Significantly Increase Microsoft SQL Server Performance](#)

### PowerStore

- [PowerStore for SQL Server: Top 10 Reasons](#)
- [PowerStore for SQL Server: Solution Brief](#)
- [PowerStore SQL Server: Best Practices](#)

### PowerFlex

- [SQL Server 2019 on PowerFlex – Reference Architecture](#)
- [SQL 2019 Server on Red Hat Linux with PowerFlex – Reference Architecture](#)
- [SQL Server 2019 Big Data Cluster on PowerFlex](#)
- [SQL Server 2019 Big Data Cluster deployed on OpenShift with PowerFlex](#)
- [SQL Server 2019 on Hyper-V with PowerFlex](#)
- [SQL Server Disaster Recovery Solution on Dell EMC PowerFlex](#)
- [Microsoft Azure Arc on Dell EMC PowerFlex](#)

### Azure Stack HCI

- [Tech Book - Dell EMC Integrated System For Microsoft Azure Stack HCI](#)
- [Building a Hybrid Database-as-a-Service Platform with Azure Stack HCI](#)
- [Enabling DBaaS with Dell EMC Integrated System for Microsoft Azure Stack HCI](#)

### Others: PowerVault – Unity – PowerMax – VxRail - VMware Tanzu Kubernetes – VMware vSAN

- [Dell EMC PowerVault ME5 Series: Microsoft SQL Server Best Practices](#)
- [Dell EMC Unity XT: Microsoft SQL Server 2019 Big Data Clusters with Dell EMC Unity XT storage](#)
- [SQL Server Best Practices for AMD-based PowerEdge and PowerMax systems](#)
- [SQL Server Best Practices for Intel-based PowerEdge and PowerMax systems](#)
- [Microsoft SQL Server 2019 Big Data Cluster on Dell EMC VxRail](#)
- [Running Microsoft SQL Server Big Data Clusters on VMware Tanzu Kubernetes Grid](#)
- [Deliver Business Insights Faster with Microsoft SQL Server 2019 and VMware vSAN](#)

## Public websites

- [Dell Technologies Microsoft website](#)
- [Dell Technologies SQL Server website](#)
- [Dell Technologies SQL Server InfoHub](#)
- [Microsoft OEM Software from Dell Technologies](#)

## Infographic

- [Accelerate your Microsoft SQL Server journey](#)

## 15-Minute Guide

- [Accelerate the journey to powerful data insights with solutions for Microsoft's data platform](#)

## Case Studies

- Realpage: [Savings in SQL Server licensing fees by using the right PowerEdge servers](#)
- New Belgium: [Brewing: SQL Server runs at optimal performance thanks to VxRail - Video](#)
- Clark County: [Video](#)

## Partner Portal training & resources

- Search « SQL » on
  - [Partner Portal - On Demand Training](#)
  - [My Learning SABA](#)
  - [Partner Portal - Resources](#)
- Earn Credits for Solution Competency:
  - [MS SQL Workload Curriculum 2021](#)



# Earn Credits and learn how to sell into SQL Server

DELL Technologies Partner Academy

EDUCATION Training Certification Support Community

Thinking beyond SQL or MSSQL

Education Services Home - Partner Academy

**PARTNER ACADEMY**

Where transformation begins!

Select Partner Type: Solution Provider

Select Role: System Engineer - Technical

Confirm Role

YOU HAVE SELECTED: SOLUTION PROVIDER > SYSTEM ENGINEER - TECHNICAL. If this is not correct, please adjust your selections and re-submit.

HOW CAN WE HELP?

**EARN CREDENTIALS**

ON-DEMAND TRAINING

PRODUCT LAUNCH TRAINING

CERTIFICATION

DELL Technologies

EDUCATION Training Certification Support Community

Thinking beyond SQL or MSSQL

Education Services Home - Partner Academy - Earn Your Credential

**DELL TECHNOLOGIES CREDENTIALS**

Credentials are individually awarded recognition for having completed a series of web-based exams aligned to Dell Technologies training for Sales and System Engineers. These credentials can help your company achieve competencies in the Dell Partner Program.

## What are the 3 C's?

Individuals	Companies
<p><b>Credentials</b> - Earned by individual learners who successfully complete a set of required courses within a Learning Path along with any associated prerequisites. Credentials are tracked by the student within their individual CertTracker account.</p> <p><b>Certifications</b> - Earned by an individual who successfully passes proctored high stakes exam(s) administered through Pearson VUE. An individual can track and manage their earned certifications within their individual CertTracker account.</p>	<p><b>Competencies</b> - Earned at a company level for having a defined number of individual credentials and/or certifications within a particular area of focus.</p>

Infrastructure Solutions Group (ISG)

Client Solutions Group (CSG)

Solutions

**Dell Technologies Data Centric Workloads - MS SQL**

Modern workloads are driving business success. But these typically data-intensive applications are also putting a strain on traditional IT infrastructures. The intelligent enterprise is data-driven and responsive. Running on optimized infrastructure, mission-critical applications will be working together with analytics and AI, to provide actionable insights more quickly and cost-effectively. Dell Technologies is an experienced leader in delivering solutions for SQL and AI – bringing practical and proven experience, worldclass services, and industry-leading solutions to the world of IT.

**Sales:**

Please complete the learning path below:

[SALES: DELL TECHNOLOGIES DATA CENTRIC WORKLOAD SOLUTIONS CURRICULUM 2021](#) > Est Time: 8 hrs 22 mins

Leverage this learning path to understand how Dell Technologies Data Centric Workload Solutions can help your customers optimize their IT infrastructure and leverage their modern applications to deliver new services and capabilities more quickly.

After completing all the courses within this learning path, you will earn your Sales: Dell Technologies Data Centric Workload Solutions Credential 2021.

**SE:**

[SE: DATA CENTRIC WORKLOADS - MS SQL CURRICULUM 2021](#) > Est Time: 6 hrs 45 mins

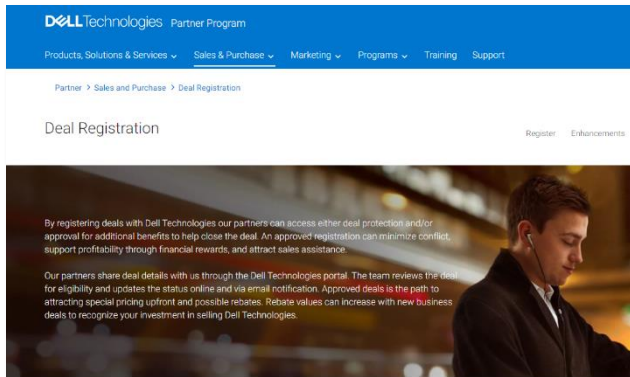
Leverage this learning path to understand how Dell Technologies Data Centric Workload Microsoft SQL Solutions can help your customers optimize their IT infrastructure and leverage their modern applications to deliver new services and capabilities more quickly.

After completing all the courses within this learning path, you will earn your SE: Data Centric Workloads - SQL Credential 2021.

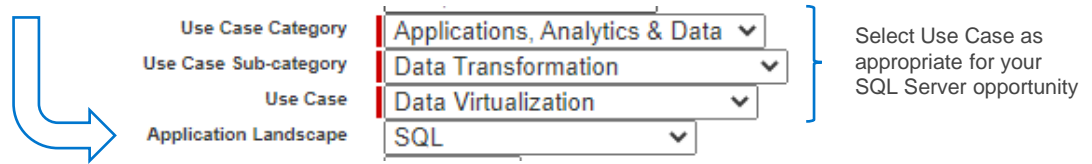
Register: [MS SQL Workload Curriculum 2021](#)

# How to register a deal for a SQL Server opportunity

In order to track your SQL Server related opportunities and to provide you additional benefits to help you close a deal once approved, add **“SQL Server”** or just **“SQL”** to the **Opportunity Name** when registering a new SQL Server related deal on the [Dell Technologies Deal Registration Portal](#).



In addition, choose **“SQL”** as **Application Landscape** after selecting the Use Case categories. This optional field will further ensure that your opportunity is captured as SQL Server.



## Best Practices of SQL Server Deal Registrations:

Channel Partner: Cancom Gmbh

Opportunity Name: “Account Name” - Optimierung **SQL Server**

Channel Partner: Bechtle AG

Opportunity Name: “Account Name” - Hardware für **SQL Server**

Channel Partner: ARKTIS IT solutions GmbH

Opportunity Name: “Account Name” - Server MS **SQL & File**



# QUIZ

## Questions & Answers

**Martina Kern**

Ingram Micro, Sr. Business Development Manager Dell Technologies