



AZURE DAY



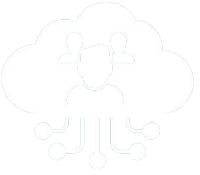
# Azure ARC: Gli Animali Fantastici dell'hybrid cloud

Marco Dal Pino



# Azure ARC: Gli Animali Fantastici dell'hybrid cloud

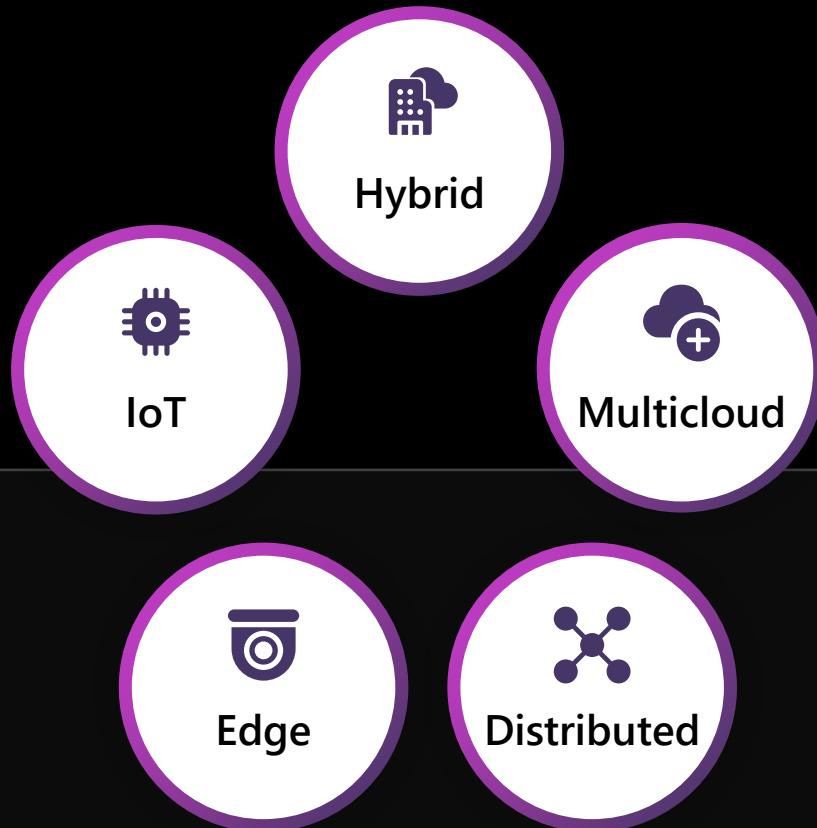
Marco Dal Pino



AZURE DAY

# Thanks to



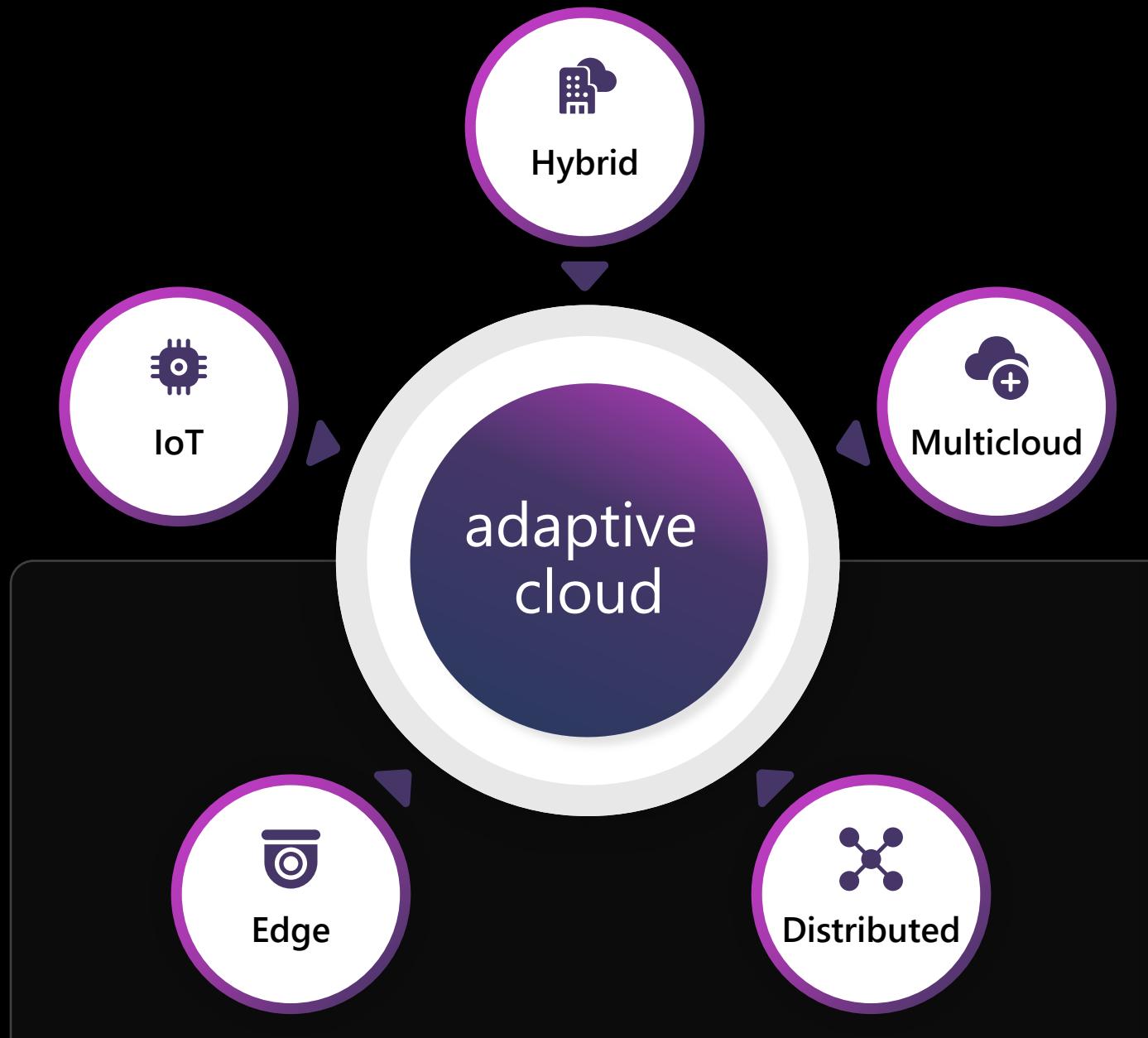


## Common customer challenges

Sprawling systems

Information and process silos

Increased technical debt



## Advancing hybrid cloud to adaptive cloud

Thrive in dynamic environments by unifying teams, sites, and systems across hybrid, multicloud, edge, and IoT.

# Adaptive Cloud

● Operate with AI-enhanced central management

*Microsoft Copilot for Azure*



Azure Monitor



Microsoft Defender for Cloud



● Rapidly develop and scale applications across boundaries

Visual Studio



GitHub



Azure Kubernetes Service



● Cultivate data and insights across physical operations

*IoT Operations*



Microsoft Fabric



Machine Learning



Microsoft Azure

Windows Server SQL



SUSE Red Hat

vmware®

Google Cloud

aws ORACLE

Enabled by Azure Arc

# Customer aspirations

-  • Deliver products as a service
-  • Transform data into new products
-  • Accelerate application development
-  • Secure and govern distributed digital estate
-  • Modernize facilities and assets
-  • Manage multicloud, datacenter and edge modalities in a single control plane

# Azure meets you where you are in your cloud journey



## Migrate apps, data, and infra

Easily migrate to IaaS or flexible PaaS services for industry-leading performance, availability, and reliability



## Migrate VMware as is

Azure VMware Solution allows you to use VMware technology stack and team expertise in Azure



## Extend to hybrid and multi-cloud

Extend Azure security, operations, and management across your entire environment and unify in a single pane-of-glass

# A Leader in 2023 Gartner® Magic Quadrant™

Microsoft placed furthest on the  
Completeness of Vision axis

# Gartner®

2023 Gartner® Magic Quadrant™ for  
Strategic Cloud Platform Services (SCPS)

Gartner, Magic Quadrant for Strategic Cloud Platform Services, David Wright, Dennis Smith, and 4 more,  
4 December 2023.

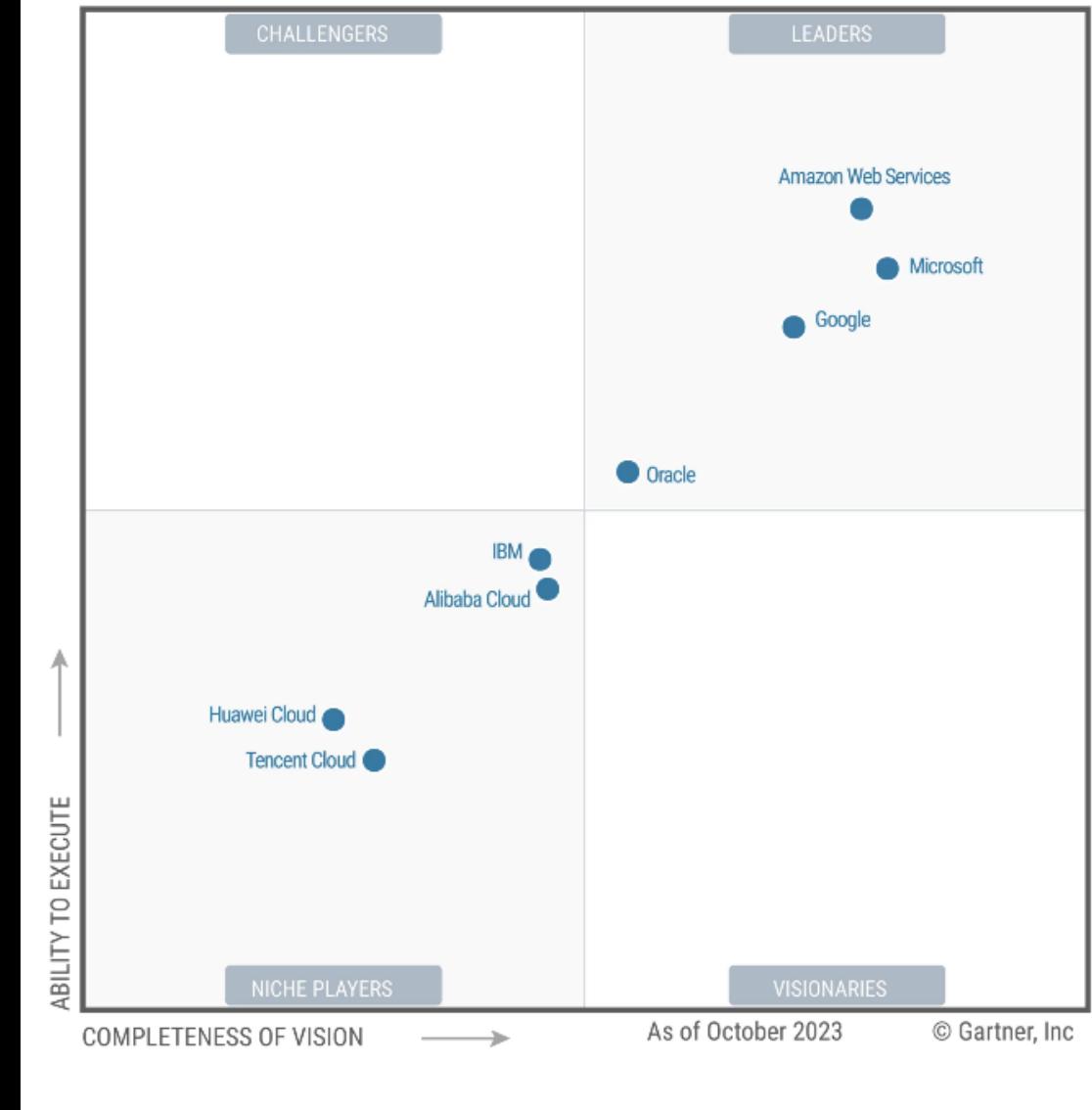
The report was previously known as Magic Quadrant for Cloud Infrastructure and Platform Services (2020–2022)  
and Magic Quadrant for Cloud Infrastructure as a Service till 2019.

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Figure 1: Magic Quadrant for Strategic Cloud Platform Services



# Microsoft Azure



## Single control plane with Azure Arc

### Infrastructure

Connect and operate hybrid resources as native Azure resources

Azure Arc-enabled infrastructure

### Services

Deploy and run Azure services outside of Azure while still operating it from Azure

Azure Arc-enabled services



Arc Server



K8s



Windows



SQL Server



SQL DB



PostGreSQL



Web Apps



Functions



Logic Apps



Machine Learning



Multi-cloud

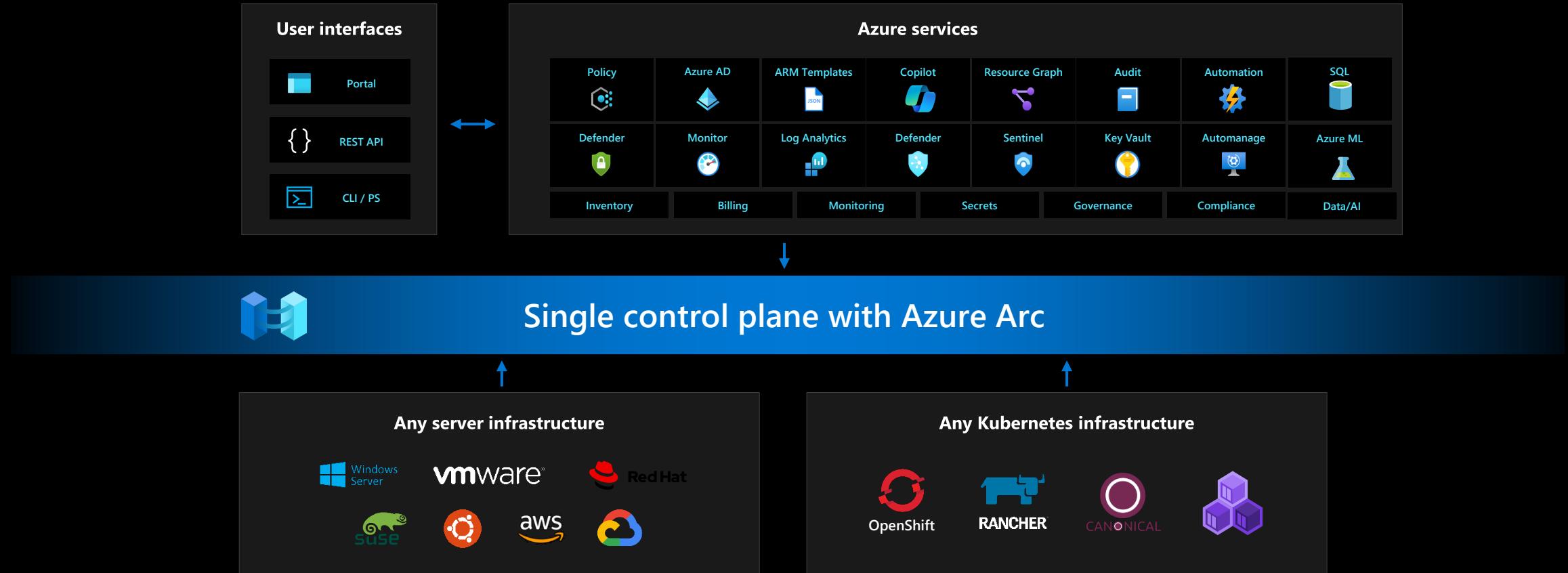


Datacenter



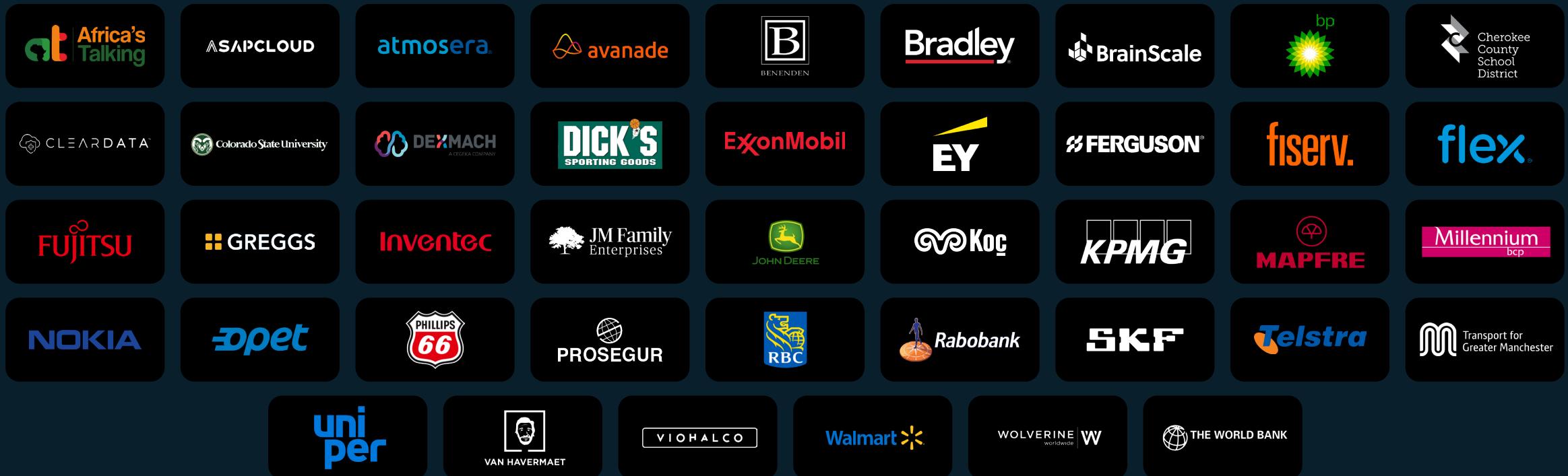
Edge

# Azure Arc: extending Azure management & security to any infrastructure



Manage your private, public and edge environment in a consistent way

# Azure Arc customers



"With Azure Arc, we can manage a multitude of edge devices and containerized workloads for our customers on-premises and offer this service to them at a reasonable cost."

Frank Konopka, Senior Advisor

SIEMENS HEALTHINEERS

"Our unified store strategy is all about rapid innovation. It lets us respond to market shifts and customer feedback in minutes, ensuring our stores are always current."

Jon Hathaway, Sr Director of Platform and Infra

DICKS SPORTING GOODS

# Innovate anywhere with Azure



Azure Arc



Secure and govern your infrastructure and apps



Build apps once, deploy and manage them anywhere



Run Azure data, app, and AI/ML services from cloud to edge

# Innovate anywhere with Azure



Azure Arc



Secure and govern your infrastructure and apps



Build apps once, deploy and manage them anywhere



Run Azure data, app, and AI/ML services from cloud to edge

# Secure and govern across environments

## Customer needed

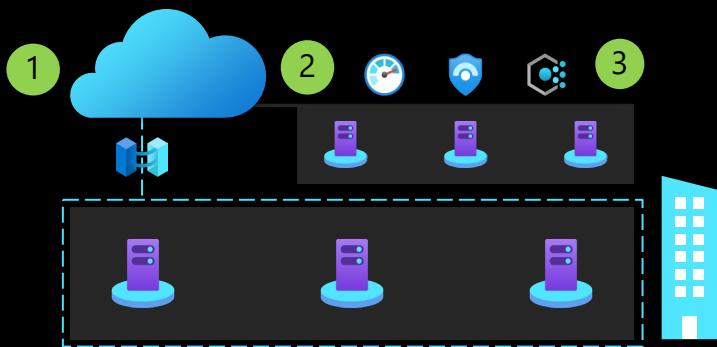
Simplified operations & management across thousands of remote sites with heterogenous assets

To leverage cloud-based threat detection, response, and analytics

To catalog and govern IT inventory with policy and role-based access control

Business continuity with observability across the stack and automated recovery from failures

## How



- ① Migrate WS/SQL/Linux to Azure regions
- ② Arc-enable remaining WS/SQL/Linux in Datacenters and at the edge
- ③ Integrate operations, management, and security across all environments

## Microsoft Offerings

Enabled by Azure Arc

- Azure Resource Manager
- Microsoft Defender for Cloud
- Microsoft Sentinel
- Azure Policy
- Azure Monitor
- Microsoft Purview
- Azure Automanage
- Azure Update Manager
- Microsoft Copilot in Azure

# Azure Arc-enabled servers

Bring Azure capabilities to your on-premises and multicloud servers with Azure Arc



## Reach

Windows and Linux  
VM and bare metal  
At scale searchable inventory



## Configure

Consistent VM extensions  
Centralized agent management—  
monitoring, security,  
update management



## Govern

Built-in Azure policies  
Compliance across environments  
Audit and enforce OS settings



## Secure

Entra ID Managed Identity  
Server security baselines  
Role-Based Access control



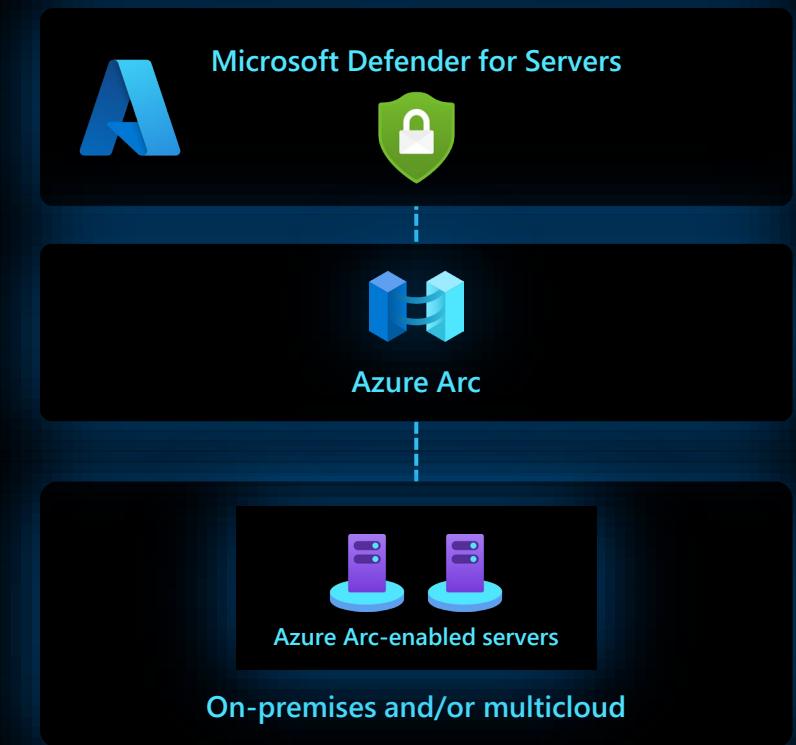
Any infrastructure, familiar tools



# Deploy defender for servers anywhere

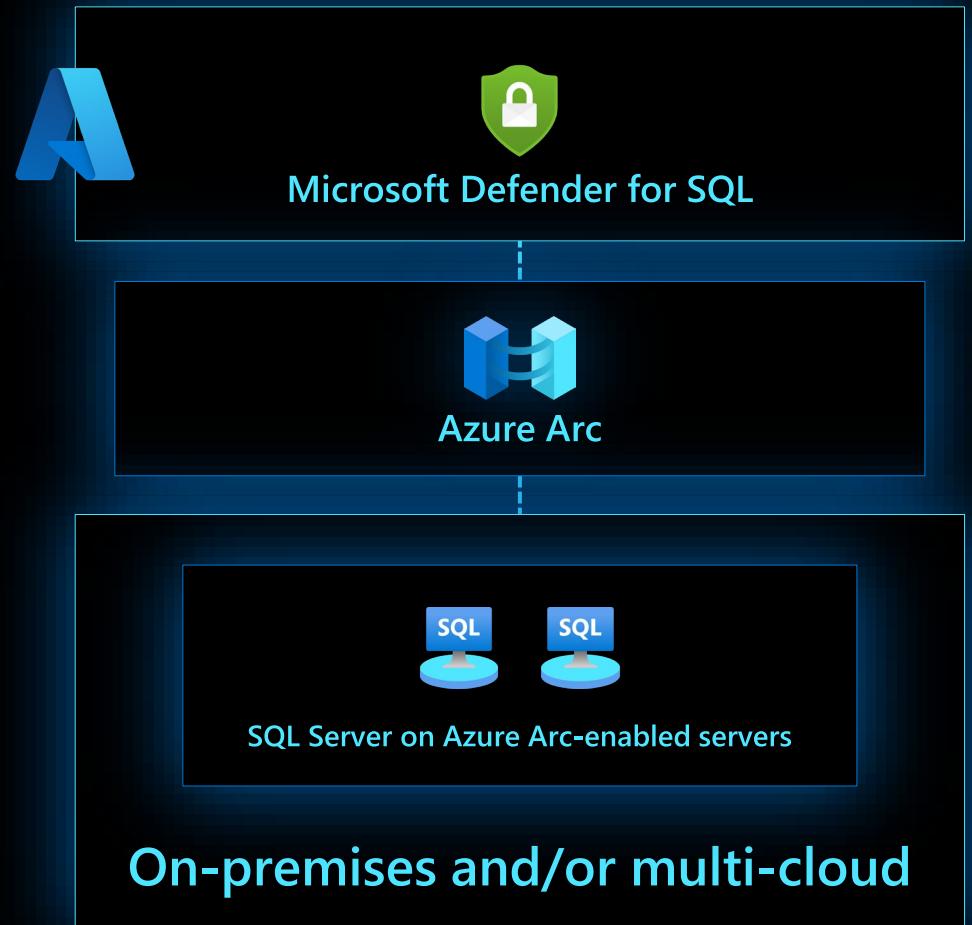
Secure hybrid and multicloud environments

- Reduce risk with contextual security posture management
- Get compliance benchmarks mapped to industry standards
- Vulnerability assessment built-in with flexibility to use tools, like Qualys, offering integrated vulnerability scanning for your connected machines
- Use Just-in-Time VM access to control access to commonly attacked management ports
- Block malware with adaptive application controls
- Set guardrails with Azure Policy integration, server owners can view and remediate to meet their compliance



# Deploy Defender for databases (SQL) anywhere

- Monitor and remediate potential vulnerabilities for SQL Servers in Azure, on-premises or in other clouds
- Discover, track, and remediate potential database vulnerabilities with assessment scans.
- Monitor for threats such as SQL injection, brute-force attacks, and privilege abuse with advanced threat protections



# Azure Monitor anywhere enabled by Azure Arc

## Consistent monitoring across your hybrid and multi-cloud compute

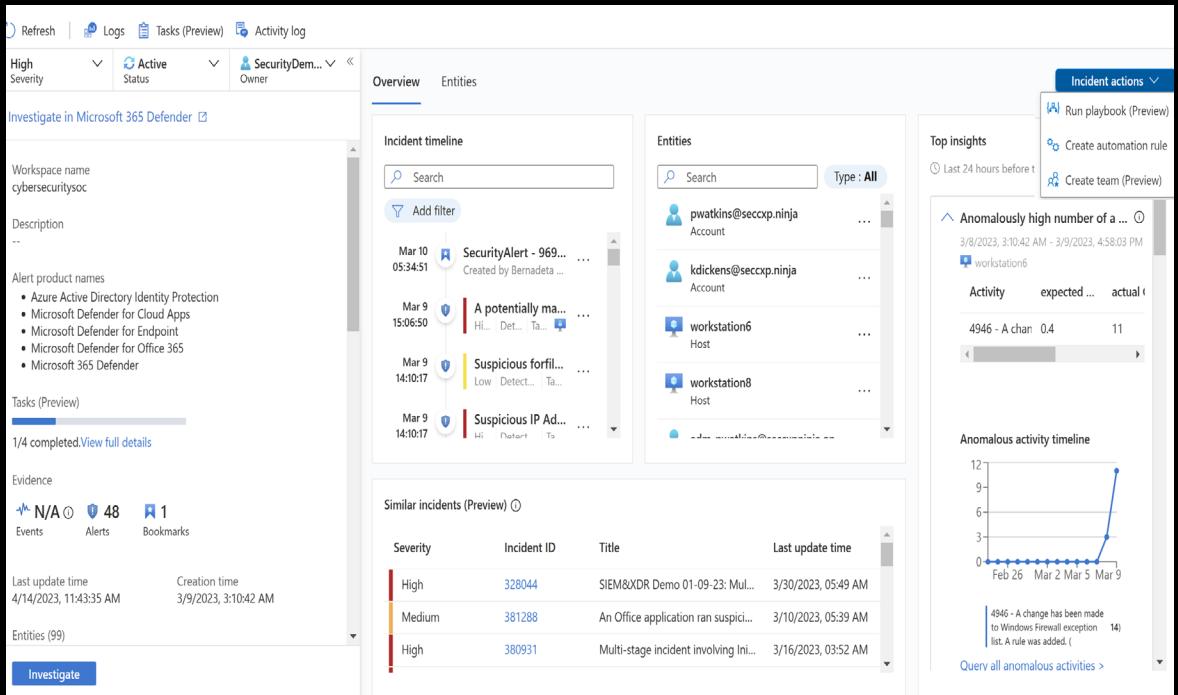
- Detect and diagnose issues across **apps and dependencies** with application insights
- Correlate issues at **infra level** with insights for VMs, containers, network, etc.
- Operationalize at scale with smart **alerts** and automated **actions**
- Drill down with **Log Analytics** for troubleshooting & deeper diagnostics
- Create **visualizations** with Azure dashboards, workbooks, and Grafana



# Microsoft Sentinel, powered by AI, enabled by Azure Arc

Stay ahead of evolving attacks with a comprehensive solution to detect, investigate and respond to incidents

- Build-in enhanced UEBA, automation (SOAR), hunting capabilities, and threat intelligence (TI) to expedite investigation and response
- Industry's first unified experience for SIEM and XDR, with built in GenAI and Threat Intelligence
- Quick response to issues through collaboration with built-in case management for SOC teams
- Stay ahead of threats with built-in threat intelligence with the latest insights from Microsoft Defender Threat Intelligence (MDTI) and Microsoft threat research



Reduce mean time to respond (MTTR) by 80%<sup>1</sup>

# Comprehensive patching with Azure Update Manager

Update and patch your Windows and Linux servers running anywhere with Azure Update Manager enabled by Azure Arc

## → Streamlined patch management

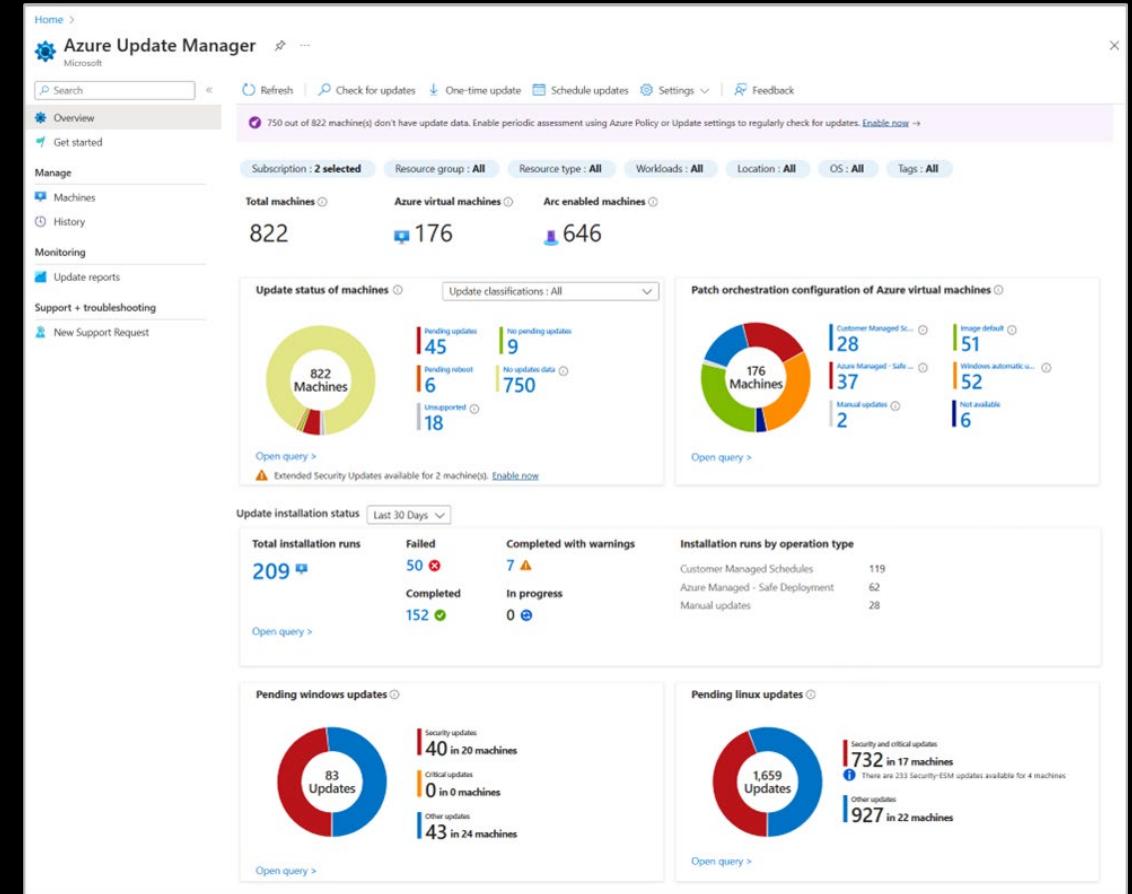
Oversee update compliance for your entire fleet of machines in Azure (Azure VMs), on-premises, and multicloud environments

## → Centralized control with RBAC

Inherit Azure RBAC configured on the machines to control who can perform update operations and edit schedules. Seamless access management to Azure resources with Azure roles and identity

## → Intelligent automation and scheduling

Automate and orchestrate securely with customized, defined maintenance schedules, hot-patching, and auto-patch to reduce reboots and optimize during VM downtimes



# ESUs enabled by Azure Arc

## Flexible PAYGO monthly billing and savings

Monthly billing model centralized in Azure to run end-of-support operating systems

## Visibility and reliability

Ensure consistent Windows Server 2012/R2 and SQL Server 2012 performance with high availability and visibility over your entire data and server estate. Keyless delivery

## Security and compliance

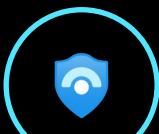
Seamlessly extend Azure security and governance to your environment and stay compliant with supported software



Microsoft  
Defender  
for Cloud



Azure  
Update  
Manager



Microsoft  
Sentinel



Azure  
Policy



Azure  
Monitor

Microsoft Azure | Azure Arc | Extended Security Updates

Search | Overview | All Azure Arc resources | Azure Arc resources | Machines | Kubernetes clusters | SQL servers | Host environments | Azure Stack HCI | SCVMM management servers | VMware vCenters | Settings | Custom locations | Data controllers | Resource bridges | Service principals | Private link scopes | Extended Security Updates

Licenses | Eligible resources

Keep Windows 2012 machines reaching the end of their support lifecycle protected by enabling Extended Security Updates are automatically delivered to Azure Arc-enabled machines if they're connected. This can also apply to

Enable ESUs | Refresh | Enable ESUs

1 machine(s) have ESUs enabled by key. It's recommend to enable ESUs through Azure Arc to remain protected after

| Name                  | ESUs status            | Operating system | Resource ID |
|-----------------------|------------------------|------------------|-------------|
| Contoso-Arc-Server-01 | Enabled                | Windows 2012     | contoso     |
| Contoso-Arc-Server-02 | Enabled                | Windows 2012     | contoso     |
| Contoso-Arc-Server-03 | Not enabled            | Windows 2012 R   | contoso     |
| Contoso-Arc-Server-04 | Enabled                | Windows 2012 R   | contoso     |
| Contoso-Arc-Server-05 | Enabled - key expiring | Windows 2012     | contoso     |

ESUs status : All | Operating system : All | Subscription : All | Resource ID

Enroll and purchase ESUs directly in the Azure Portal

# VMware vSphere and System Center VMM

GENERALLY AVAILABLE

Purpose built for VMware vSphere

Bring Azure capabilities your environments with Azure Arc

At-scale management for your VMware vSphere & SCVMM VMs in Azure



## Connect at scale

Connect an entire environment managed by vCenter or System Center Virtual Machine Manager at scale



## Automatic inventory discovery

Automatic up to date inventory synced from vCenter & SCVMM to Azure and available via Azure Resource Graph



## Install Arc Agent at scale

Install Arc agent at scale using portal, CLI, or running the script yourself



## Secure, govern and monitor

Perform governance, monitoring and security at scale using Azure Monitor, Microsoft Defender, Azure Policy, Azure Update Manager, and more



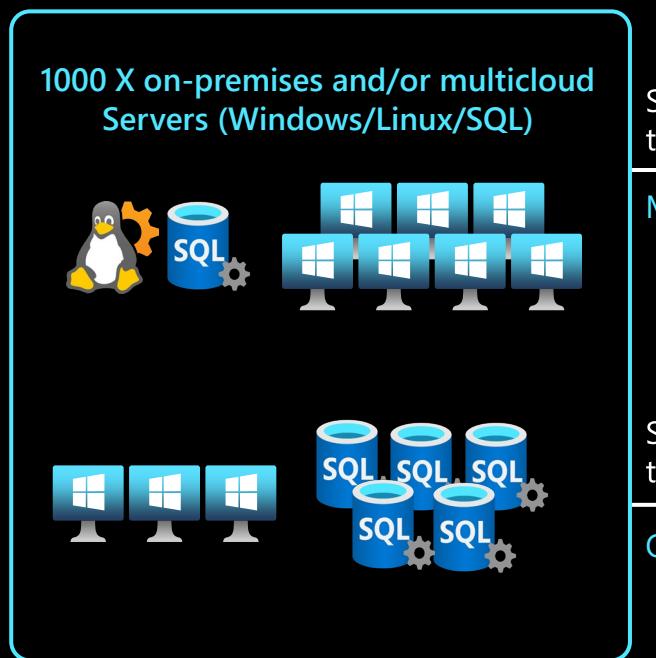
VMware vSphere and System Center environments hosted anywhere

Unified experience with Arc-enabled Servers



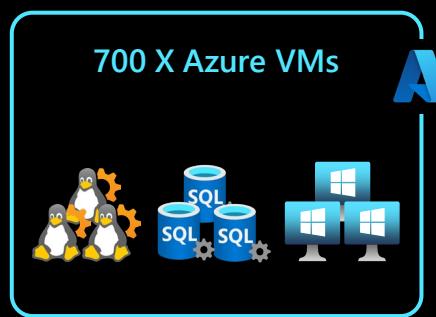
# Migrate and Modernize to Azure on your own terms

Azure Arc helps you consistently secure and govern infrastructure across environments as you migrate and modernize



Servers that are ready to move to the cloud

Migrate to Azure

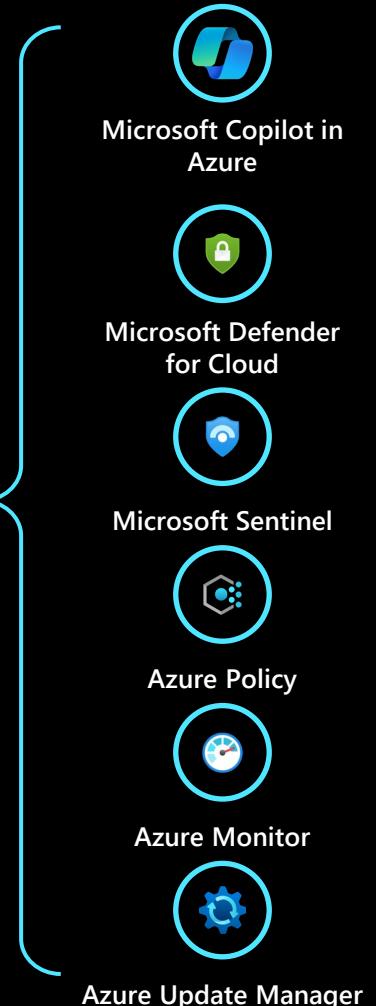


Servers that are not ready to move to the cloud

Onboard to Azure Arc



Turn on Azure security, monitoring and governance services for all servers no matter where you are in the migration journey



# Azure Stack HCI

Modern subscription for flexible, familiar hyperconverged infrastructure



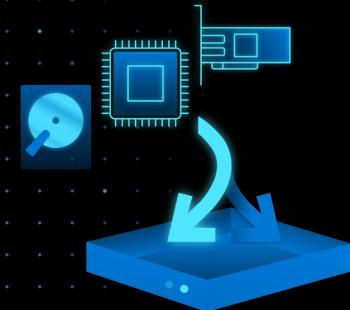
Azure hybrid  
by design



Enterprise scale and  
price performance



Familiar  
management  
and operations



Choice of  
deployment options

# When to use Azure Stack HCI

Distributed compute anywhere for low latency with central cloud management



Affordably run intelligent edge and remote branch office solutions



Industry-best performance for SQL Server databases



Deploy cloud native apps and Azure Arc enabled services through tight integration with AKS on-prem



Best in class virtual desktop experience with Azure Virtual Desktop for Azure Stack HCI



[Azure Arc] ensured our entire SQL estate, on-premises & multicloud, were meticulously prepared for migration to Azure, guaranteeing a smoother and highly successful migration experience.

—Chandra Kala Macha, Information Officer II, World Bank



## SITUATION

- Sprawling IT operations across 130+ locations
- Various IT teams using multiple cloud providers and tools to manage the complex backend
- Difficult and time-consuming to monitor and secure on-premises SQL Server given the fact multiple teams need to be aligned and coordinated

## SOLUTION

- **Consolidate:** World Bank adopted [Azure Arc](#) to address multiple issues including [inventory management](#) of their SQL estate, streamlining maintenance tasks such as [backups](#) and [patching](#), [best practices assessment](#) and gaining insights on migration readiness
- **Unify:** World Bank wanted a solution that could be used to manage both Azure and AWS servers, but that would also work with its Microsoft SQL Server stack
- **Expand:** The Information Security Office at World Bank uses [Defender for Cloud](#), [Microsoft Purview](#). With Azure Arc, they extended those services to entire SQL estate, on-premises and across multicloud

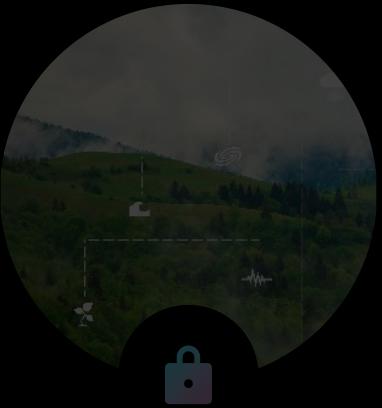
## IMPACT

- **90% cost saving** from consolidating tools for monitoring, security and compliance
- **Streamline cloud migration journey** using Azure Arc
- Significantly **reduced security risks and non-compliance** at the levels of both compute resources and data workloads

# Innovate anywhere with Azure



Azure Arc



Secure and govern your infrastructure and apps



Build apps once, deploy and manage them anywhere



Run Azure data, app, and AI/ML services from cloud to edge

# Deliver cloud agility anywhere and modernize applications from cloud to edge using Kubernetes

## Customer need to

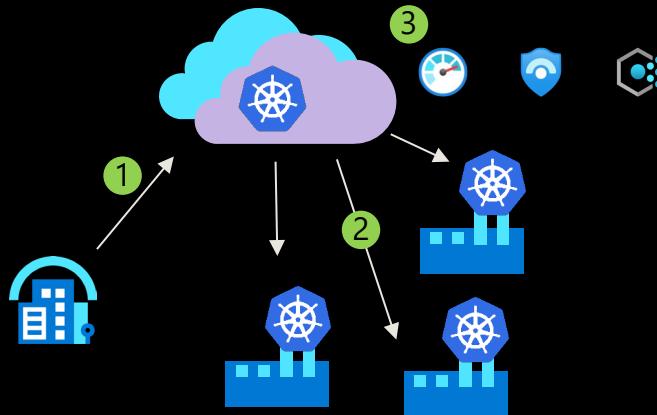
Run Azure services on-premises for low-latency, compliance and distributed computing needs

Build cloud-native Kubernetes applications and deploy in your enterprise and at the edge

Ops-as-Code: Automate repeatable configuration and deployment tasks

Deploy to new or existing infrastructure – Windows Server, VMware and more

## How



- ① Dev/Test Kubernetes apps in Azure regions
- ② Continuously deploy and update production apps on Arc-enabled K8s at the edge
- ③ Operate, manage, and secure with the same tools

## Microsoft Offerings

Enabled by Azure Arc

- AKS on Azure Stack HCI, Windows Server, Windows IoT
- At-scale Kubernetes management (CNCF)
- GitOps pipelines
- Flux
- Azure monitoring and security for containers
- Open Service Mesh
- Azure Container Apps - preview
- Azure Application Services – preview

# Build apps once, deploy and manage them anywhere with Azure Arc



Build and modernize to cloud-native apps on any Kubernetes



Bring cloud data management to any infrastructure



Consistent GitOps and policy driven deployment on any Kubernetes



Integrate Azure Security, governance and monitoring into your DevOps toolkit



Azure Arc-enabled Kubernetes



Azure Arc-enabled SQL Managed Instance



Azure Arc-enabled PostgreSQL



Azure Stack HCI

vmware®



aws



Azure IoT

On-premises, multicloud, and edge

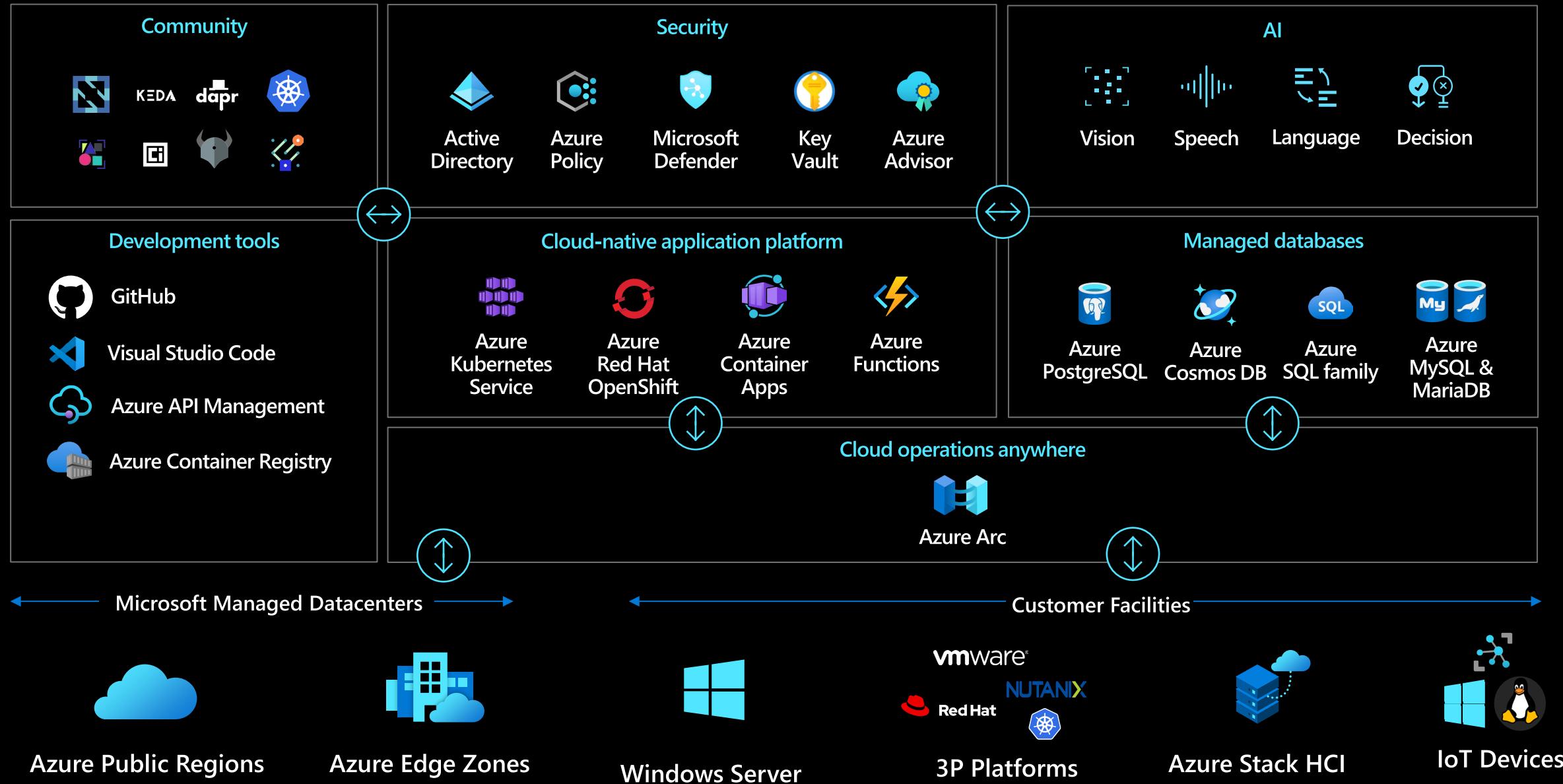
# Managed Kubernetes from cloud to edge

GENERALLY AVAILABLE

Flexible deployment options on the infrastructure of your choice



# Cloud-native on Azure



# Azure Arc-enabled Kubernetes

GENERALLY AVAILABLE

Connect, manage, and operate Kubernetes clusters and applications running anywhere



AKS on Azure Stack  
HCI or Windows  
Server



Multiple 3P  
Kubernetes flavors  
supported



Deploy apps and  
configurations at-  
scale with GitOps



Secure, govern and  
monitor all your  
clusters, from Azure



AKS



Kubernetes



OpenShift



EKS



GKE



VMware Tanzu



NUTANIX



PLATFORM9



CANONICAL



# Create Kubernetes clusters and manage them from the Azure Portal

Home > Azure Arc

## Azure Arc | Kubernetes clusters

Microsoft

Search:  Add Manage view Refresh Export to CSV Open query Assign tags

Overview All Azure Arc resources

Management

- Custom locations
- Data controllers
- Resource bridges (preview)
- Service principals
- Private link scopes

Infrastructure

- Azure Arc virtual machines (preview)

Create an AKS hybrid cluster (preview)  Equals all Type equals all Resource group equals all

Add a Kubernetes cluster with Azure Arc

| Name ↑                          | name (tag) ↑      | function (tag) ↑  | Type ↑                 | Resource group | Kubernetes version ↑ | Location ↑ |
|---------------------------------|-------------------|-------------------|------------------------|----------------|----------------------|------------|
| 27405892-b9b8-474d-a5db-fe...   | Cafe-Capitol-Hill | AKS Control Plane | Kubernetes - Azure Arc | S2010-aks      | 1.23.8               | East US    |
| 68cf9c2a-3e88-4ede-8c10-9d8...  | Cafe-Belltown     | AKS Control Plane | Kubernetes - Azure Arc | S1010-aks      | 1.23.8               | East US    |
| ba60dc04-25c4-4271-a5d2-68...   | RoasteryHQ        | AKS Control Plane | Kubernetes - Azure Arc | Roastery       | 1.23.8               | East US    |
| c424a846-5dbd-4249-ac0a-f93...  | Cafe-Fremont      | AKS Control Plane | Kubernetes - Azure Arc | S3010-aks      | 1.23.8               | East US    |
| f0b9c1db-446f-4467-94e5-0afc... | Cafe-U-District   | AKS Control Plane | Kubernetes - Azure Arc | S4010-aks      | 1.23.8               | East US    |

Home > Azure Arc

## Azure Arc | Kubernetes clusters

Microsoft

Search:  Add Manage view Refresh Export to CSV Open query Assign tags

Filter for any field... Subscription equals all Type equals all Resource group equals all Location equals all

No grouping List view

| Name ↑                          | name (tag) ↑      | function (tag) ↑  | Type ↑                 | Resource group ↑ | Kubernetes version ↑ | Location ↑ |
|---------------------------------|-------------------|-------------------|------------------------|------------------|----------------------|------------|
| ba60dc04-25c4-4271-a5d2-68...   | RoasteryHQ        | AKS Control Plane | Kubernetes - Azure Arc | Roastery-aks     | 1.23.8               | East US    |
| 77df868a-793e-4fc3-bea0-2f02... | Cafe-Belltown     | AKS Control Plane | Kubernetes - Azure Arc | S1010-aks        | 1.23.8               | East US    |
| 27405892-b9b8-474d-a5db-fe...   | Cafe-Capitol-Hill | AKS Control Plane | Kubernetes - Azure Arc | S2010-aks        | 1.23.8               | East US    |
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| f0b9c1db-446f-4467-94e5-0afc... | Cafe-U-District   | AKS Control Plane | Kubernetes - Azure Arc | S4010-aks        | 1.23.8               | East US    |
| cafe-belltown-foursale          | Cafe-Belltown     | FourSale          | Kubernetes - Azure Arc | S1010-aks        | 1.23.8               | East US    |
| cafe-capitolhill-foursale       | Cafe-Capitol-Hill | FourSale          | Kubernetes - Azure Arc | S2010-aks        | 1.23.8               | East US    |
| cafe-fremont-foursale           | Cafe-Fremont      | FourSale          | Kubernetes - Azure Arc | S3010-aks        | 1.23.8               | East US    |
| cafe-u-district-foursale        | Cafe-U-District   | FourSale          | Kubernetes - Azure Arc | S4010-aks        | 1.23.8               | East US    |



[Read full story here](#)



We ended up with the Azure Kubernetes Service and Azure Arc solution ... because our account team, and specifically some of our Microsoft developer advocates, knew and understood where we wanted to go as a company. Microsoft provided training and responded quickly to our team's questions throughout the migration and development process—it was a game-changer.

—**Jon Hathaway, Senior Technical Lead, DICK's Sporting Goods**



## SITUATION

To accomplish DICK's vision of a "one store" technology strategy, they needed a new level of modularity, integration, and simplicity to connect its public cloud environment with its computing systems at the edge.

They needed a solution that would write, deploy, manage, and monitor systems nationwide on its public websites.

## SOLUTION

**Migration and Modernization:** With the help of Microsoft, the company migrated to Microsoft Azure and created an adaptive cloud environment comprised of Azure Arc and Azure Kubernetes Services (AKS), that would manage data processing and workloads it needed in the cloud.

**Cloud native development and deployment:** Using Azure Kubernetes Service, DICK's IT team can deploy new applications to and databases to their 800 plus retail stores.

**Seamless patching:** Using Azure Update Manager, the IT team can patch all its Windows, Linux, and SQL machines running everywhere – in the public cloud, a private datacenter, or in the retail stores.

## IMPACT

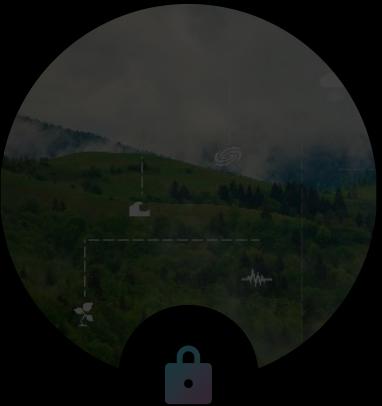
Today, DICK's tech teams are better able to manage implementation of new apps from the store's technology teams more efficiently, with system self healing, automated reprovisioning, and deployment of code to all of the stores at once.

This has enabled the company to continue omnichannel innovation faster than ever before.

# Innovate anywhere with Azure



Azure Arc



Secure and govern your infrastructure and apps



Build apps once, deploy and manage them anywhere



Run Azure data, app, and AI/ML services from cloud to edge

# Transform physical operations with cloud and AI

## Customer needed

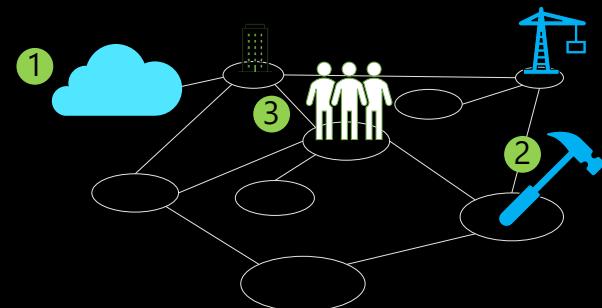
Data connections from physical operations to the cloud, to harness AI and insights

Automated and improve site workflows centrally, from the cloud across multiple locations

Reliable edge solutions that could operate with intermittent connectivity

Distributed compute at the edge for low latency with central cloud management

## How



- ① Model & describe physical processes in Azure
- ② Collect data, create context, derive insights where needed
- ③ Make decisions and take actions. Repeat.

## Microsoft Offerings

Enabled by Azure Arc

- SQL MI
- Azure SQL MI Business Critical
- PostgreSQL – preview
- Azure Machine Learning
- Azure IoT Hub
- Azure Digital Twins
- Azure Stack HCI
- Windows IoT

# Run Azure data, app, and ML services

Configuration management | Observability | Governance | Security



Microsoft  
Copilot  
for Azure



Microsoft  
Defender  
for Cloud



Azure  
Monitor



Microsoft  
Sentinel



Azure  
Policy



Azure  
Update  
Manager



Configuration  
Management



Inventory  
Management

← Azure Services across your infrastructure →



Windows  
Server



Azure  
Stack HCI

vmware®



ORACLE



Azure  
IoT



Datacenter, multicloud, and edge

# Bring cloud manageability to SQL Server anywhere

Manage, govern, and protect your SQL Server from Azure



## Manage all SQL estate with better observability

**Single view** of all SQL Servers deployed on-premises, in Azure and other clouds

Capture key performance metrics and realize faster time-to-value with **monitoring**

Gain proactive & actionable insights with automated **best practices assessment**



## Enhance business continuity

Manage **Availability Groups** inventory and track real-time health status

View Always-on **Failover Cluster Instances** and protect with Defender

**Automated backups and point-in-time** restore for seamless application of policy



## Govern and protect all SQL estate using Azure

Protect your on-premises & multicloud data using **Microsoft Defender** for Cloud

Enhance security using **Extended Security Updates** as a service & **auto patching**

**Central insights and governance** across all SQL Servers with Microsoft Purview



Azure billing enabled by Azure Arc for SQL Server anywhere, with simplified onboarding

# Management Capabilities Comparison

Not supported

Supported

Future support

|                                     | Customer Infrastructure or 3P Clouds |                        |                     | Azure |
|-------------------------------------|--------------------------------------|------------------------|---------------------|-------|
| Built-in capabilities               | SQL Server                           | Arc Enabled SQL Server | SQL Server Azure VM |       |
| Pay-as-you-go billing               |                                      |                        |                     |       |
| Azure AD auth                       |                                      |                        |                     |       |
| Best practices assessment           |                                      |                        |                     |       |
| Inventory management                |                                      |                        |                     |       |
| Auto patching                       |                                      |                        |                     |       |
| Auto backup                         |                                      |                        |                     |       |
| Monitoring                          |                                      |                        |                     |       |
| Defender for SQL Server             |                                      |                        |                     |       |
| TDE with Azure Key Vault            |                                      |                        |                     |       |
| HA/DR inventory management          |                                      |                        |                     |       |
| License usage management            |                                      |                        |                     |       |
| Cluster aware patching and upgrades |                                      |                        |                     |       |
| Purview premium                     |                                      |                        |                     |       |
| Point-in-time restore               |                                      |                        |                     |       |
| Backup long-term retention to Azure |                                      |                        |                     |       |

\*Some information regarding product roadmap may be substantially modified before it's commercially released. Microsoft makes no warranties, express or implied, with respect to the information provided here.

Home &gt;

# bwsqserver2022



Server - Azure Arc

 <<Delete Refresh

## Essentials

[JSON View](#)Resource group ([move](#)) : **bwvmsrg**Computer name : **bwsqserver2022**Status : **Connected**FQDN : **bwsqserver2022**Location ([move](#)) : **East US**Operating system : **Windows Server 2022 Datacenter**Subscription ([move](#)) : **Microsoft Azure Sponsorship**Operating system version : **10.0.20348.1487**Subscription ID : **e1775f9f-a286-474d-b6f0-29c42ac74554**Cloud provider : **N/A**Agent version : **1.25.02203.713**Manufacturer : **Microsoft Corporation**Model : **Virtual Machine**Tags ([edit](#)) : [Click here to add tags](#)

## Capabilities

[Recommendations](#)[Tutorials](#)

### Updates

Customize updates for your Arc-enabled server.



### Logs

Enable additional monitoring capabilities.



### Monitoring insights

Enable additional monitoring capabilities.



### Policies

View compliance by assigning guest configuration policies to your machine.

Not configured

### Change tracking and inventory

Enable consistent control and compliance of this machine with Change tracking and inventory.



### Security

Continuously monitor for potential security vulnerabilities and recommendations.



### Windows Admin Center (preview)

Manage your operating system from anywhere — without needing a VPN

## Monitoring

# Azure Arc-enabled data services

## Bring cloud data management to any infrastructure

GENERALLY AVAILABLE

Azure Arc-enabled SQL Managed Instance –  
Business Critical

PREVIEW

Azure Arc-enabled PostgreSQL



Supports all connectivity modes



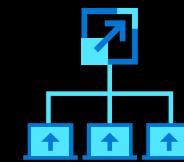
### Always up to date

Automated updates  
No downtime, evergreen



### Multi-layer security

Comprehensive encryption  
Azure RBAC & Policy



### Elastic scale

Scale up and down  
Pay for what you use



### Simplified DevOps

Deploy in seconds  
Built in HA/DR



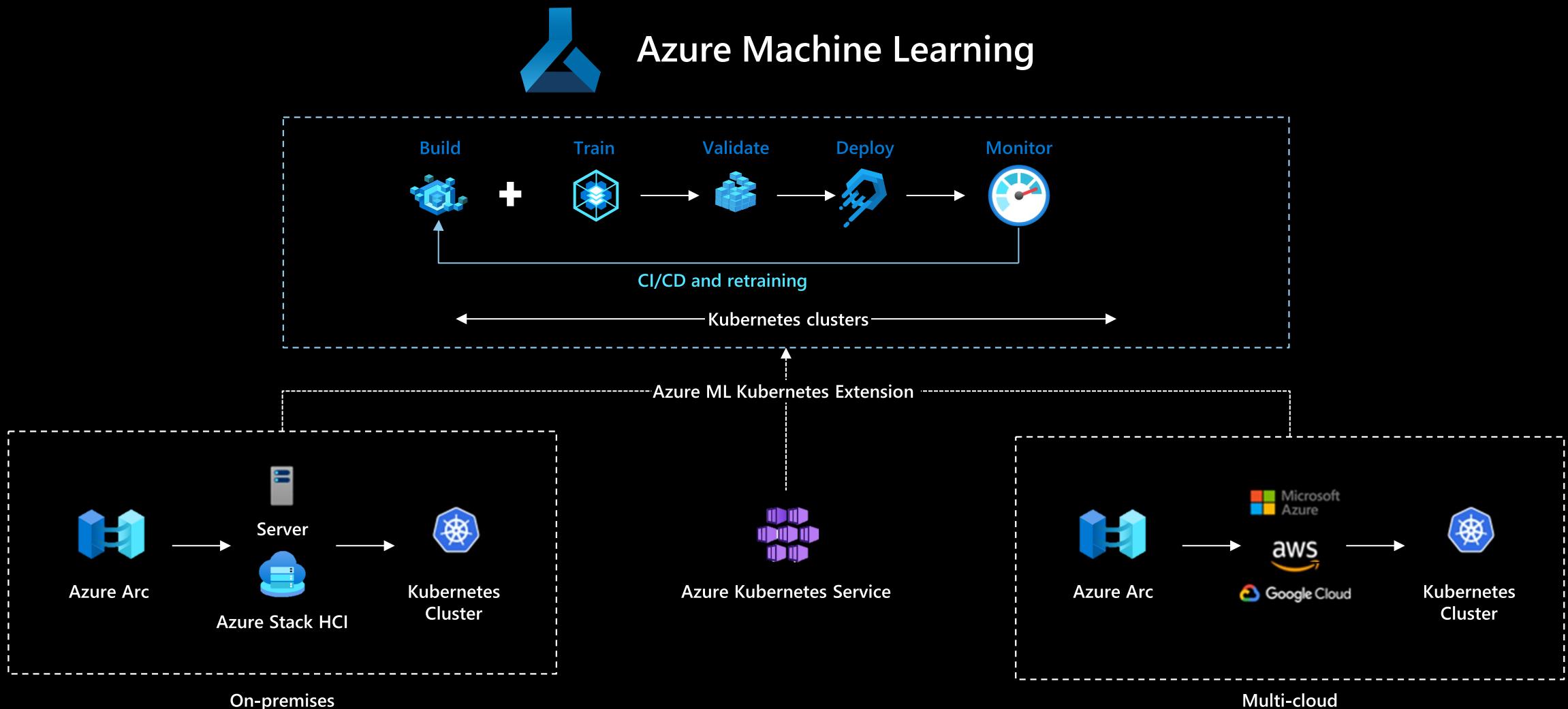
Any infrastructure



# Azure Arc-enabled machine learning

GENERALLY AVAILABLE

Bring fully operationalized machine learning to on-premises and multicloud





“

Cloud-native patterns and practices help us deliver the factory solutions that are a key to our future success. Azure Arc-enabled data services help make this possible for us.

Jason Wallin

PRINCIPAL ARCHITECT, JOHN DEERE

”



# Azure Arc-enabled Servers pricing

Azure Arc is free to install. Basic management services like inventory, tagging, server organization, RBAC, and querying with Azure Resource Graph are free. Paid services are:



## Microsoft Defender for Cloud **\$5/server/month (Plan 1) or \$15/server/month (Plan 2)**

Free for the first 30 days, with 500MB/server included data. \$0.02/server/hr.



## Azure Monitor **\$2.30/GB [pay-as-you-go]**

Billed for log analytics, tests, metrics, alerts, and notifications. 5GB per billing account/month is included



## Microsoft Sentinel **\$2/GB-ingested [pay-as-you-go]**

Billed for volume of data ingested for analysis in Microsoft Sentinel, stored in the Azure Monitor Log Analytics workspace



## Azure Update Manager **\$5/server/month [pay-as-you-go]**

Charged at a daily prorated value of \$0.16/server/day. Only charged for days when Arc servers are connected and managed

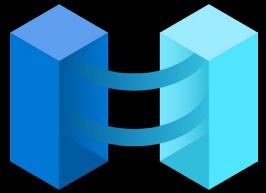


## Azure Policy Guest Configuration **\$6/server/month**

Policies assigned by Defender for Cloud, ESUs, or on Azure Stack HCI resources are exempt

# New cloud billing model for SQL Server (pay-as-you-go\*)

Better cost efficiency when paying only for what you use



SQL Server pay-as-you-go  
licensing enabled by Azure Arc  
(per core per month/hour)

| Pricing            | Monthly rate | Hourly rate |
|--------------------|--------------|-------------|
| Standard Edition   | \$73         | \$0.100     |
| Enterprise Edition | \$274        | \$0.375     |



## Optimize asset capitalization

- Organizations that focus on EBITDA and capitalized expenses prefer to purchase their licenses
- Customers that bill on a cost-plus or other expense-based chargeback model will prefer the Pay-As-You-Go model



## Optimize upfront costs

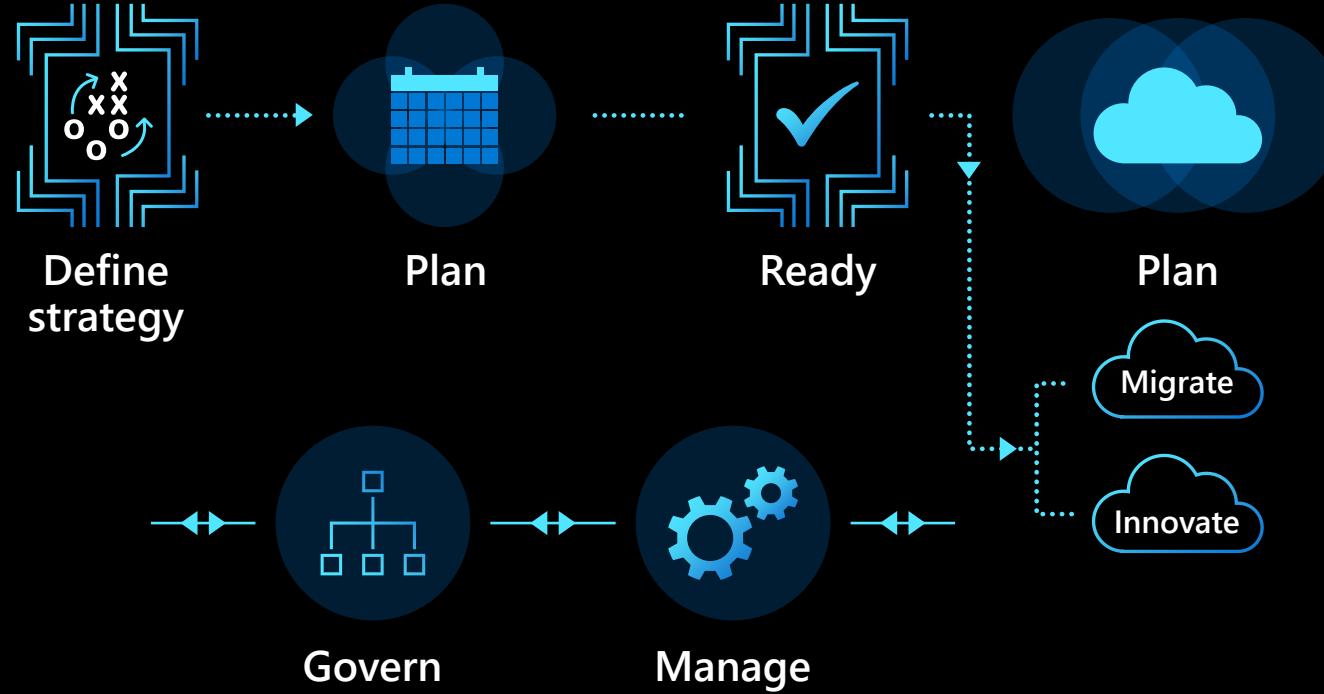
- Pay-As-You-Go doesn't have any upfront costs and is billed monthly but in the long term it may have a higher TCO



## Optimize for periodic consumption

- Reduced IP cost of periodic workloads such as of ERP, payroll, giving campaigns and others
- Scale down the entire VM or stop SQL Server instance

# Complete guidance for an adaptive cloud approach



[Microsoft Cloud Adoption Framework for Azure](#) | [Microsoft Azure](#)

Start with the cloud adoption framework to guide your cloud journey and build on it using the hybrid adoption scenario guidance

-  Build skills across your team with [Microsoft Learn](#)
-  Accelerate deployment with [Reference Architectures](#)
-  Optimise workloads with [Azure Well-Architected](#)
-  Apply [best practices](#) to rapidly onboard
-  Review [technical documentation](#) on featured products

# Next steps

## Install Azure Arc

Gain visibility into your entire on-premises and multicloud estate for a single pane of glass

## Manage and secure

Get started using Microsoft Defender for Cloud, Azure Monitor, Copilot, and more

## Azure Migrate and Modernize

Utilize the Azure Migrate and Modernize program to deploy Arc at scale and securely move to the cloud with proven best practices and incentives to accelerate

# Learn more

Azure Arc Jumpstart:

<https://aka.ms/AzureArcJumpstart>

Technical documentation:

<https://aka.ms/AzureArcDocs>

Azure Arc Learning Path:

<https://aka.ms/AzureArcLearn>

Azure Arc Learning Companion:

<https://aka.ms/pathways>

Azure Arc ESU Docs:

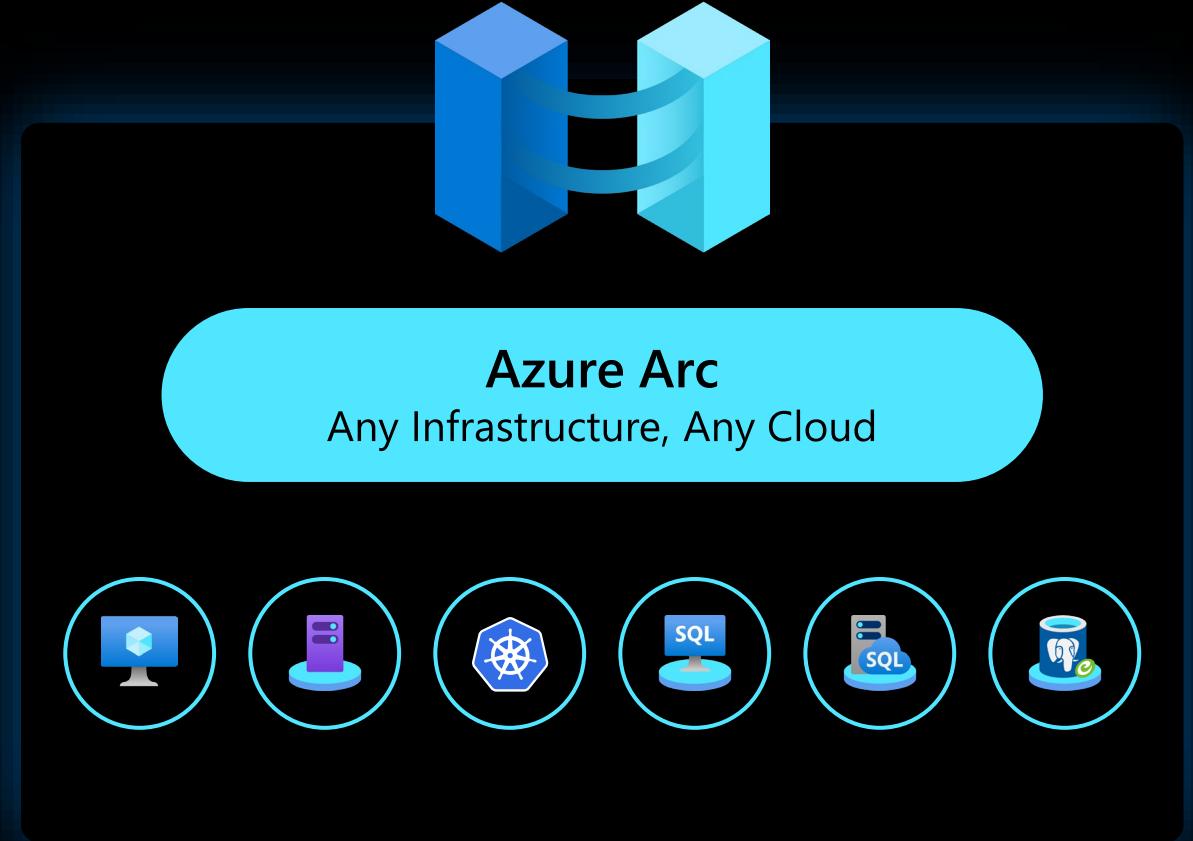
<https://aka.ms/arcesudocs>

Azure Arc Total Economic Impact Report:

<https://aka.ms/arcforresterstudy>

SQL Arc:

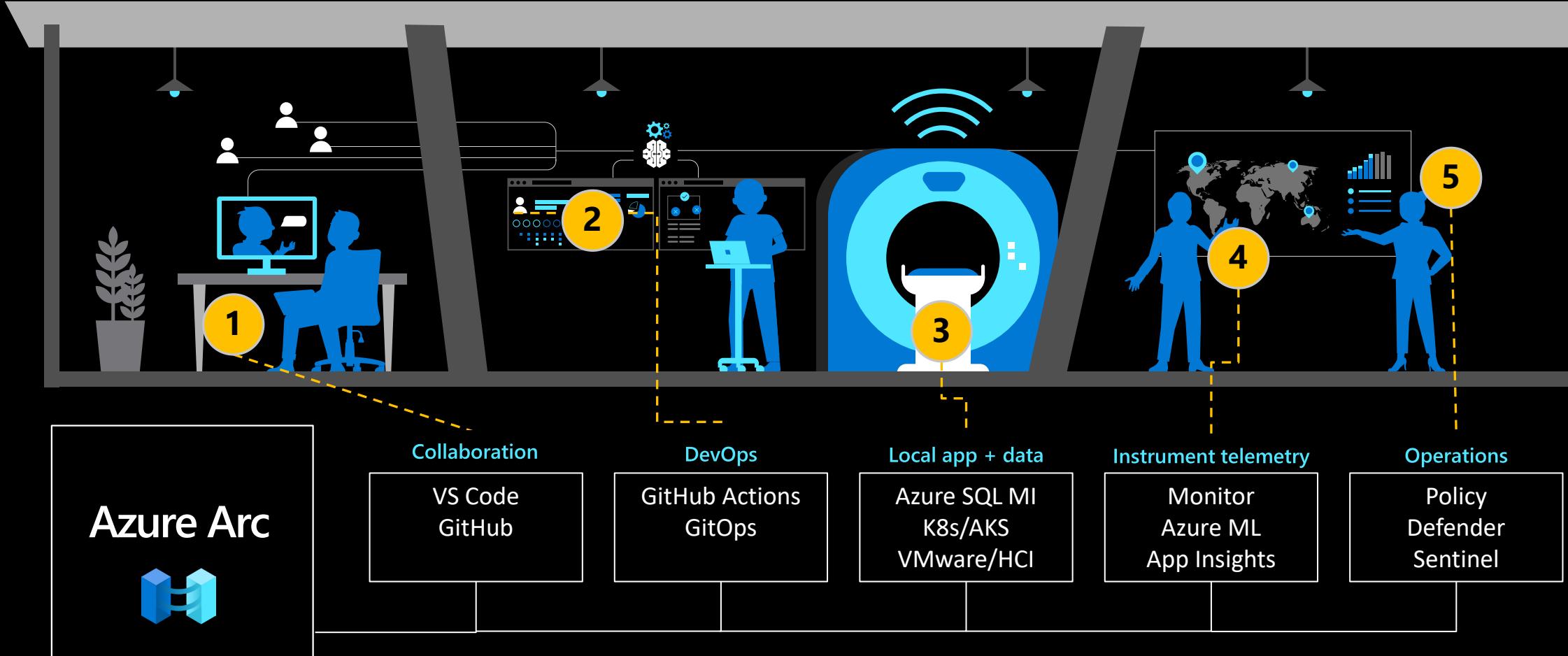
<https://aka.ms/ArcSQL>



Thank you

# Azure Arc use cases

# How it works: accelerate and scale innovation





“

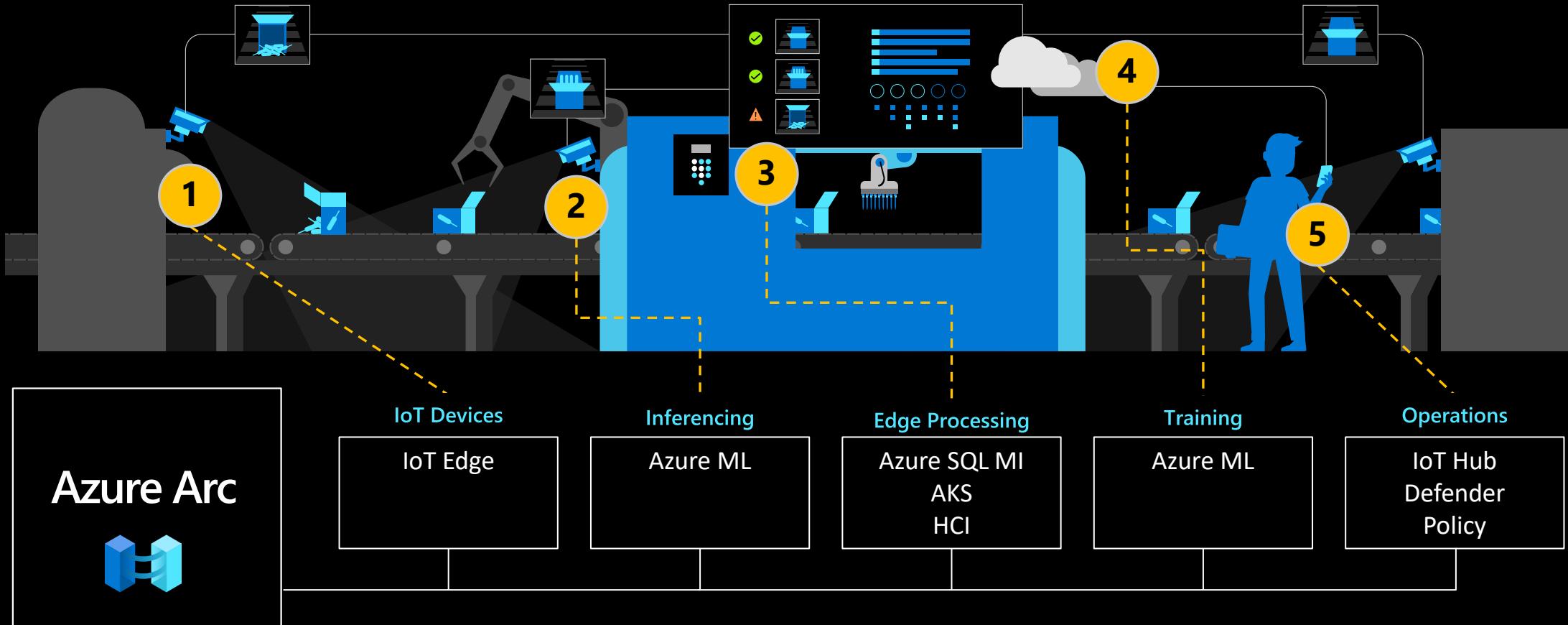
Azure Arc is a game-changer for us. It gives our customers choices and enables the continuous delivery of Kubernetes workloads from the cloud to the edge, at scale and as a service.”

**Thomas Gossler**

Chief Architect for Teamplay  
Siemens



# How it works: improve operational efficiency





## Reliable Rotation through Data-Driven Manufacturing



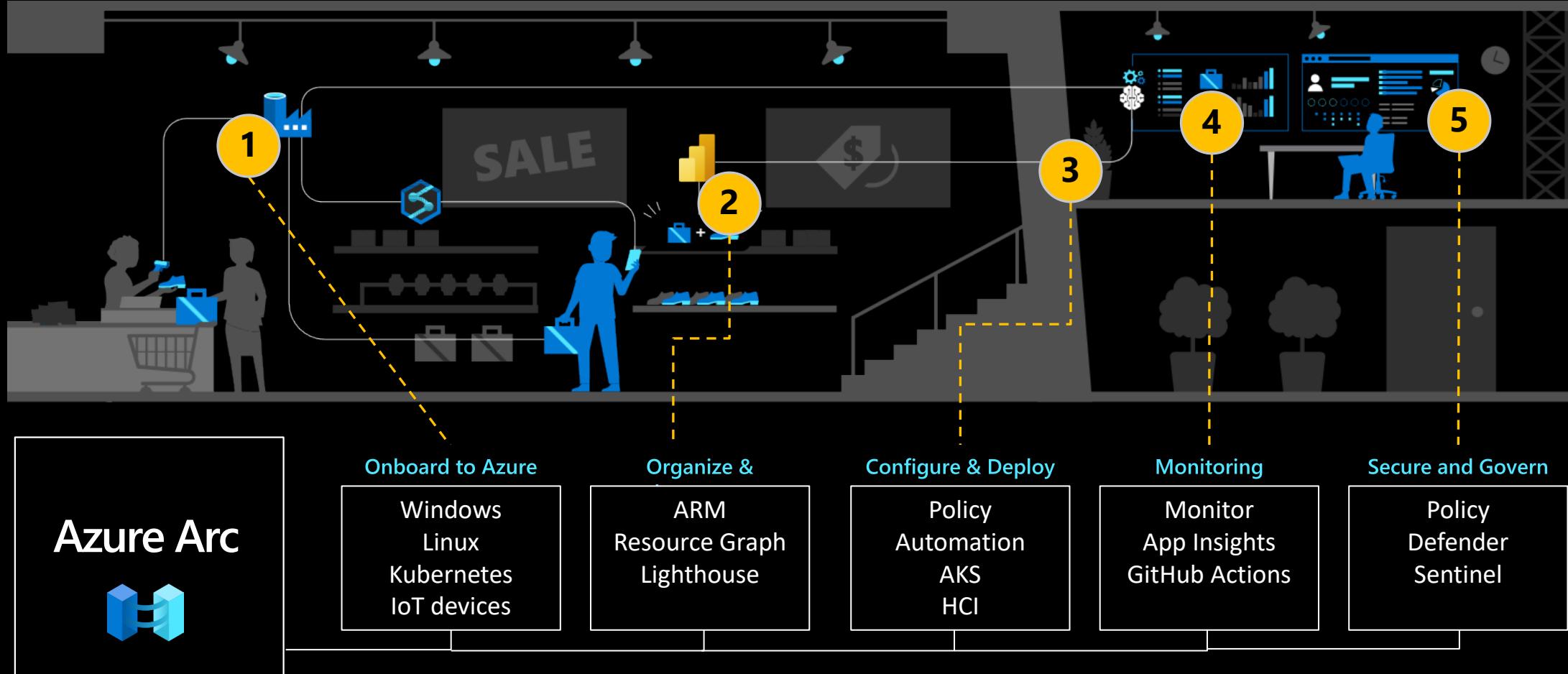
SKF is proud to be at the forefront of the hybrid cloud revolution. Azure Hybrid Cloud Solutions enable us to maximise our efficiency, grow our digital platform for world class manufacturing and empower the SKF Factories of the Future to innovate towards data driven manufacturing.

Azure Stack HCI, together with Azure Kubernetes Services, Azure Arc-enabled Data Services, and Azure SQL Edge for IoT create SKF a scalable platform across on-premises, cloud and edge—all with single-pane-of-glass while driving costs down.”

**Sven Vollbeh**

Head of Digital Manufacturing,  
SKF Group

# How it works: secure and govern digital estate



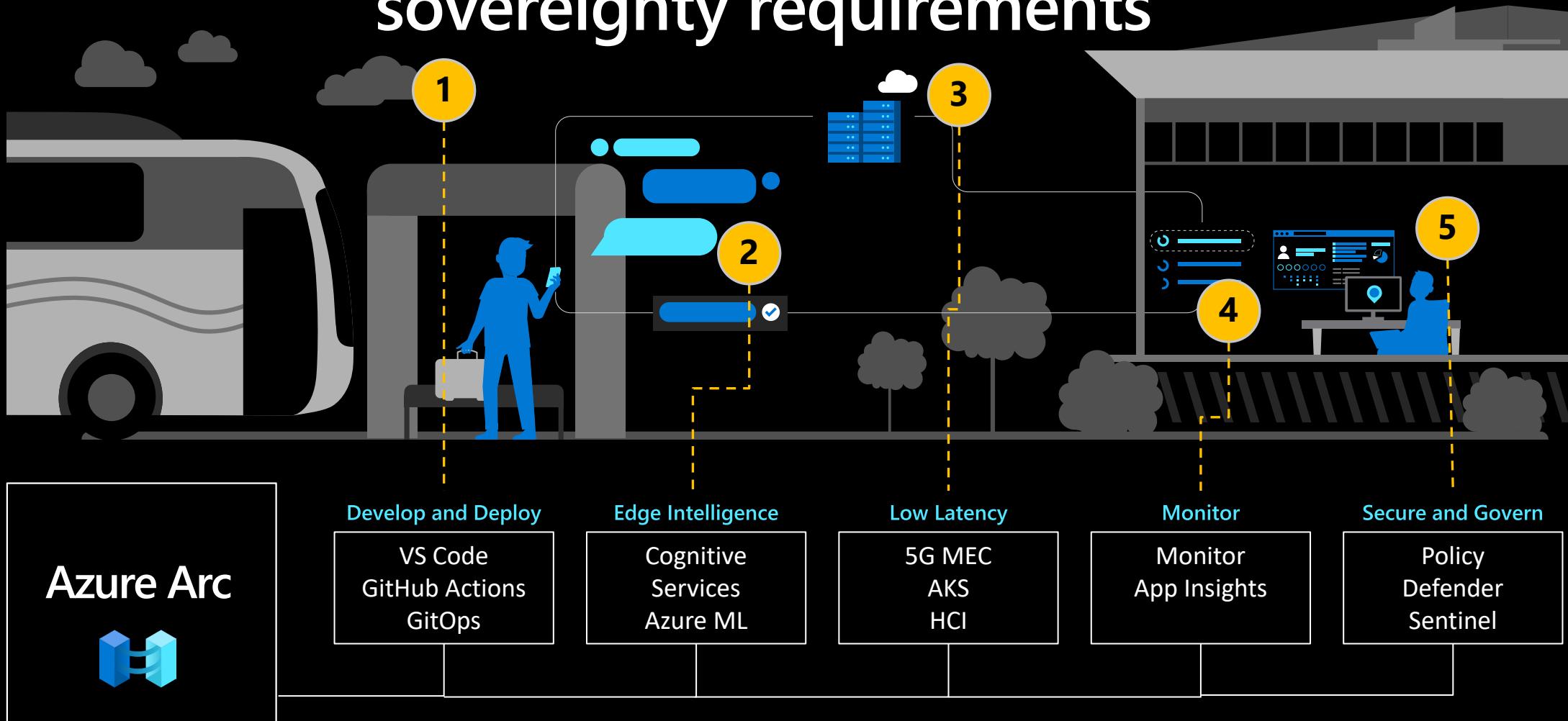
*Example: Intelligent retail*



Azure Arc supports us by freeing up our time from the day-to-day activities of the technical team and focusing on the customer value-add activities. It helps us to make sure that services are always on at the right time for the customer.”

**Scott Clennell**  
Platform and Infrastructure Services Manager,  
Greggs

# How it works: meet custom latency and sovereignty requirements





## AZURE DAY

- 30+ years in IT (Developer, Architect, Consultant, PM, Trainer)
- Speaker, Community addicted
- IoT Influencer



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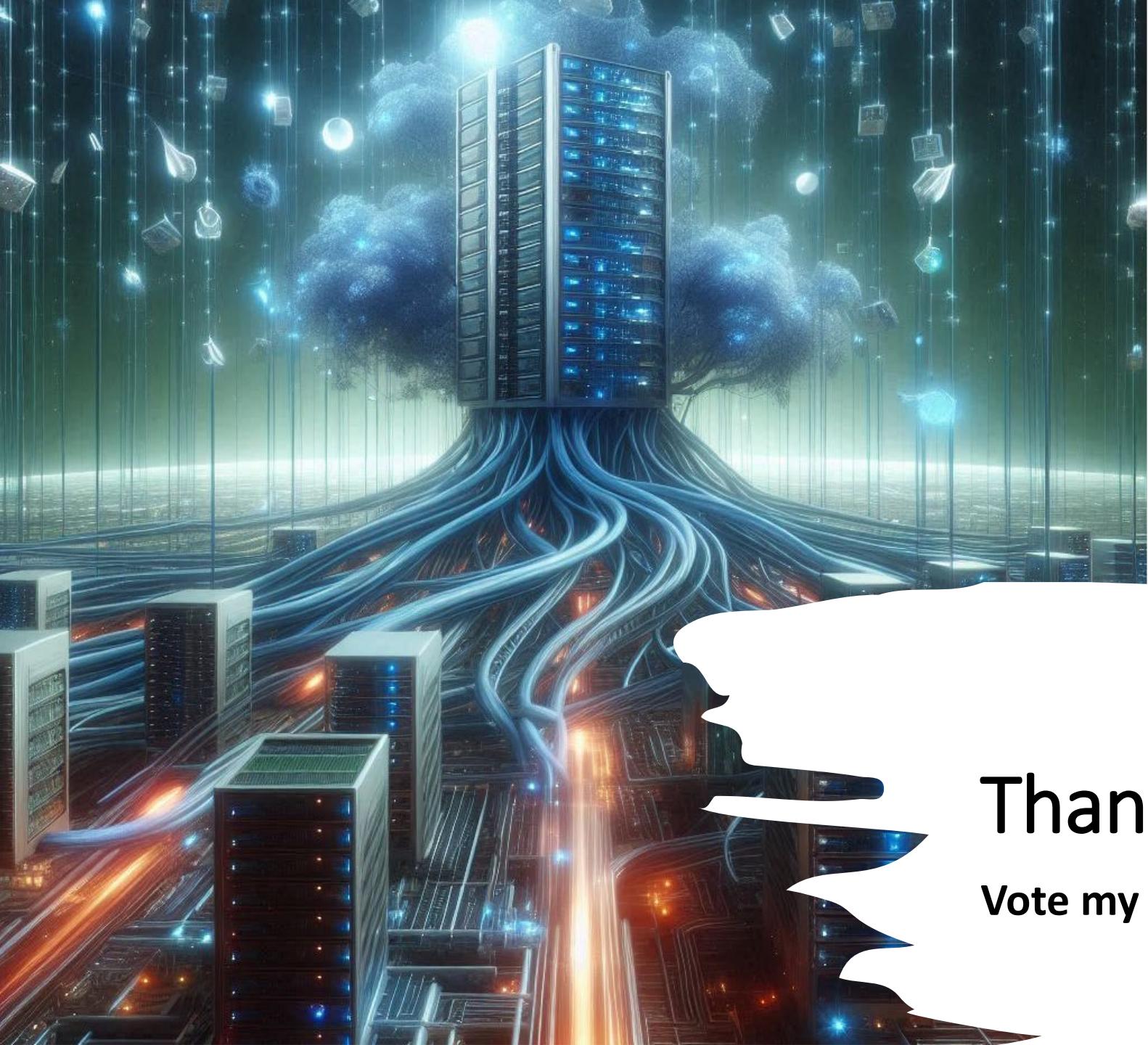


<https://www.twitch.tv/dpcons>  
<https://www.twitch.tv/techchat>



**Marco Dal Pino**  
**Technical Consultant**  
Microsoft





**Thank you!**  
**Vote my session (thanks!)**

