



# From Local to Cloud-Native: Real-World Azure Arc in Action

AZUG - February

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Are you working in a hybrid or multi-cloud environment and facing some of the challenges below?

- Managing multiple environments while maintaining a clear overview of everything you're running
- Efficiently monitoring the health, security, and updates of your services
- Dealing with multiple tools that serve the same purpose across different environments

In this session, we will explain and demonstrate how Azure Arc helps customers address these challenges and more.

➡ The goal is to make you familiar with Azure Arc, help you understand where it can add value to your business, and show you how to get started.

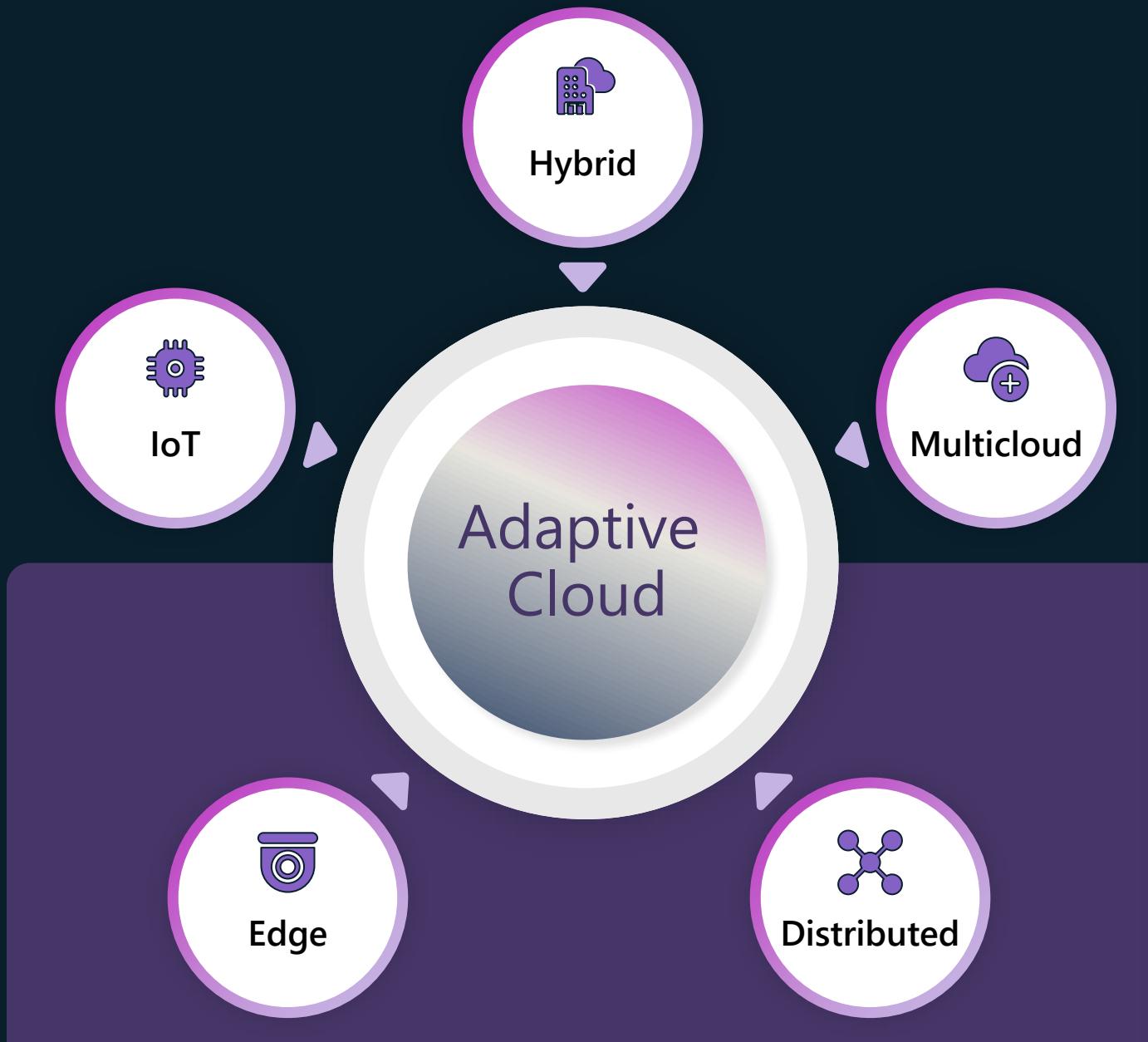
# Who am I?

```
1  {
2      "name": "Tom Claes",
3      "age": 27,
4      "current_role": {
5          "title": "Cloud Solution Architect",
6          "company": "Microsoft",
7          "experience_years": 3.5
8      },
9      "education": {
10         "institution": "KU Leuven",
11         "program": "Master of Science in Artificial Intelligence",
12         "duration_years": 6
13     },
14     "community_contribution": {
15         "focus": "Sharing knowledge and contributing to the community",
16         "platforms": [
17             "Microsoft Tech Community",
18             "Medium",
19             "GitHub",
20             "Public speaking engagements"
21         ]
22     }
23 }
```



# Agenda

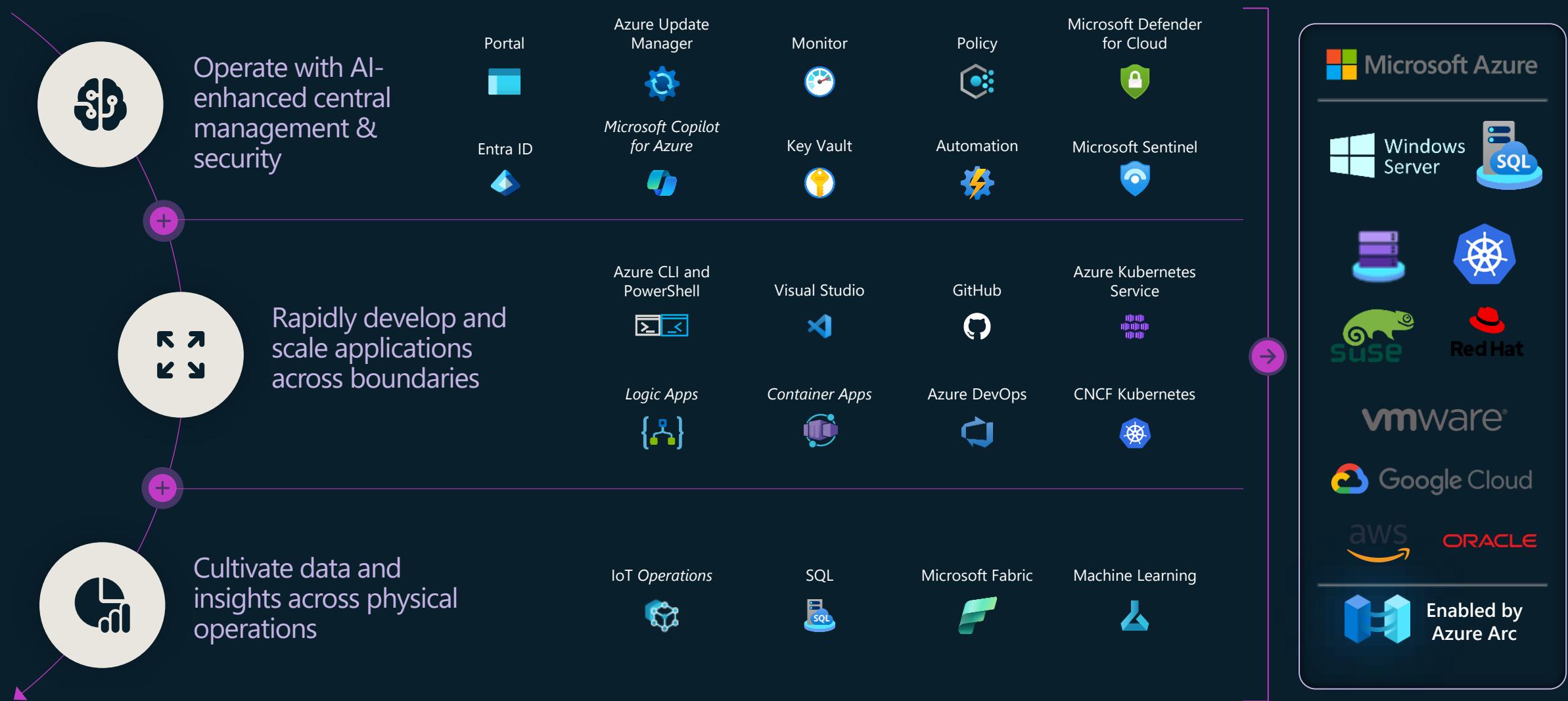
- Intro to the Adaptive Cloud & Azure Arc
- How does this work?
- Key benefits:
  - Visibility across environments
  - Track health, security, and updates of your resources
    - Single solution(s) for various environments
- Demo
  - Onboarding
  - Portal experience
  - azcmagent CLI



## Advancing ~~Hybrid~~ cloud to Adaptive cloud

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

# Enabling adaptive cloud with Azure Arc



# Microsoft Azure



Single control plane with Azure Arc

## Infrastructure

Connect and operate hybrid resources as native Azure resources

Azure Arc-enabled infrastructure



Arc Server



K8s



Windows



SQL Server



Linux



Microsoft Defender



Azure Monitor



Microsoft Sentinel



Azure Update Manager



Azure Policy

## Services

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

Azure Arc-enabled services



Multi-cloud



Datacenter



Edge



# How does this work?

# How does the onboarding work?

To install the agent package:

- Windows: PowerShell
- Linux: Bash script

- Generated through the Azure Portal
- RBAC with built-in Azure Arc roles
- Built-in (by default) in WS2025 & SQL Server 2025

At scale deployments:

- PowerShell and Service Principal
- SCCM (task sequence or script)
- Ansible
- Windows Admin Center
- Group Policy
- SCVMM

Microsoft Azure

Home > Azure Arc | Machines

Onboard existing machines with Azure Arc

1. Select deployment method

Deployment method

Basic script

Configuration Manager

Group Policy

Ansible

2. Download the script and add service principal credentials

ⓘ You will need to manually add your service principal client ID and secret to the onboarding script. Verify that your service principal has the 'Azure Connected Machine Onboarding' role.

[Learn more about adding servers with a service principal](#)

[Create a service principal or copy an existing client ID](#)

```
1 $global:scriptPath = $myinvocation.mycommand.definition
2
3 function Restart-AsAdmin {
4     $pwshCommand = "powershell"
5     if ($PSVersionTable.PSVersion.Major -ge 6) {
6         $pwshCommand = "pwsh"
7     }
8
9     try {
10        Write-Host "This script requires administrator permissions to install the Azure Connected Machine Agent"
11        $arguments = "-NoExit -Command `"$scriptPath`""
12        Start-Process $pwshCommand -Verb runAs -ArgumentList $arguments
13        exit 0
14    } catch {
15        throw "Failed to elevate permissions. Please run this script as Administrator."
16    }
17 }
18
19 try {
20    if (-not ([Security.Principal.WindowsPrincipal] [Security.Principal.WindowsIdentity]::GetCurrent()).IsInRole([Security.Principal.WindowsBuiltInRole]::Administrator)) {
21        if ([System.Environment]::UserInteractive) {
22            Restart-AsAdmin
23        } else {
24            throw "This script requires administrator permissions to install the Azure Connected Machine Agent"
25        }
26    }
27
28    # Add the service principal application ID and secret here
29    $servicePrincipalId="359947e8-fe13-483c-b58a-30833789447c";
30    $servicePrincipalClientSecret="";
31 }
```

Download

# What is the Azure Arc Connected Machine Agent?

- Windows agent is distributed as a Windows Installer package (MSI)
- Linux: the preferred package format for the distribution (.rpm or .deb), hosted in the Microsoft [package repository](#)

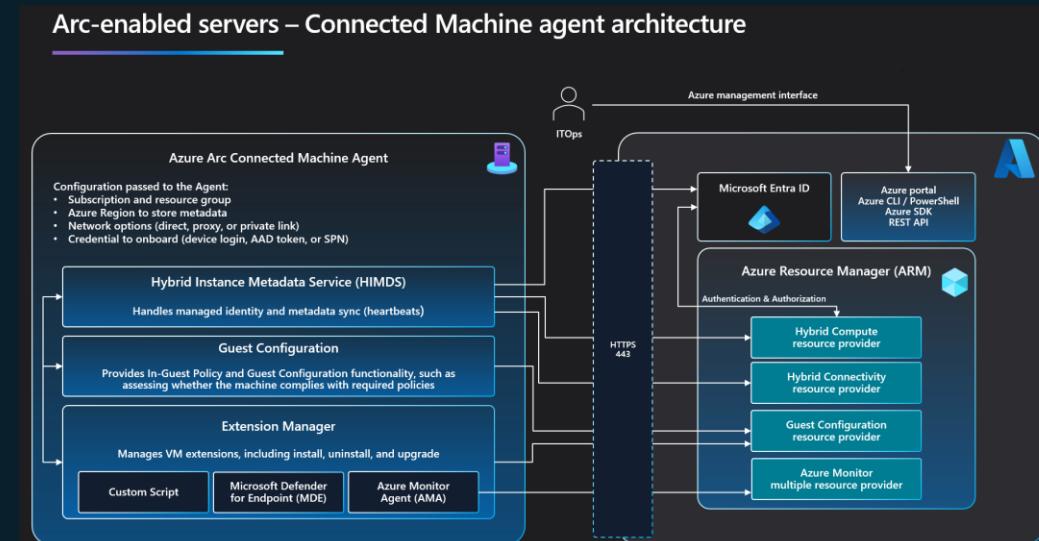
Resource utilization on the server

- [Overview of the Azure Connected Machine agent - Azure Arc | Microsoft Learn](#)

Metadata captured (depends on the extension as well)

- [Overview of the Azure Connected Machine agent - Azure Arc | Microsoft Learn](#)

Management: [Manage and maintain the Azure Connected Machine agent - Azure Arc | Microsoft Learn](#)



# azcmagent CLI

Goal: configure, manage, and troubleshoot a server's connection with Azure Arc.

## Important features:

- Tear-0 assets (e.g., domain controllers): [Security overview - Azure Arc | Microsoft Learn](#)
  - Disabling remote access capabilities
  - Setting an extension allowlist for the extensions you intend to use, or disabling the extension manager if you are not using extensions
  - Disabling the machine configuration agent if you don't intend to use machine configuration policies
- Allow/blocklist for unwanted extensions
- Connectivity configuration

More information: [azcmagent CLI reference - Azure Arc | Microsoft Learn](#)



# Key benefits

Why would customers use this?



# Visibility across environments

## Key benefits

# Visibility across environment

Track resource deployment, at scale, across environments

- Azure Resource Graph
- Azure Workbooks
- PowerBI

Subscription: Azure LAB

Main Dashboard

Server Name	Connection Status	Last Status Change	Days Offline	Agent Version	Operating System	Operating System Edition	Operating System Version	Resource Group
CM01	⚠️ Disconnected	11.12.2024 07:55	0	1.38.02612.1523	Windows	Windows Server 2022 Standard	10.0.20348.2322	rg-prod-it-arc-we
DC01	⚠️ Disconnected	11.12.2024 07:29	0	1.47.02843.1892	Windows	Windows Server 2022 Standard	10.0.20348.2582	rg-prod-it-arc-we
MACHINECONFIG	⚠️ Disconnected	22.11.2024 08:28	19	1.46.02809.1841	Windows	Windows Server 2022 Standard	10.0.20348.2700	rg-prod-it-arc-we
WIN-SEEV4E0OMP	⚠️ Disconnected	2.12.2024 17:01	9	1.47.02843.1892	Windows	Windows Server 2025 Standard	10.0.26100.2314	rg-prod-it-arc-we
AZ-UPDATE-MGMT-1	⌚ Expired	14.08.2024 09:48	119	1.40.02669.1635	Windows	Windows Server 2022 Standard	10.0.20348.2461	rg-prod-it-arc-we

Agent Versions



Operating Systems



Microsoft Azure

SQL Server Instances

Instances	Dbs	Offline	Size(MB)	Type
azmssql01	5	5	0	Azure SQL Manage Instance
sqlserver2022demo	2	2	0	Azure SQL Server On VM
WIN-TORIHFQGLQ9 SQL EXPRESS	5	1	38	Arc Enable SQL Server
WIN-UATUOK38PK	5	0	38	Arc Enable SQL Server
WIN-TORIHFQGLQ9	6	0	38	Arc Enable SQL Server
WN22-SQ22_001	7	0	464	Arc Enable SQL Server

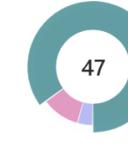
Number of Servers

Sql Server Type Distributions



Number of Databases

Databases per Type



Dbs per Servers

Servers per Server Editions



Cores Per Editions



Compatibility Mode



Defender for SQL



Encrypted

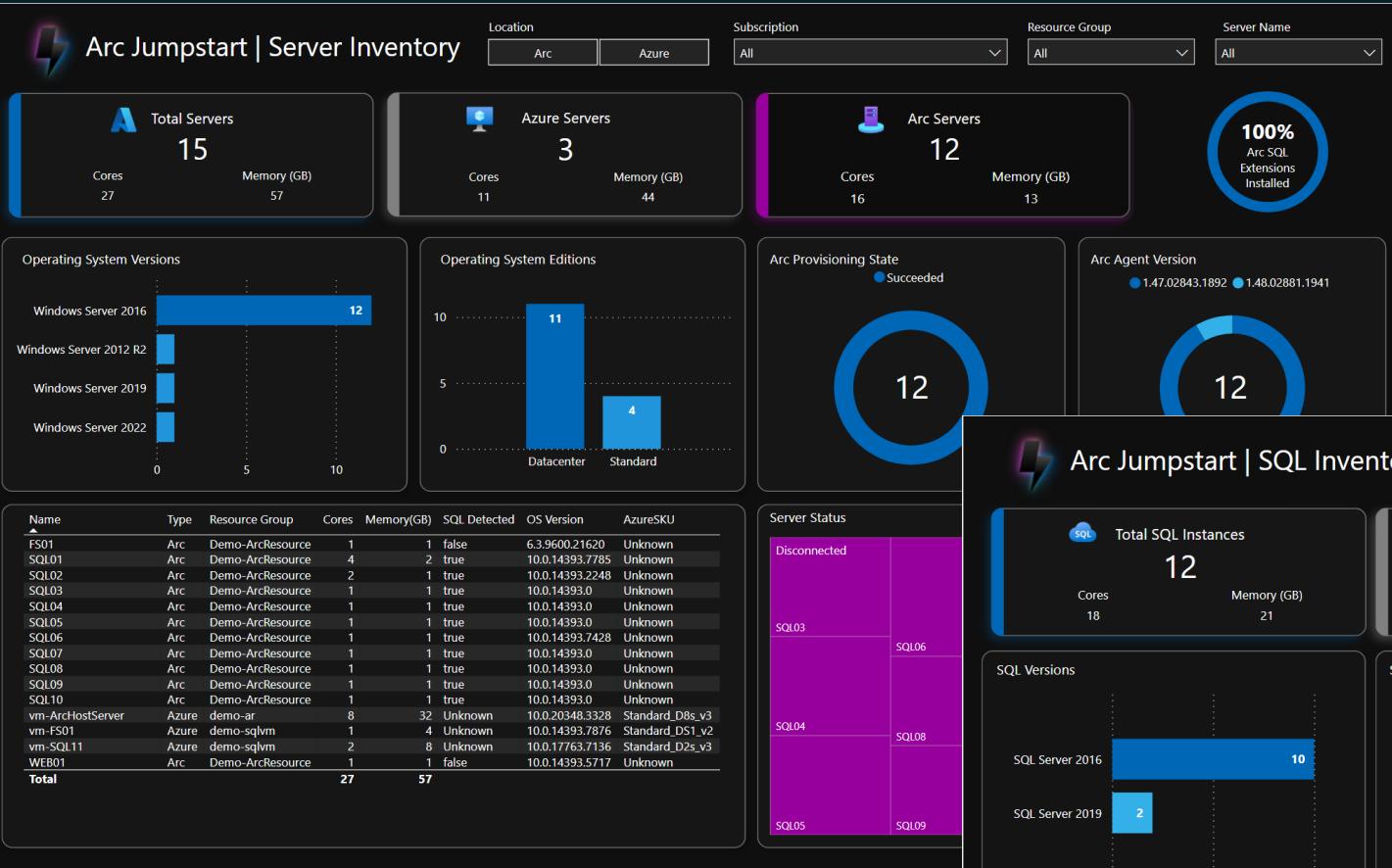


SQL Server Versions

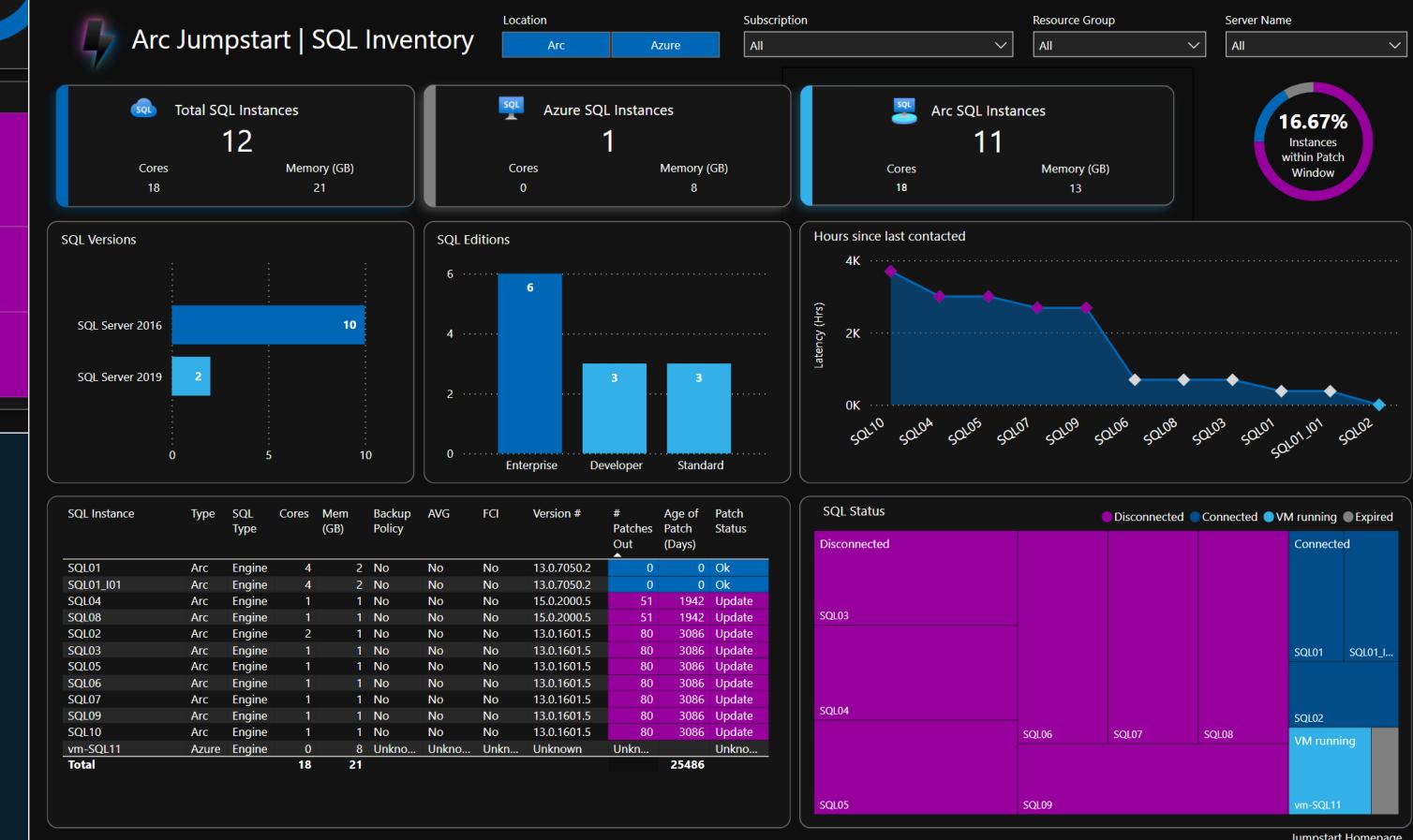




## Arc Jumpstart | Server Inventory



## Arc Jumpstart | SQL Inventory



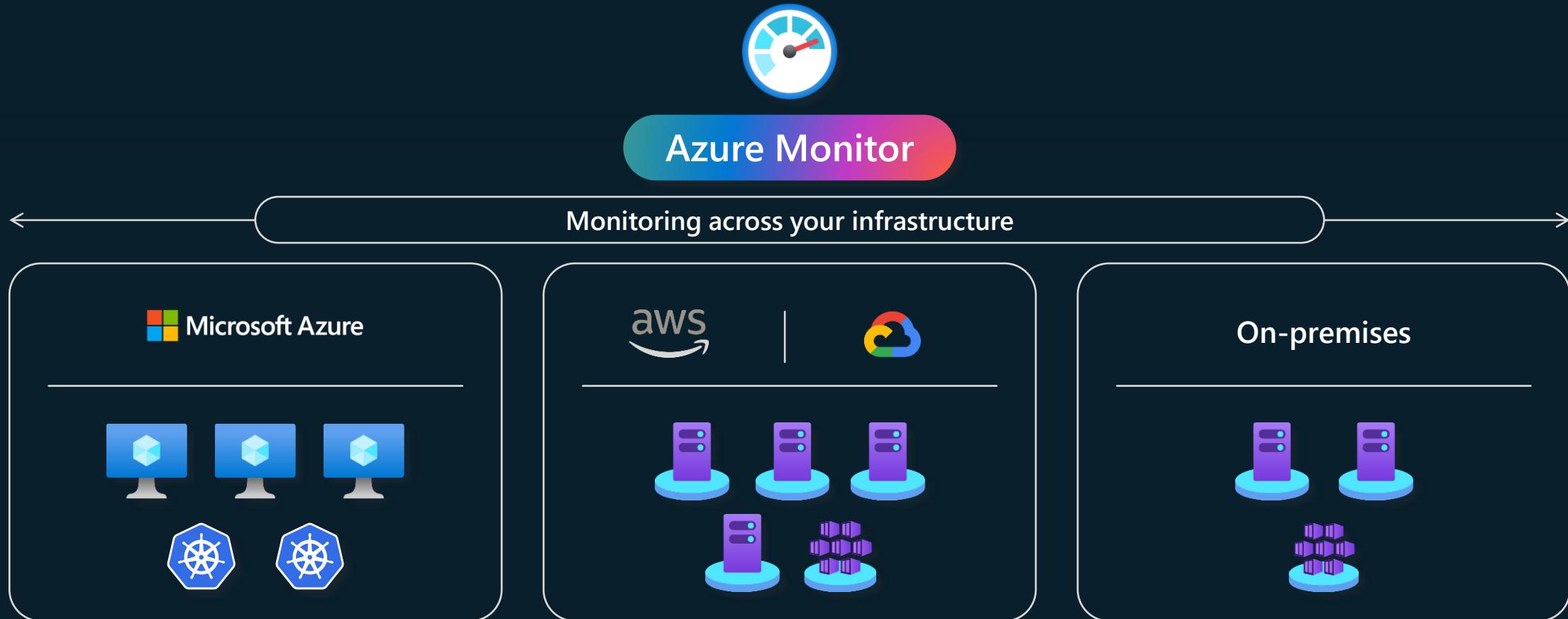


**Track health, security, and updates of your resources**

**Key benefits**

# Azure Monitor anywhere enabled by Azure Arc

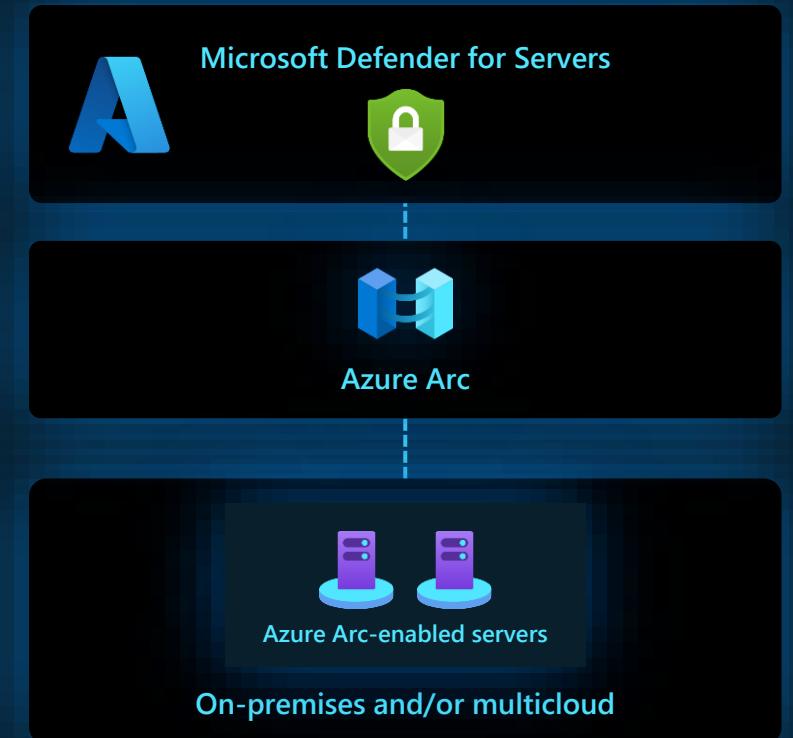
Consistent monitoring across your hybrid and multi-cloud compute



# 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, offering integrated vulnerability scanning for your connected machines
- Block malware with adaptive application controls
- Set guardrails with Azure Policy integration, server owners can view and remediate to meet their compliance



# 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

The screenshot displays the Microsoft Sentinel platform interface. On the left, the 'Incident timeline' section shows a list of alerts and detections over time, with a specific alert for 'SecurityAlert - 969...' highlighted. The 'Entities' section lists accounts and hosts, including 'pwatkins@secxp.ninja' and 'workstation6'. The 'Similar incidents (Preview)' section shows a table of recent incidents with details like severity, ID, title, and last update time.

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

# Azure Update Manager

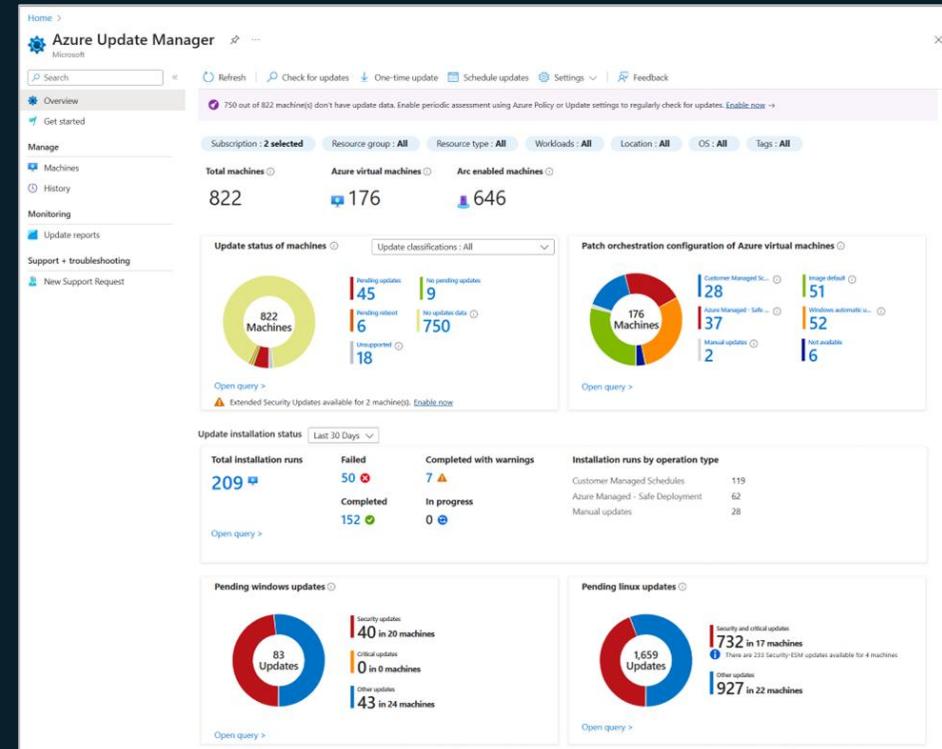
Centrally manage updates, patches, and compliance at scale

## Comprehensive Patching

- Reduce complexity and streamline patch management across diverse environments.
- Centralized control, delegation, and granular access at a per resource level for efficient patch deployment with integrated Role-Based Access Control.

## Intelligent Automation and Scheduling

- Automate and orchestrate securely with customized, defined maintenance schedules, hot-patching, and auto-patch.
- Sync patch cycles to common update schedules like Patch Tuesday



## Single pane of glass for hybrid and multi-cloud with Azure Arc

- Support for Azure VMs, Arc-enabled infrastructure
- Integrates with existing 3<sup>rd</sup> party Patch management tools



# Demo

Onboarding

Portal experience

azcmagent CLI

**Thanks for your attention!**

Any questions?



LinkedIn