PowerShell Conference Europe

Unleashing the Power of Hybrid Management with PowerShell & Azure Arc

Jan Egil Ring

MALMÖ 25

Many thanks to our sponsors:

Jane Street

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PS /> Get-Speaker
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Introduction

Azure Arc overview

Customer challenges when hybrid

Complexity

"I need to have health visibility in a single pane of glass to all my existing and future infrastructure and applications."

Compliance

"I need to manage security and incident management across my public cloud and datacenter assets."

Inconsistency

"I want my on-prem skills to work in the cloud, and my cloud skills to work on-prem."

Regulation

"Our DB layer must remain on-premises due to sensitive patient data and data availability needs."

Latency

"We can't take a dependency on the internet. If we lose connectivity, we still want to be able to access the data."

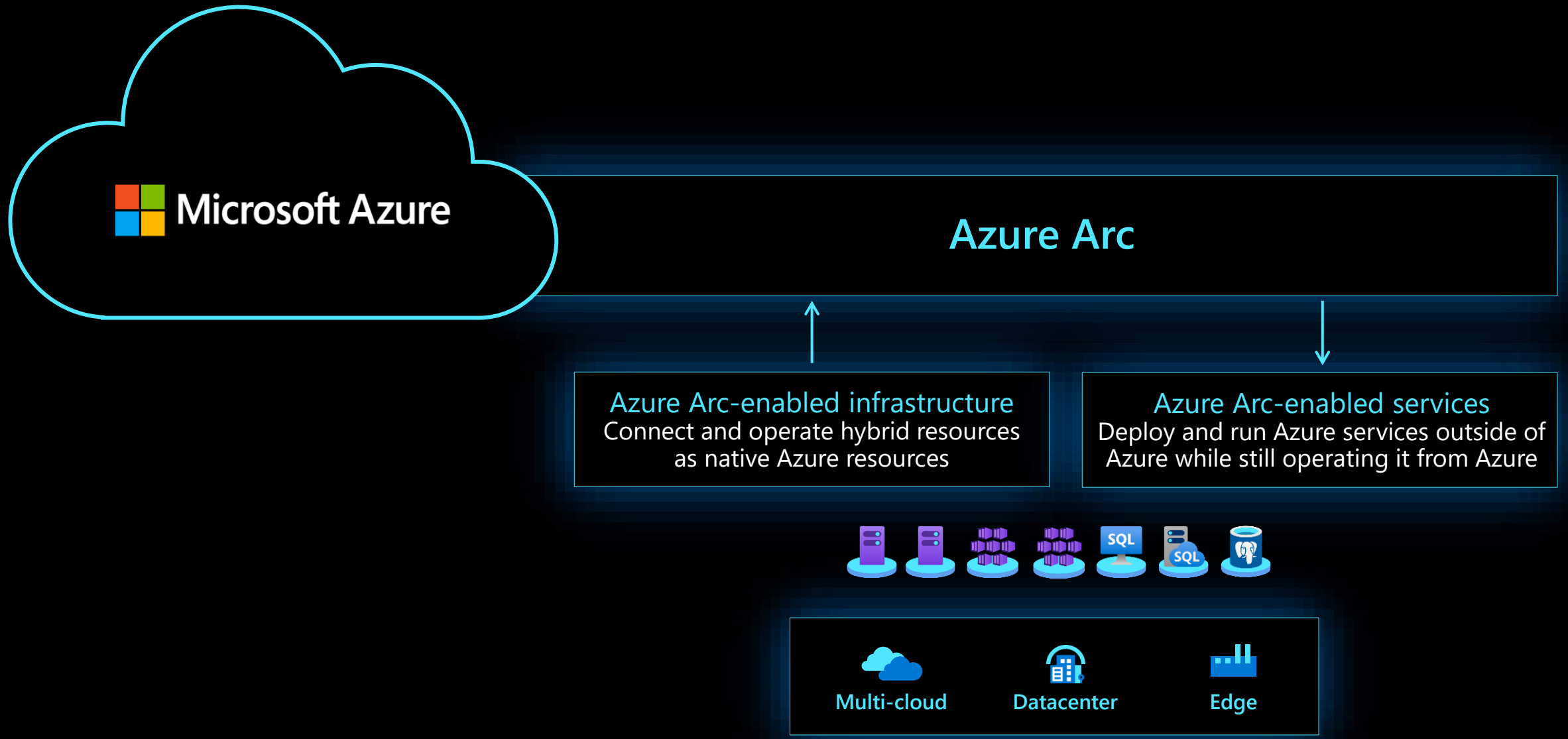
Legacy

"Our older systems take too much maintenance. We want evergreen technology and to pay for it like a utility."

Multi-cloud

Datacenter

Edge


Microsoft Azure
Azure Arc
Azure Arc-enabled infrastructure
Connect and operate hybrid resources as native Azure resources
Azure Arc-enabled services
Deploy and run Azure services outside of Azure while still operating it from Azure
SQL
SQL
Multi-cloud
Datacenter
Edge

Arc-enabled Infrastructure

Consistent governance, security, and visibility for your hybrid and multi-cloud compute.

Microsoft Defender

Azure Monitor

Microsoft Sentinel

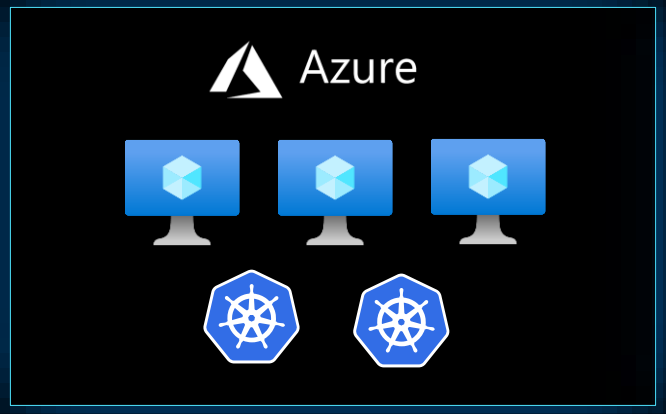
Azure Policy

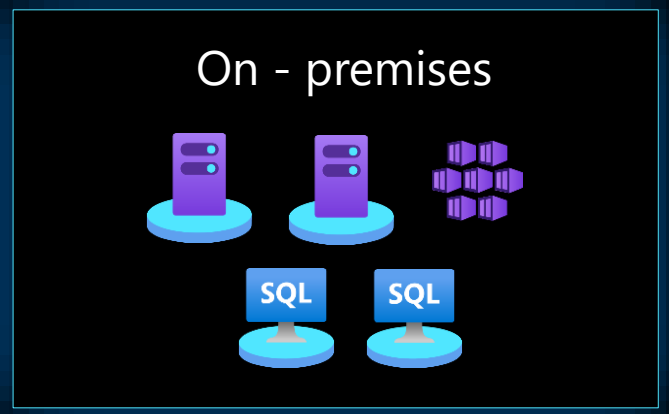
Update Manager

Inventory Management

Azure Automanage

Azure Services across your infrastructure





Arc Jumpstart

Extensive. Automated. Open-Source. Community Driven.

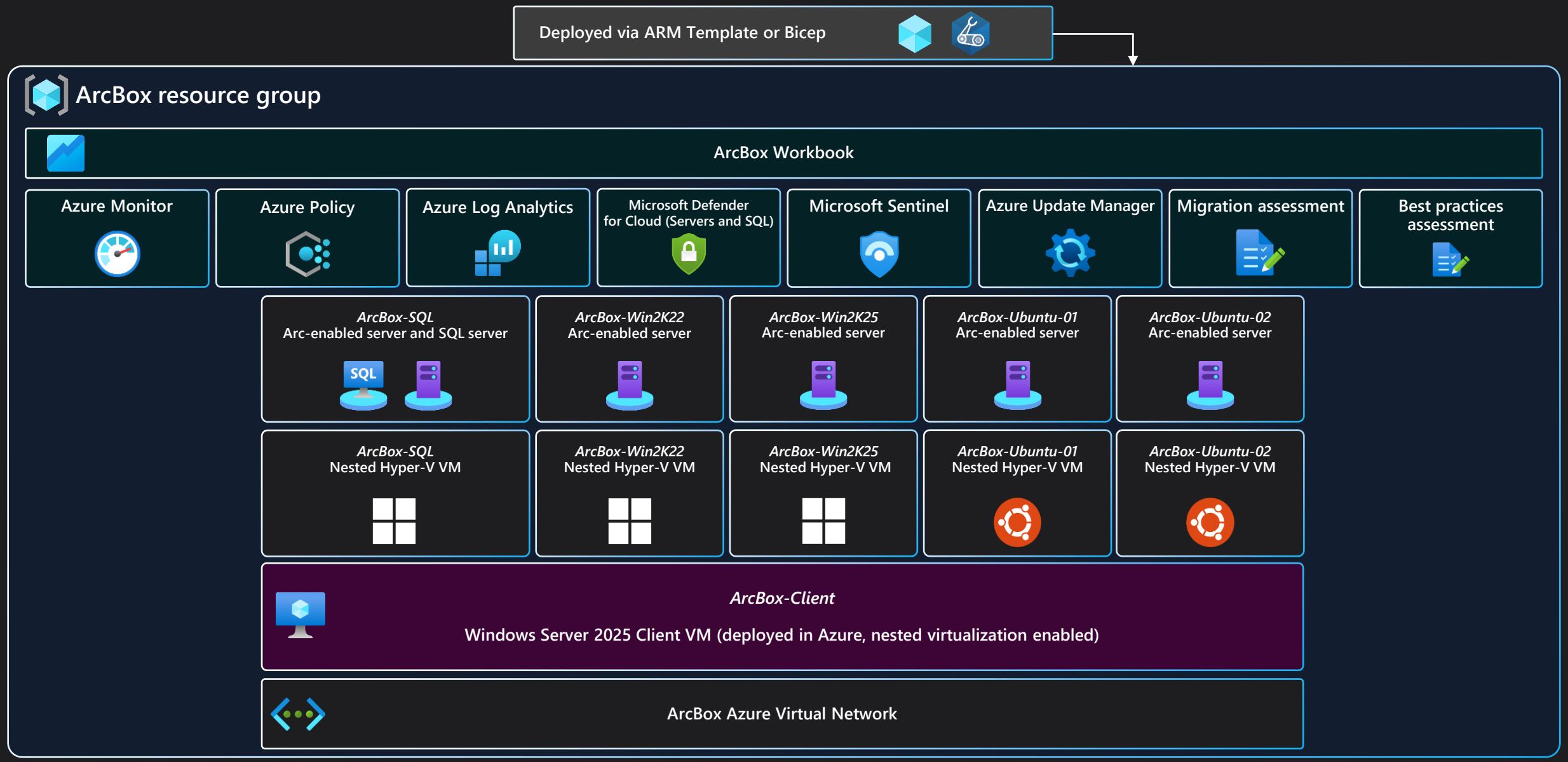
aka.ms/ArcJumpstart

Jumpstart

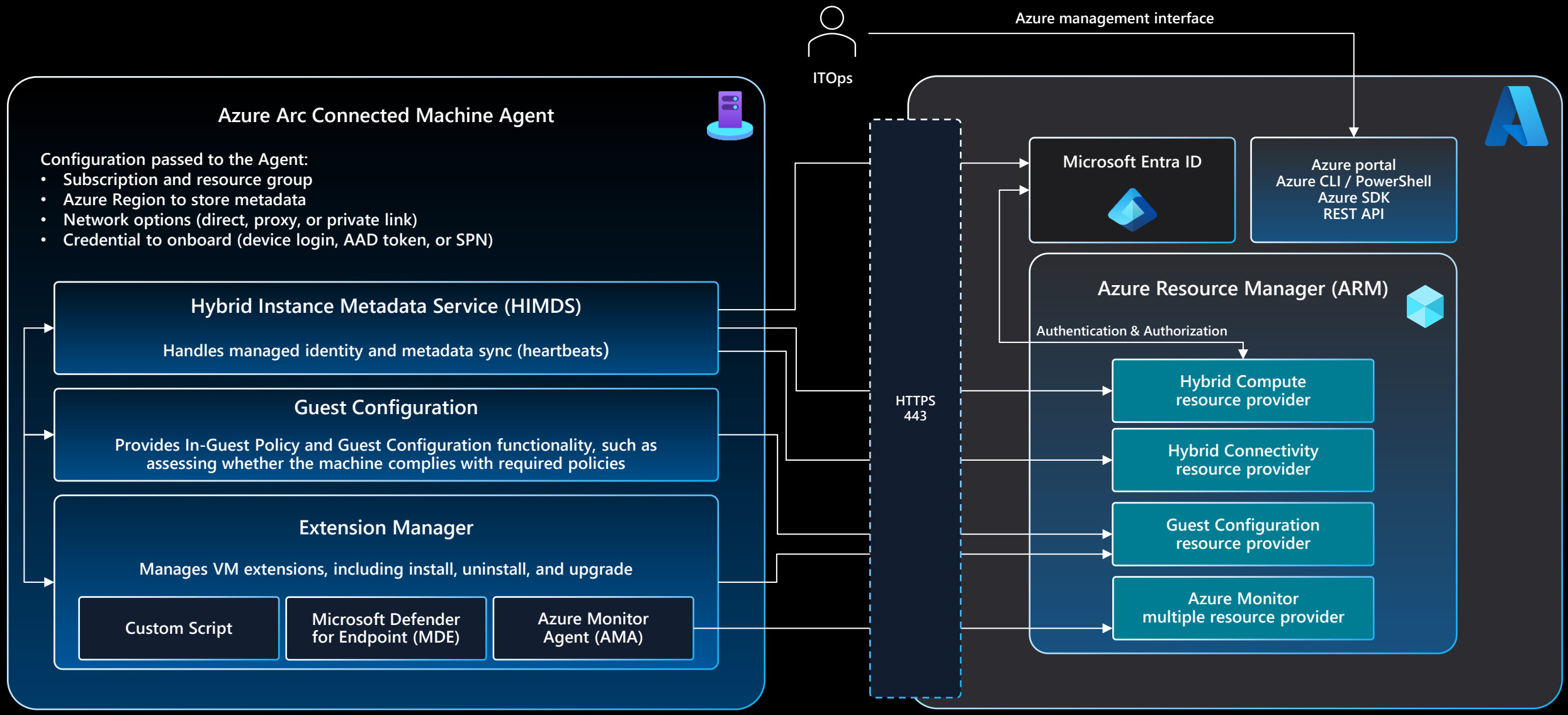
ArcBox

Fully automated Azure Arc sandbox

Arc Jumpstart – ArcBox ITPros architecture

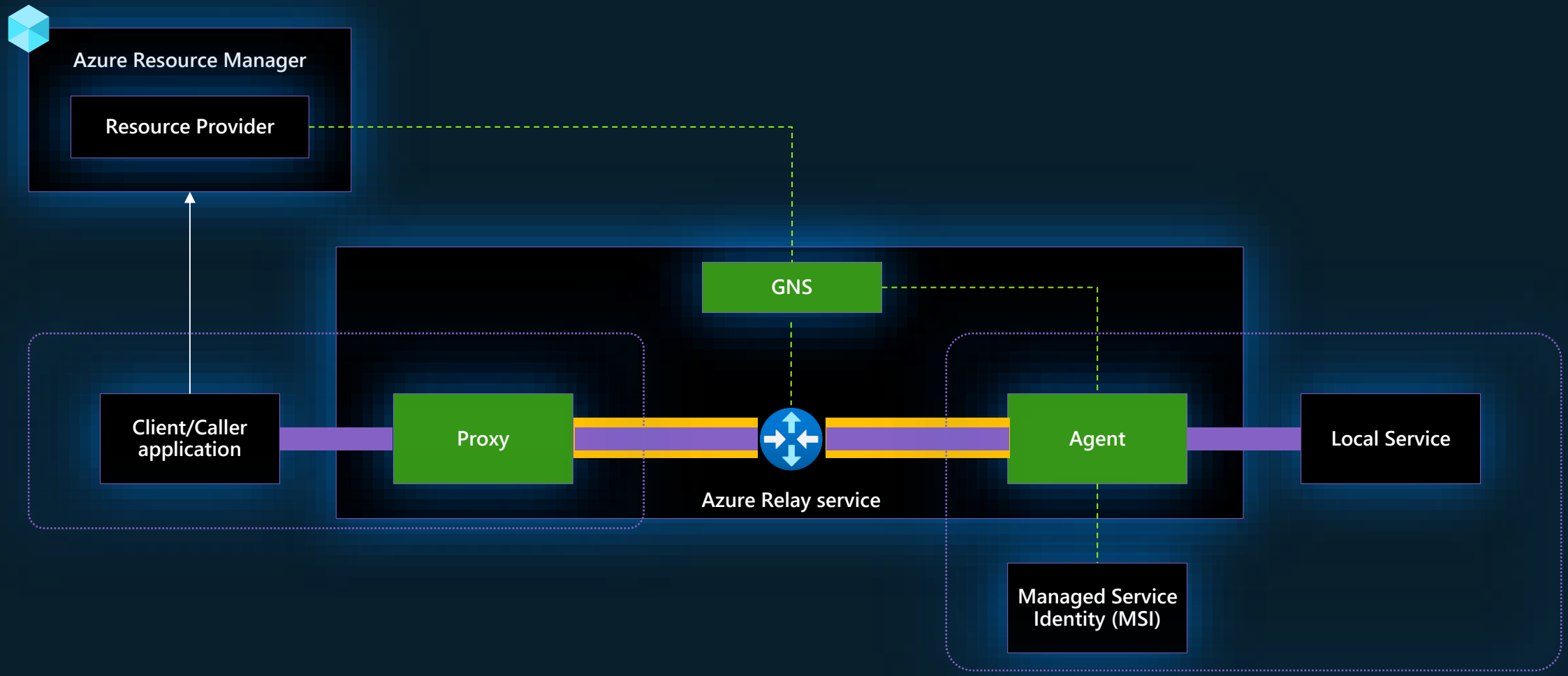


Arc-enabled servers – Connected Machine agent architecture



Azure Arc-enabled servers

SSH access - Architecture



Demos

We love Demos!

ArcBox-Win2K25 | Connect

Machine - Azure Arc

Search

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Resource visualizer
- Settings
  - Connect
  - Security
  - Extensions
  - Properties
  - Locks
- Operations
- Licenses
- Windows management
  - Windows Admin Center (preview)
  - Azure Site Recovery configuration (preview)

Connect with SSH

Enter your authentication details below to connect to the server via SSH. Learn more

Authentication type

- Microsoft Entra
- SSH key based authentication
- Password

Username *

SSH private key location

- Azure Key Vault
- Insert manually

SSH private key *

Azure doesn't store the SSH private key.

Use a SSH certificate key

Connect in browser

Alternatively, run the following command using any SSH client of your choice that has Azure CLI or PowerShell.

```
az ssh arc --subscription "5d743864-3e9e-4dc1-b446-1982647eeaf8" --resource-group "Student02" --name "ArcBox-Win2K25" --local-user $username --private-key-file $privateKeyFile
```

Hybrid runbook workers

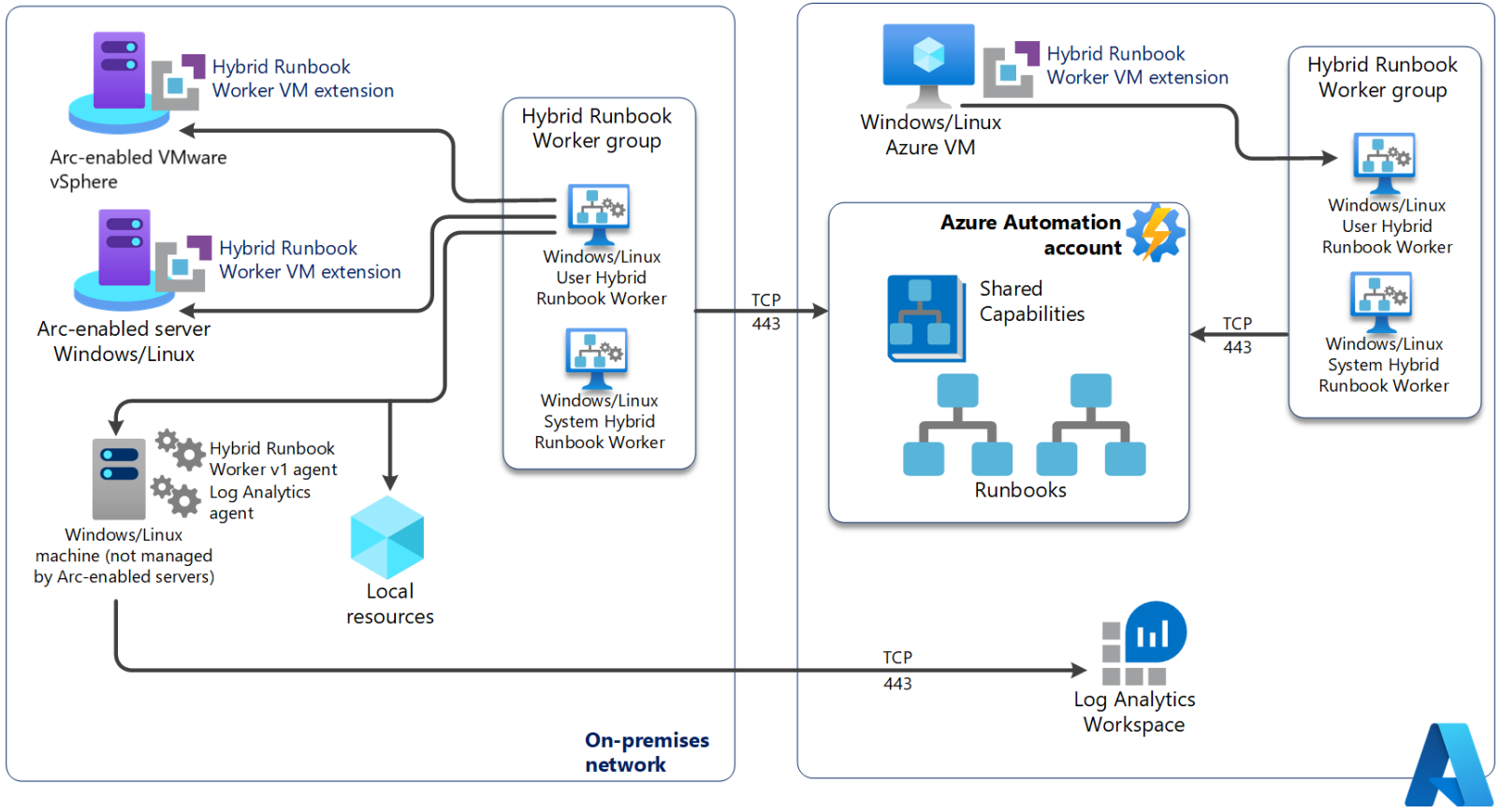
Automate maintenance tasks
- Remediate low disk space
- Restart services/servers
- Orchestration across machines

Automate business workflows
- Joiners/movers/leavers

Automate tasks in service catalog
- Provision on-prem virtual machines

Respond to Azure Monitor alerts
- Automatic remediation

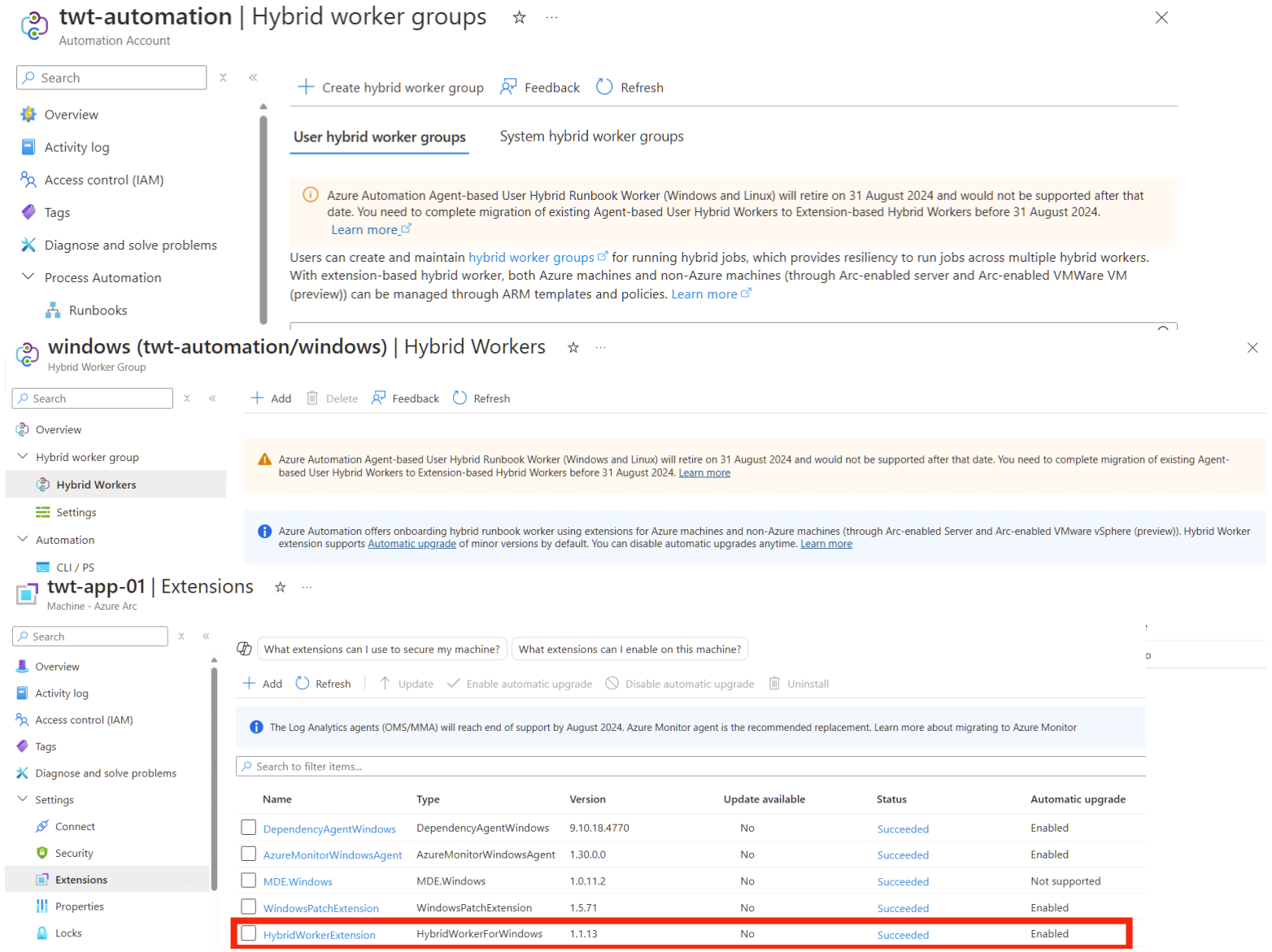
Integration scenarios
- Event Grid – trigger on SFTP BlobCreated



Run automation runbooks on your Azure Arc-enabled servers

How to prepare your Arc-enabled servers:

- Install Hybrid Worker extension
- Add to Hybrid Worker Group
- Ready to execute runbooks



Machine Configuration

Audit and configure OS, app, or workload level settings as code

Dynamically assign configurations to Windows & Linux machines running in Azure and anywhere else via Arc-enabled Servers

Continuous auditing and enforcement of configuration settings with at scale and granular reporting

Deploy built-in content provided by Microsoft including security best practices within the Azure Security Benchmark

Bring your own best practice configurations into Azure through custom artifact deployment and PowerShell DSC

Management

Deploy data-plane level policies at-scale through Azure policy leveraging familiar scoping

Develop configuration as code pipelines leveraging ARM, Bicep, Terraform

https://dsccommunity.org

Linux

Open Source: nxtools - making managing Linux easier for PowerShell users

A collection of class-based DSC Resources for commonly used Linux actions & built-in machine configuration packages

Built in Resources

User and Group Management

- Create & delete local users
- Create & delete local groups
- Set properties of existing groups

File System Operations

- Set, remove, or replace file content
- Adjust file ownership
- Compare file permissions
- Set file permissions

Package Management

- List
- Search
- Install
- Uninstall

Service Management

- Start
- Stop
- Restart
- Remove
- Add

Archive Operations

- Compress archives
- Extract archives

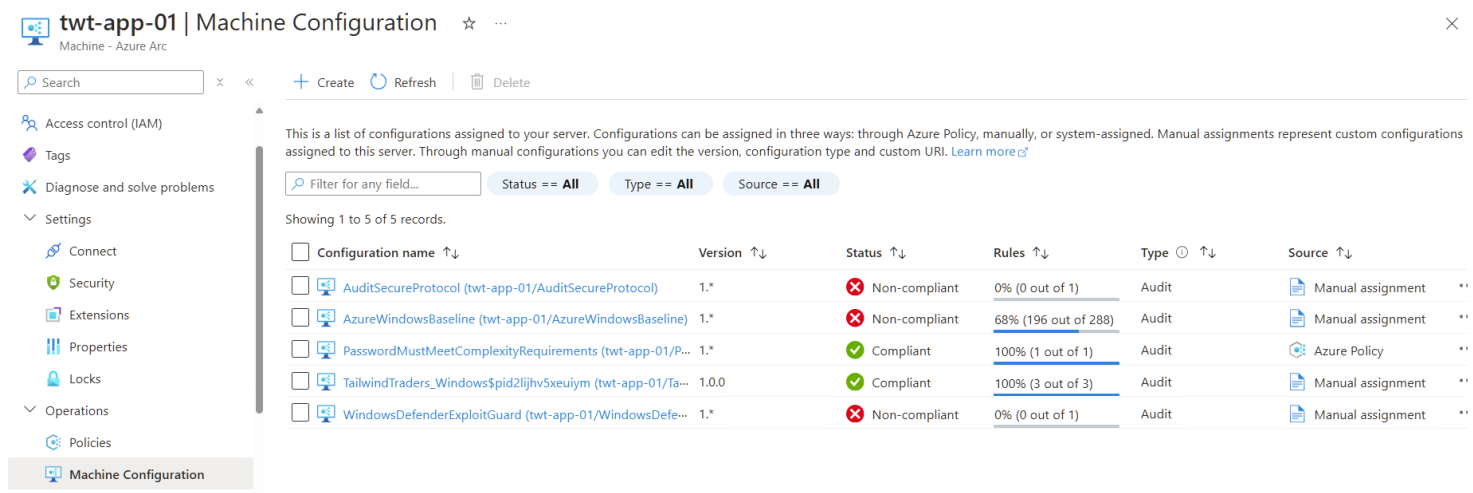
Full Distro Support

PUBLISHER	NAME	VERSIONS
Amazon	Linux	2
CloudLinux	Alma Linux	9
Canonical	Ubuntu Server	14.04 - 22.x
Credativ	Debian	8 - 10.x
Mariner	Mariner	1-2
Microsoft	Windows Server	2012 - 2025
Microsoft	Windows Client	Windows 10/11
Oracle	Oracle-Linux	7.x - 8.x
OpenLogic	CentOS	7.3 - 8.x
Red Hat	Red Hat Enterprise Linux*	7.4 - 9.x
Rocky Enterprise	Rocky Linux	9
SUSE	SLES	12 SP3-SP5, 15.x

https://github.com/azure/nxtools

How to create and assign a custom Automanage Machine Configuration to your Arc-enabled servers

- Create PowerShell Desired State Configuration (DSC) configuration
- Create package artifact
- Create Azure Policy definition
- Create Azure Policy assignment



Next steps

Explore hybrid scenarios at aka.ms/ArcJumpstart

Related sessions:

- Migrating to PowerShell 7 for IT pros – Tuesday @ 13:00
- SSH and SSH Arc: What's new and next – Thursday @ 13.00
- Secure your cloud environment with all-new Azure Policy and Machine Configuration features! Thursday @ 13.00

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Q&A

15 minutes

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