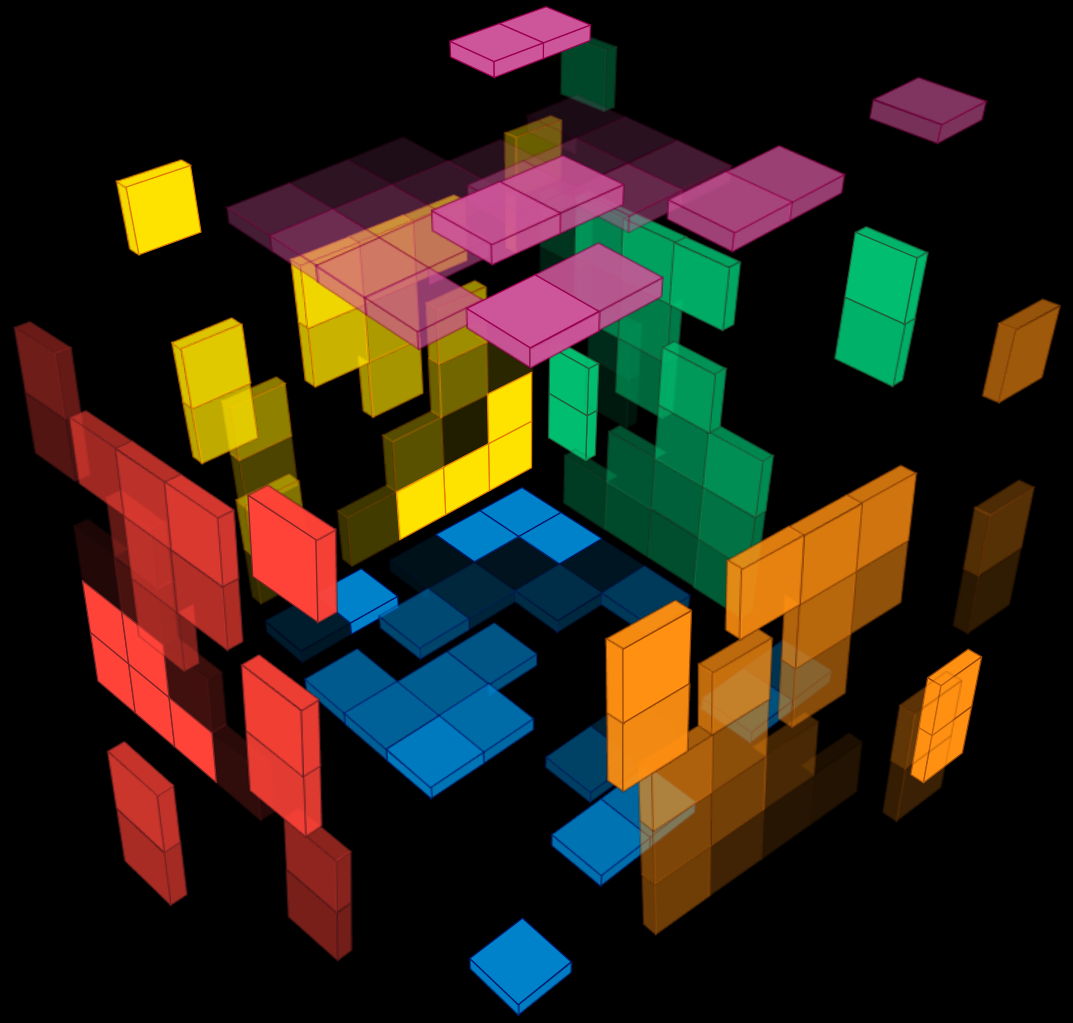
Microsoft

Run Azure Data Services Anywhere with Azure Arc



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Microsoft

What is Azure Arc?

Technology environments and application requirements are evolving

Single control plane with Azure Arc

Operations and governance | Security | Innovation | Meet regulatory requirements

100's–1,000's of apps

- VMs
- Databases
- Containers
- Serverless

.NET, JS, Python, Java, GO, php

Diverse infrastructure

- Datacenters
- Hosters
- Branch offices
- OEM hardware
- IoT devices
- Edge

Hybrid & Multi-Cloud

Microsoft Azure

aws

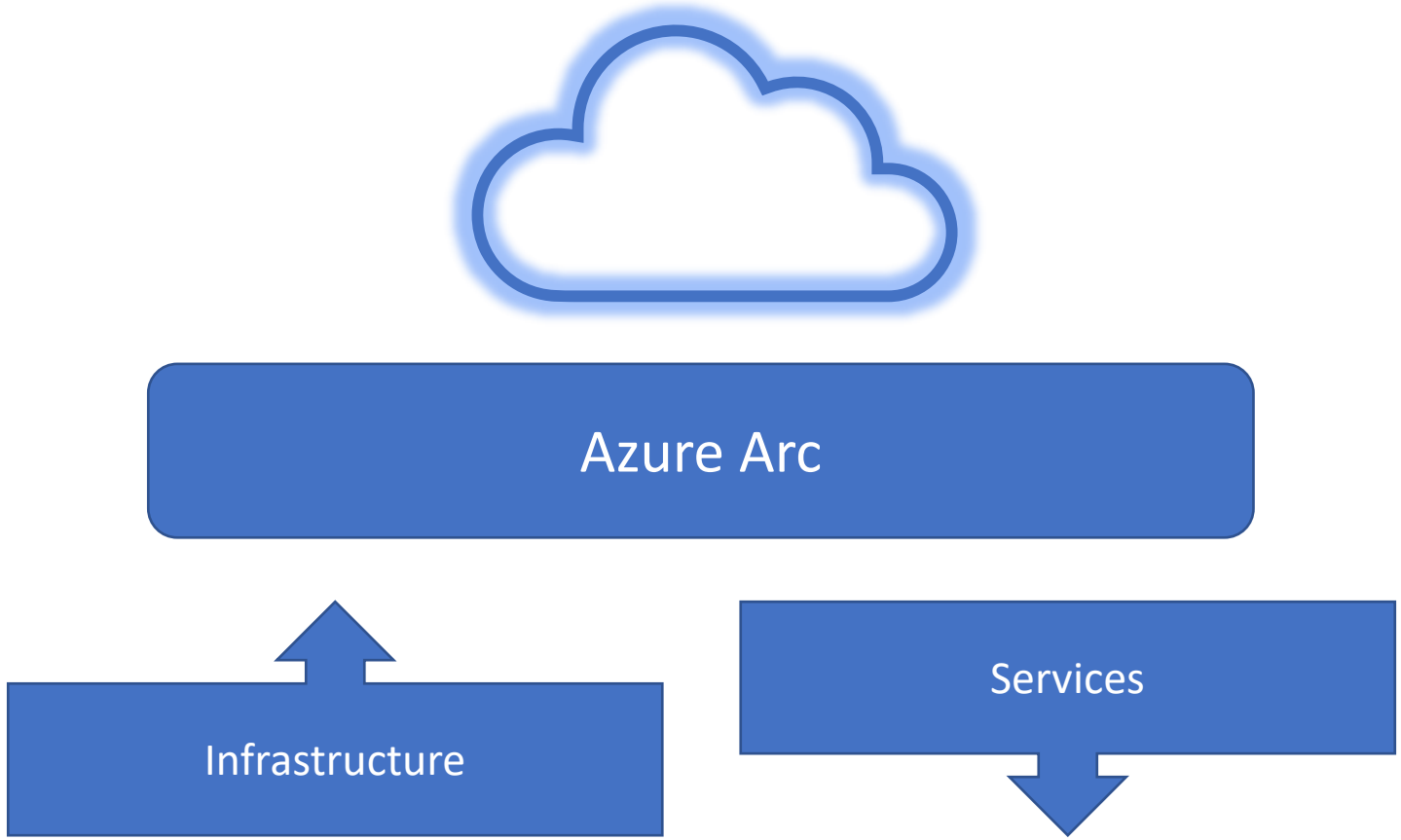
Google Cloud

Alibaba Cloud

vmware

ORACLE

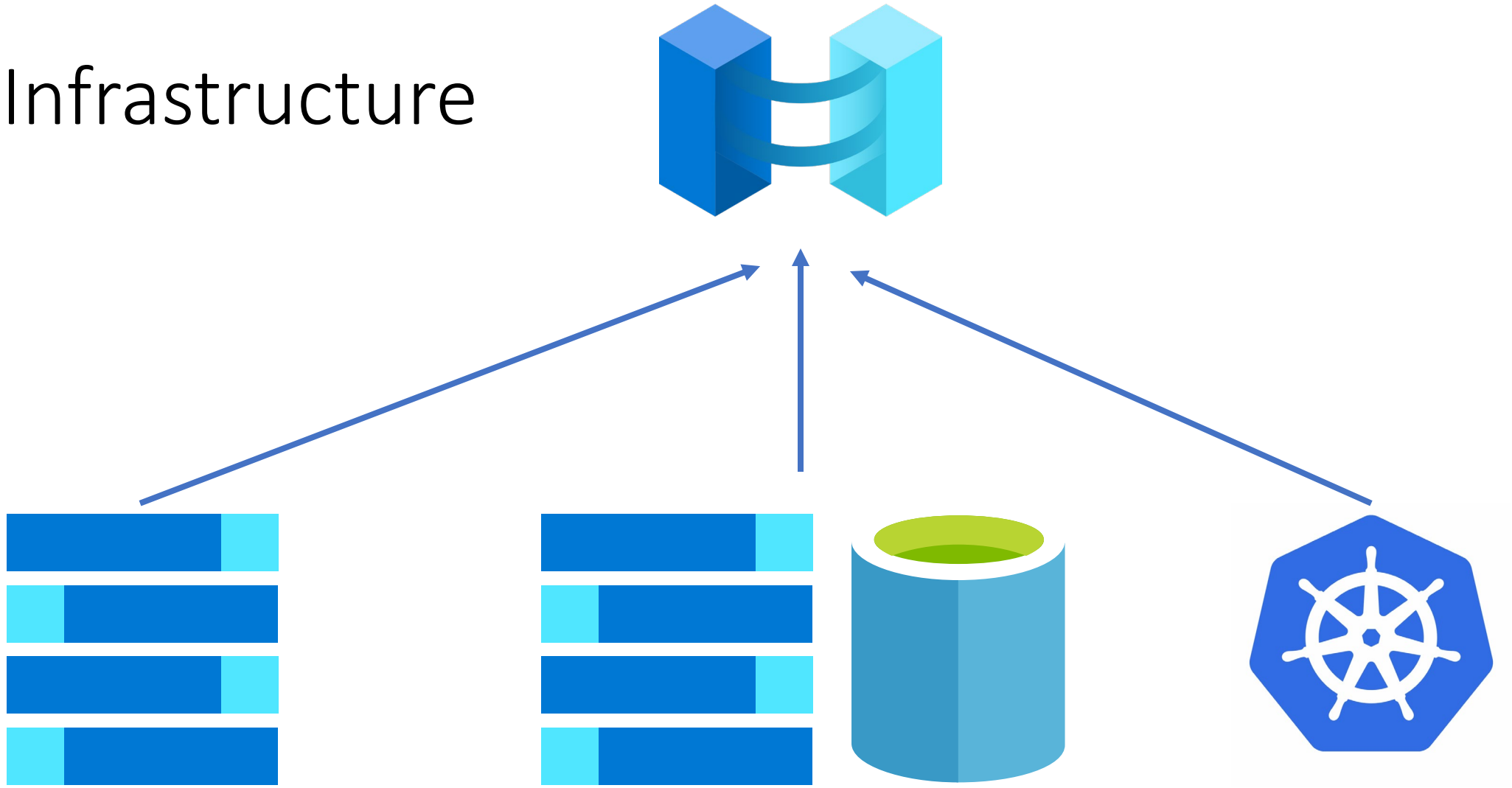
IBM Cloud


Azure Arc
Infrastructure
Services

Azure Arc Infrastructure

Make your existing resources visible and manageable in Azure

Infrastructure



Azure Arc enabled-servers

SQL Server on
Azure Arc enabled-servers

Azure Arc enabled-
Kubernetes

Azure Arc-enabled servers

- Physical or virtual
- Windows or Linux
- View your server in the Azure portal
  - Put in a resource group
  - Apply tags
- Onboard to Azure services
  - Azure Policy
  - Azure Security Center
  - Azure Sentinel
  - Azure Monitor

SQL Server on Azure Arc-enabled servers

- Physical or virtual
- Windows or Linux
- View your server in the Azure portal
  - Put in a resource group
  - Apply tags
- Onboard to Azure services
  - Azure Security Center
  - Azure Sentinel
  - Azure Monitor
  - SQL Assessment

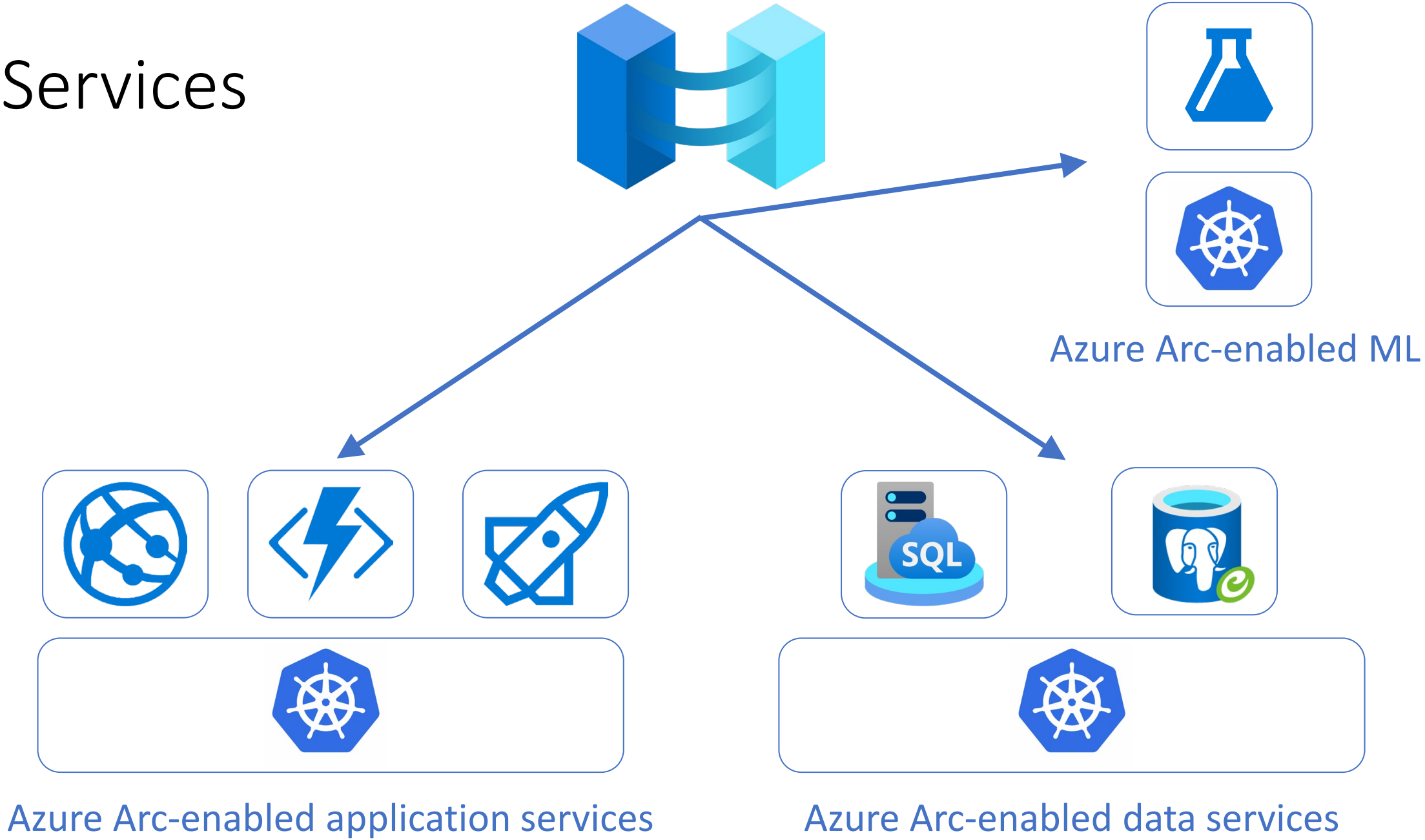
Azure Arc-enabled Kubernetes

- Any Cloud Native Computing Foundation (CNCF) certified Kubernetes cluster
- View your cluster in the Azure portal
  - Put in a resource group
  - Apply tags
- Onboard to Azure services
  - Azure Policy for Kubernetes
  - Azure Monitor
  - Azure Defender for Kubernetes
- Use GitOps

Services

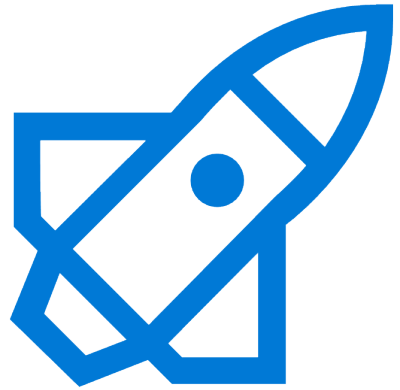
When you can’t move to Azure, bring Azure to you

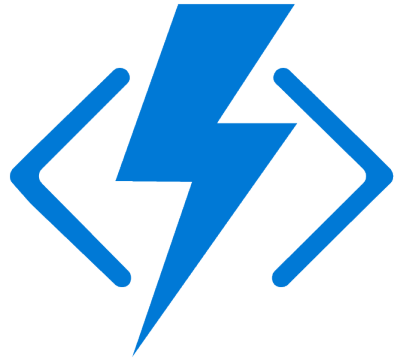
Services


SQL
Azure Arc-enabled ML
Azure Arc-enabled application services
Azure Arc-enabled data services

Azure Arc-enabled application services

- Build on an Azure Arc-enabled Kubernetes cluster
- Deploy web apps, function apps, and logic apps to a “custom location”, which functions like an Azure region – even if it’s on-premises or in a cloud
- Public Preview





Azure Arc-enabled Machine Learning

- Build on an Azure Arc-enabled Kubernetes cluster
- Configure and use Azure Kubernetes Service or Azure Arc-enabled Kubernetes clusters to train, inference, and manage machine learning models in Azure Machine Learning
- Public Preview

Azure Arc-enabled data services

- Build on an Azure Arc-enabled Kubernetes cluster
- Deploy a data controller in direct or indirect connected mode
- Deploy Arc-enabled SQL Managed Instance or PostgreSQL
  - PostgreSQL is a community version

Use cases for Azure Arc-enabled data services

Run on-premises for evergreen features

- No more patches, no more upgrades.

Run on-premises for data sovereignty

- The cluster storage is provisioned where you want it.

Run on-premises for a period of time to evaluate, then migrate to Azure

- Fully tested and comfortable.

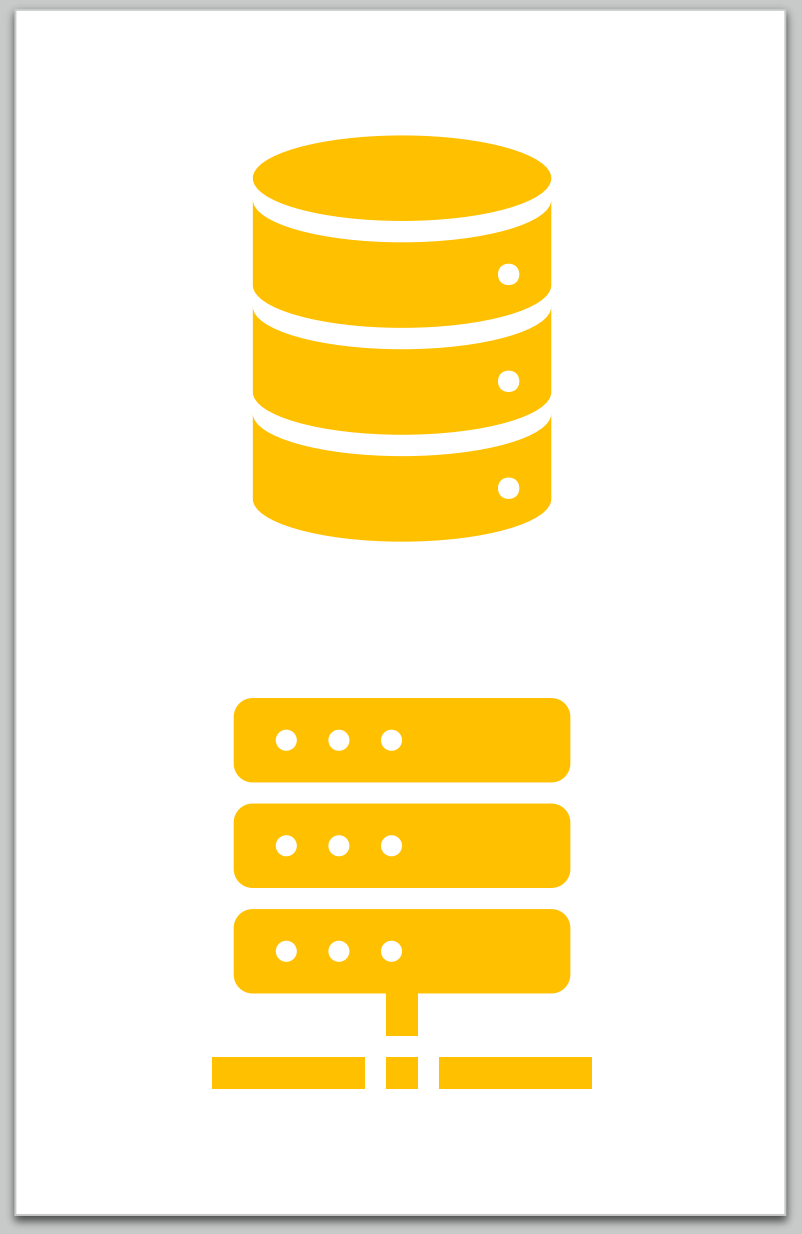
Run compute on-premises and in any cloud, and have the same data service in all of them for data processing

- Get the same consistent engine and experience regardless of where your compute and data sits.

Drilldown:
Azure Arc-enabled Data Services

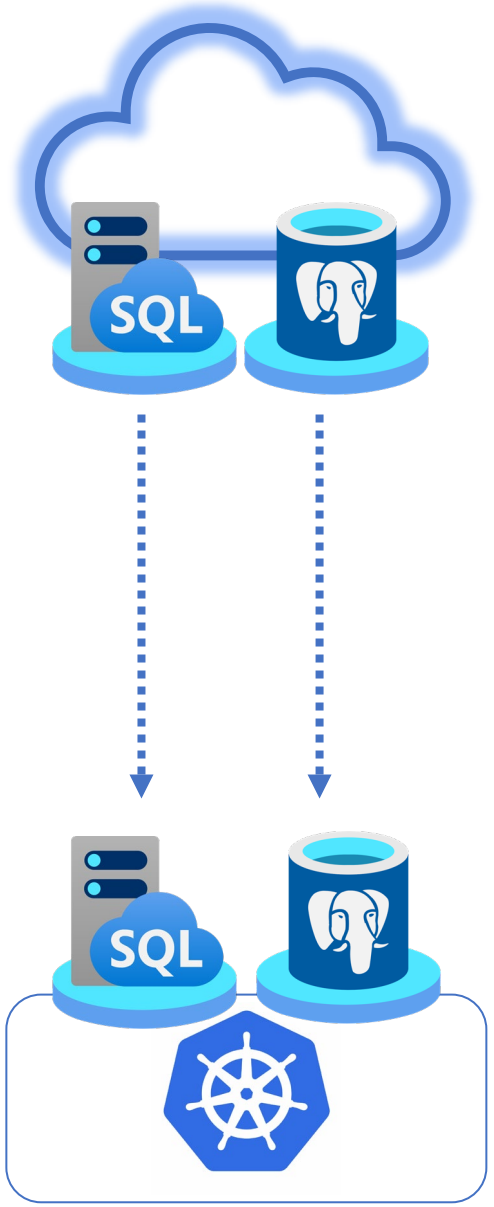
Your company chooses the infrastructure

- Choose compute and storage on-premises or in a public cloud
- Provision any amount and type of CPU, memory, and storage you want
- Your admins will configure Kubernetes their way with their tools



You’re getting an Azure service

- Automatic backups – no need to schedule
- Point in time restores – no determining which chain of backups to apply
- High Availability automatically deployed
- Upgrades available without major version changes
- Scalability
- Cloud billing model



Easy to deploy and scale

Quick deployments

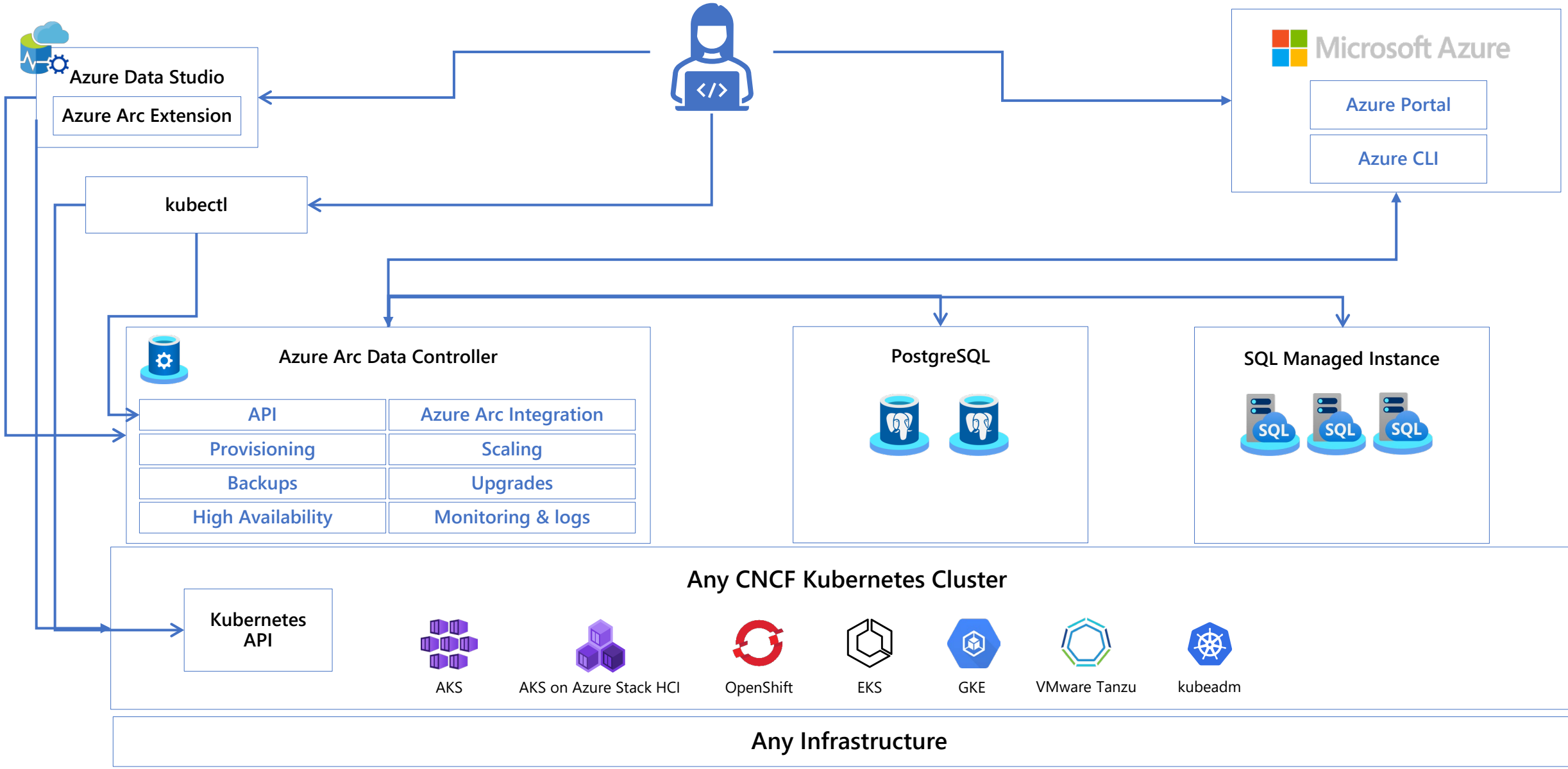
Minutes, not hours

Self-service deployments

Once a data controller is provisioned, developers can use familiar tools to deploy Managed Instance and Postgres

Scale up and down

Azure Arc-enabled data services architecture



You use familiar tools to connect and manage

Azure Arc	
kubectl, OC, other Kubernetes-native tools	
Azure CLI (az arcdata)	
Azure Portal	
Arc-enabled SQL Managed Instance	**Arc-enabled PostgreSQL**
Azure CLI (az sql mi-arc)	Azure CLI (az postgres arc-server)
Azure Portal	Azure Portal
sqlcmd	psql
Azure Data Studio	Azure Data Studio
SQL Server Management Studio	Any tool that works to connect to PostgreSQL

There’s a consistent feature set between Azure and Arc

	Azure SQL MI	Azure Arc-enabled SQL MI
Transparent database encryption	•	•
Agent	•	•
Extended Events	•	•
Query Store	•	•
Columnstore indexes	•	•
Compression	•	•
Partitioning	•	•
High Availability	•	•
Read scale out	•	•
Active Directory authentication	•	• (Preview)

There’s a consistent feature set between Azure and Arc

	Azure PostgreSQL*	Azure Arc-enabled PostgreSQL
PostgreSQL version	13	14
Extensions available to be used	•	•
Data types – built in and custom	•	•
Range partitioning	•	•
List partitioning	•	•
Password authentication	•	•
Active Directory authentication	•	On roadmap
Managed backups	•	On roadmap
High availability through replication	•	On roadmap

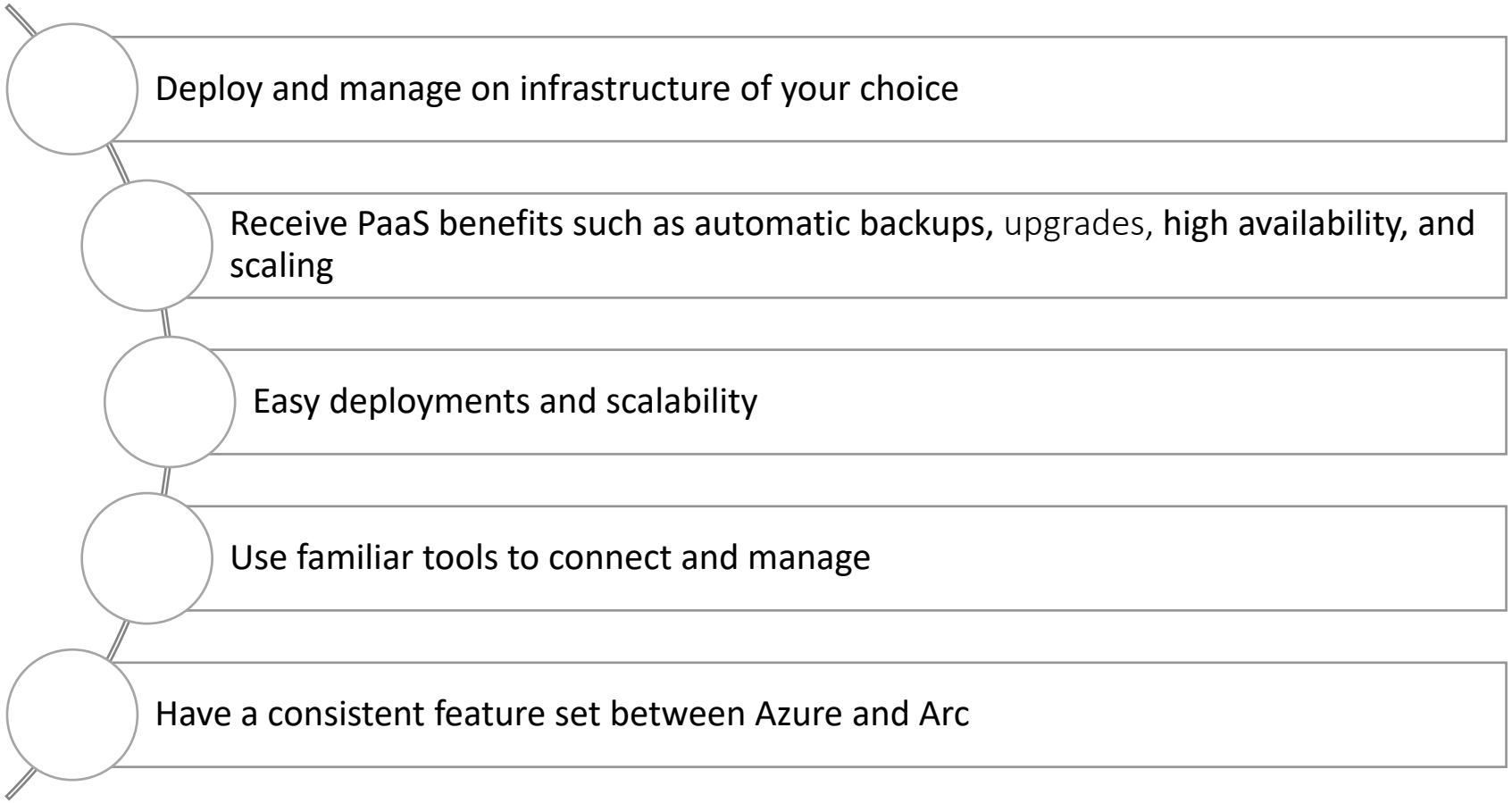
* Azure PostgreSQL Flexible Server

You have connectivity choices

	Indirectly connected	Directly connected
Requires constant connection to Azure		• * Interruptions will be resumed
Deployment and management tools	Kubernetes-native, CLI, Azure Data Studio	Kubernetes-native, CLI, Azure Data Studio, Azure Resource Manager APIs, Azure Portal
Scale up/down	•	•
Backups and Point-in-time restore	•	• In roadmap: send backups to Azure Backup for long-term retention
Use Azure RBAC		•
View data controller inventory in Azure Portal	* After uploading metrics	•
View data services inventory in Azure Portal	* After uploading metrics	•

Summary

Azure Arc-enabled data services benefits



Learn more about Azure Arc-enabled Data Services

- Microsoft Learn – Learning path - Manage hybrid infrastructure with Azure Arc
- Microsoft Learn – Module – Introduction to Azure Arc-enabled data services
- Book - Azure Arc-enabled Data Services Revealed
- Pluralsight - Azure Arc: The Big Picture
- Pluralsight - Azure Arc-enabled Data Services: The Big Picture
- Microsoft docs - What are Azure Arc-enabled data services?
- Azure Arc-enabled data services | Azure Arc Jumpstart