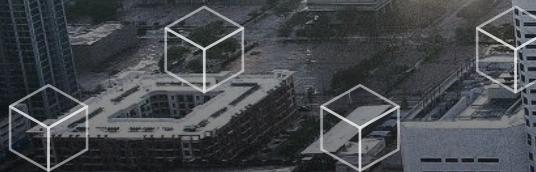


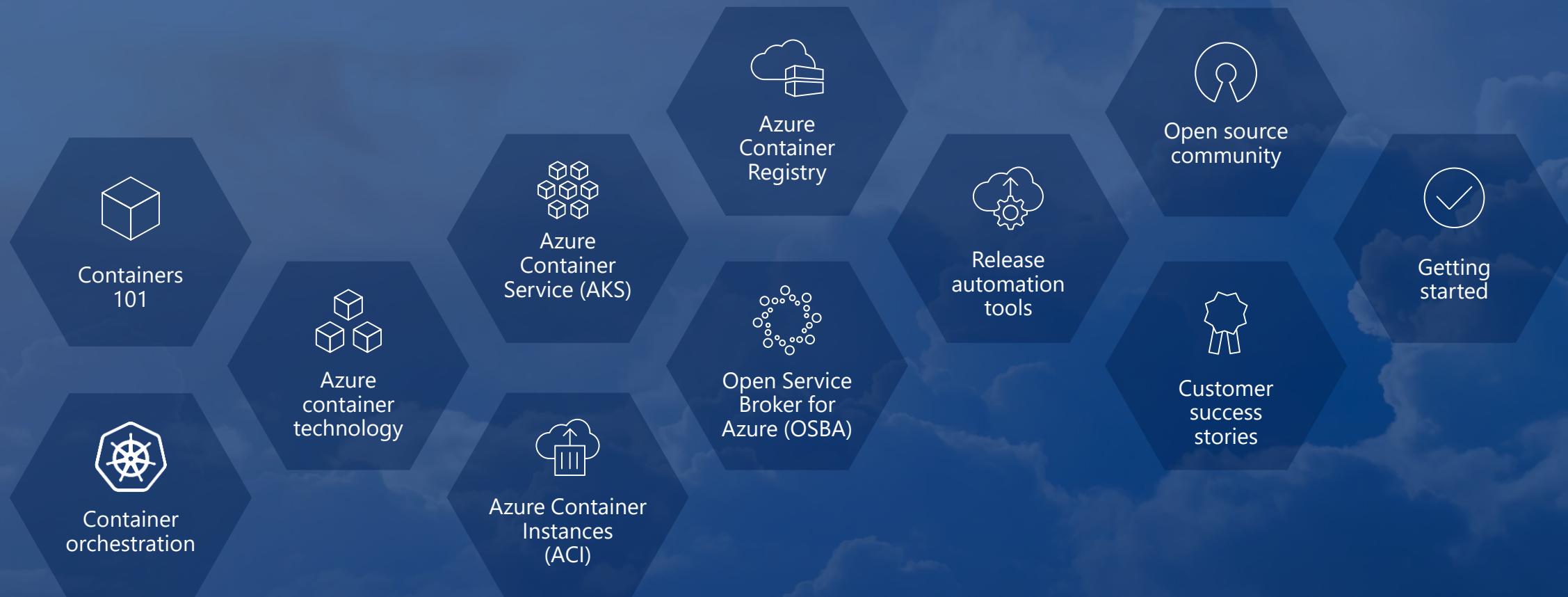


# Azure Kubernetes Service

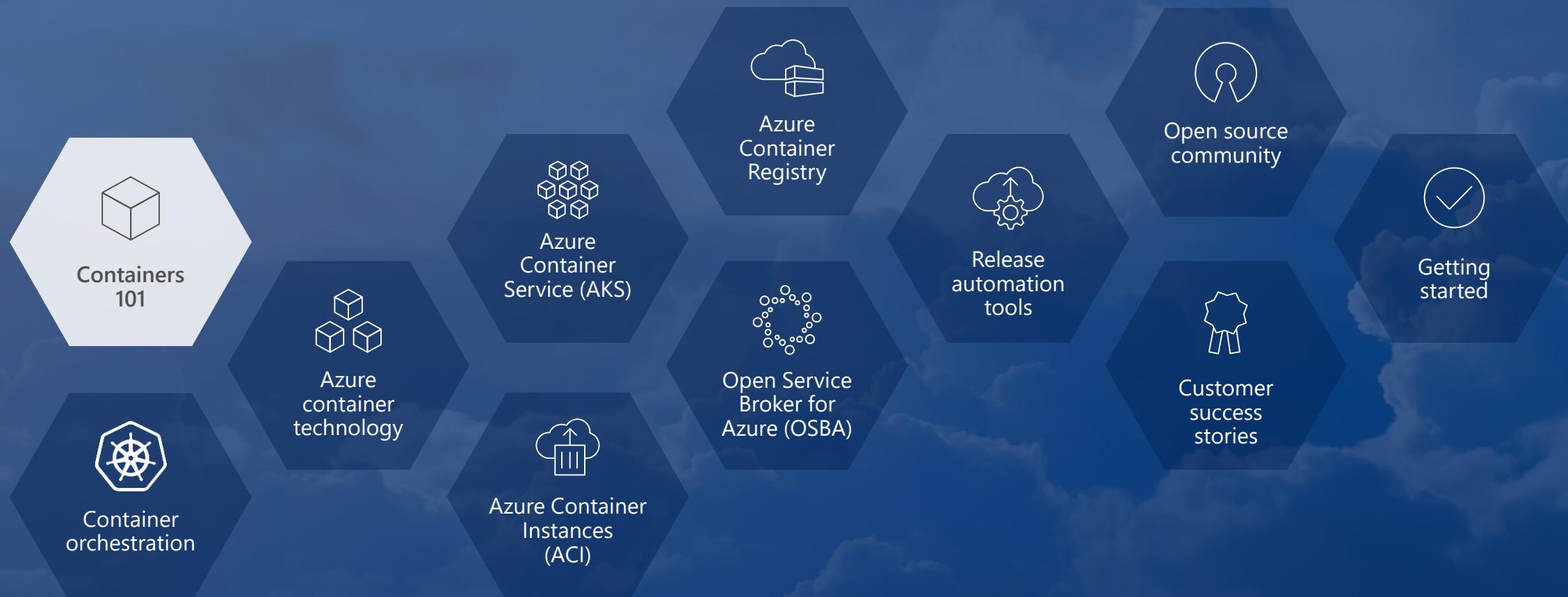
Questions/Feedback? Anand Chandramohan



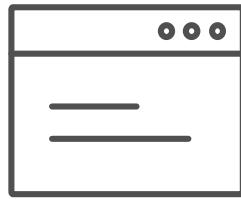
# Table of contents



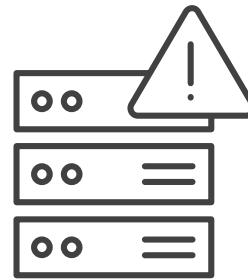
# Containers 101



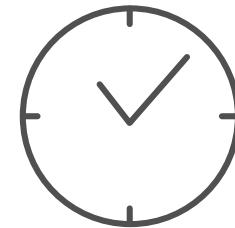
# What we hear from **developers**



I need to create applications at a competitive rate without worrying about IT



New applications run smoothly on my machine but malfunction on traditional IT servers



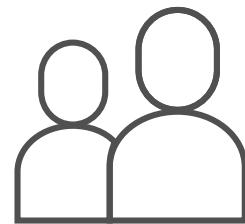
My productivity and application innovation become suspended when I have to wait on IT



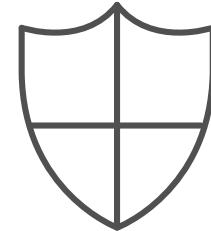
# What we hear from **IT**



I need to manage servers  
and maintain compliance  
with little disruption



I'm unsure of how to integrate  
unfamiliar applications, and I  
require help from developers

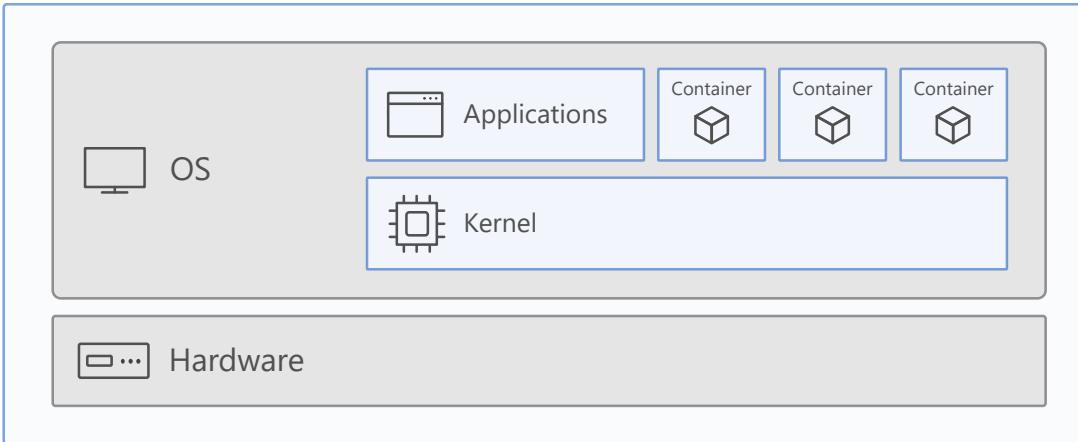


I'm unable to focus on both  
server protection and  
application compliance

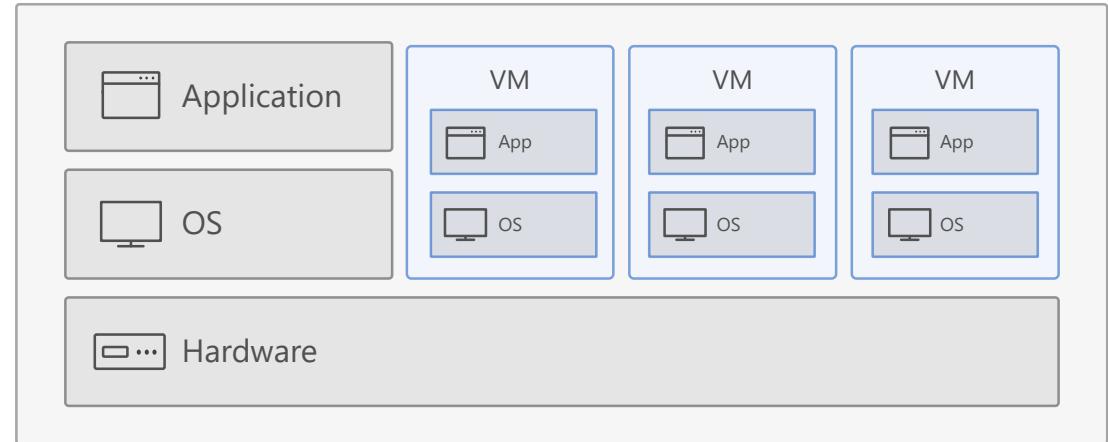


# What is a **container**?

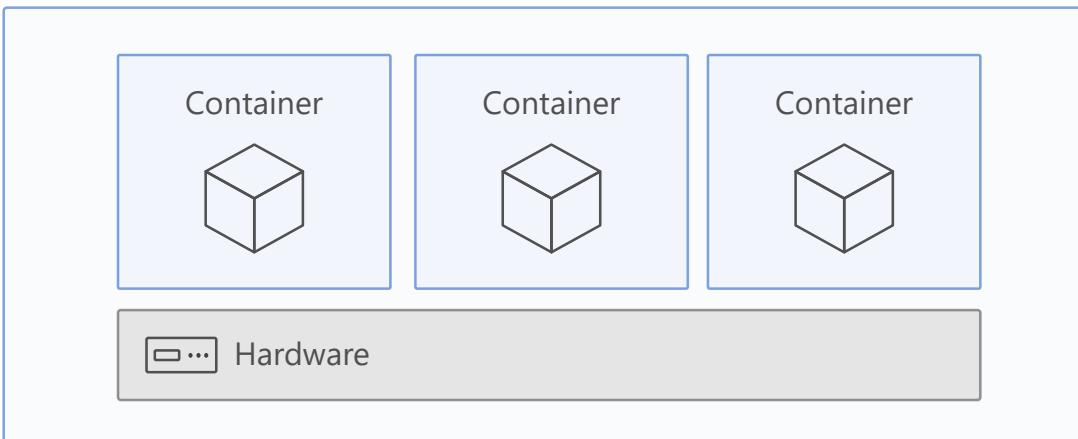
**Containers** = operating system virtualization



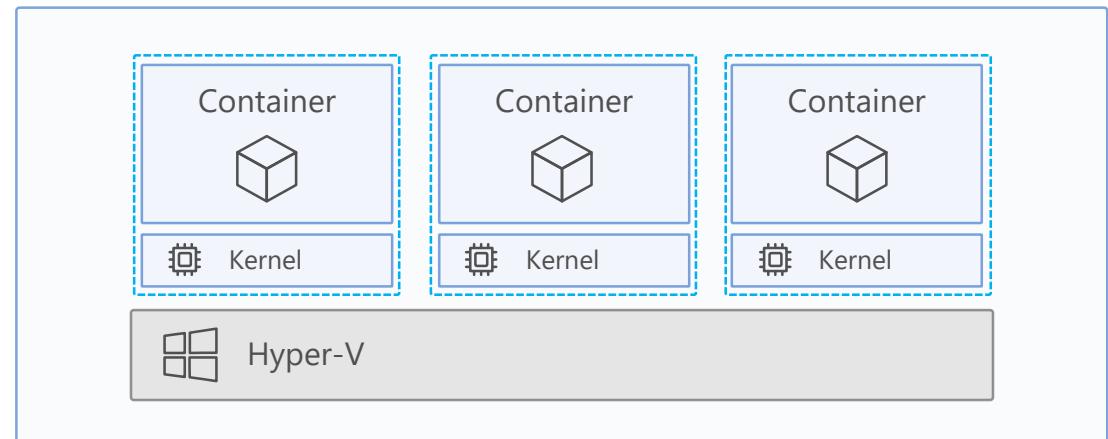
Traditional virtual machines = hardware virtualization



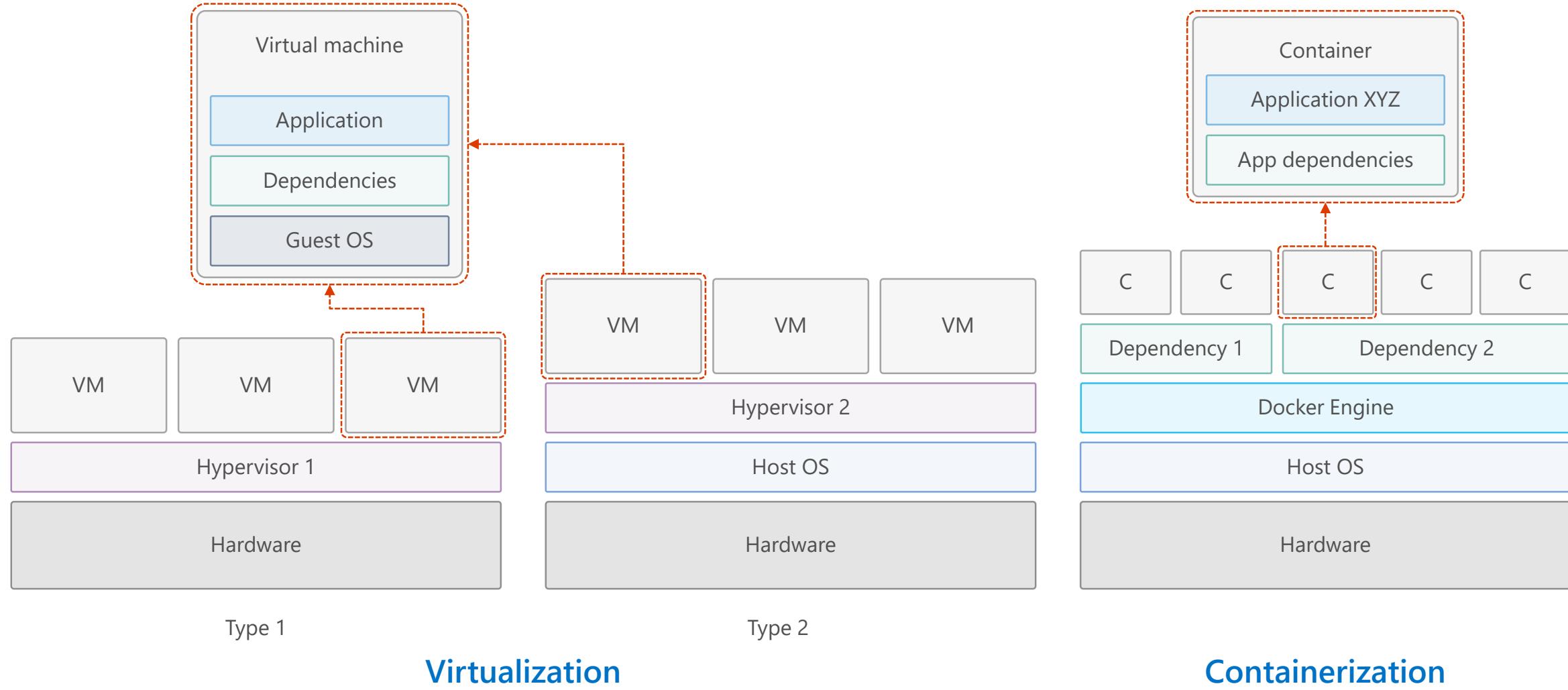
**Windows Server containers:** maximum speed and density



**Hyper-V containers:** isolation plus performance



# Virtualization versus **containerization**

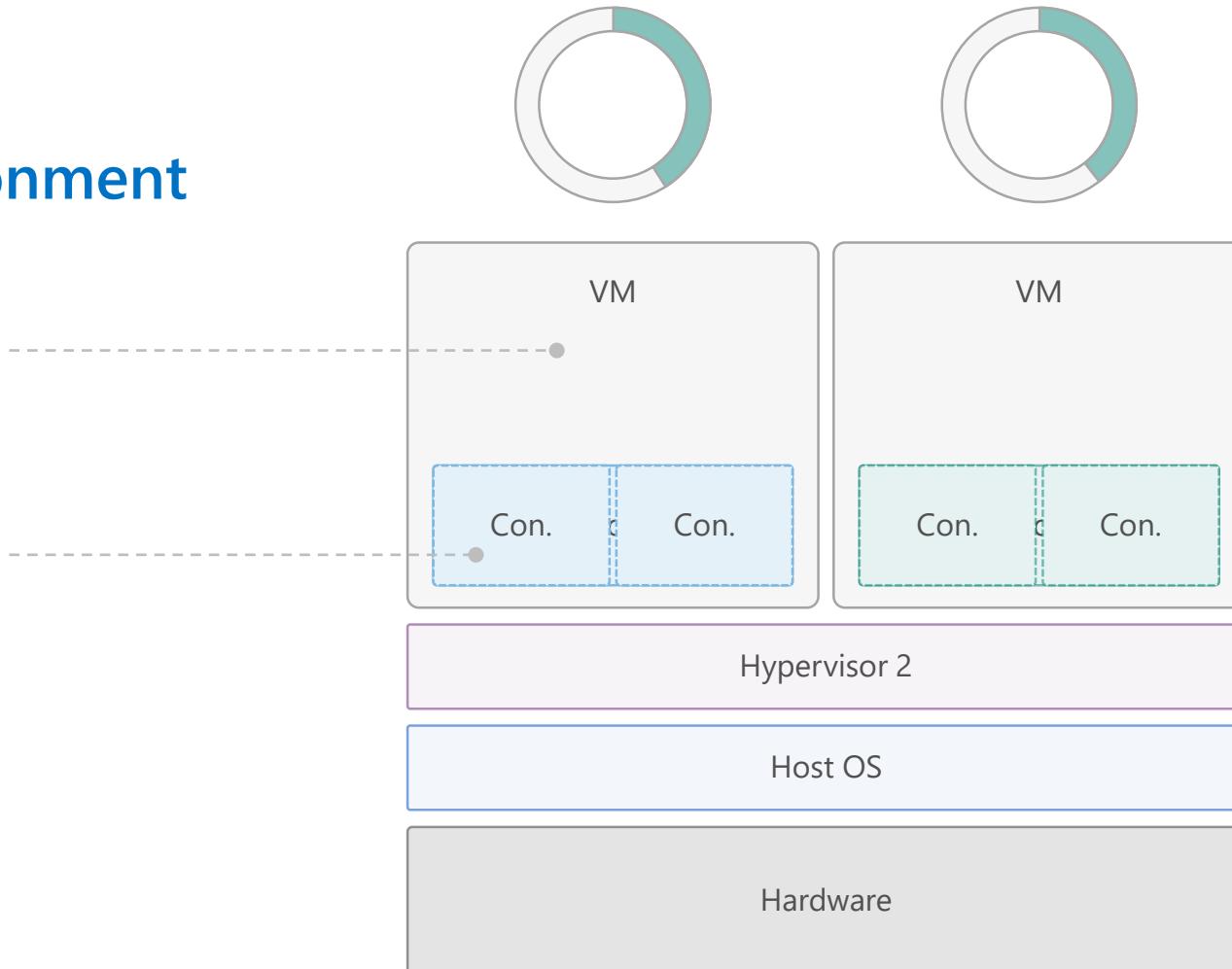


# The container **advantage**

## Traditional virtualized environment

Low utilization of container resources

Containerization of applications and their dependencies

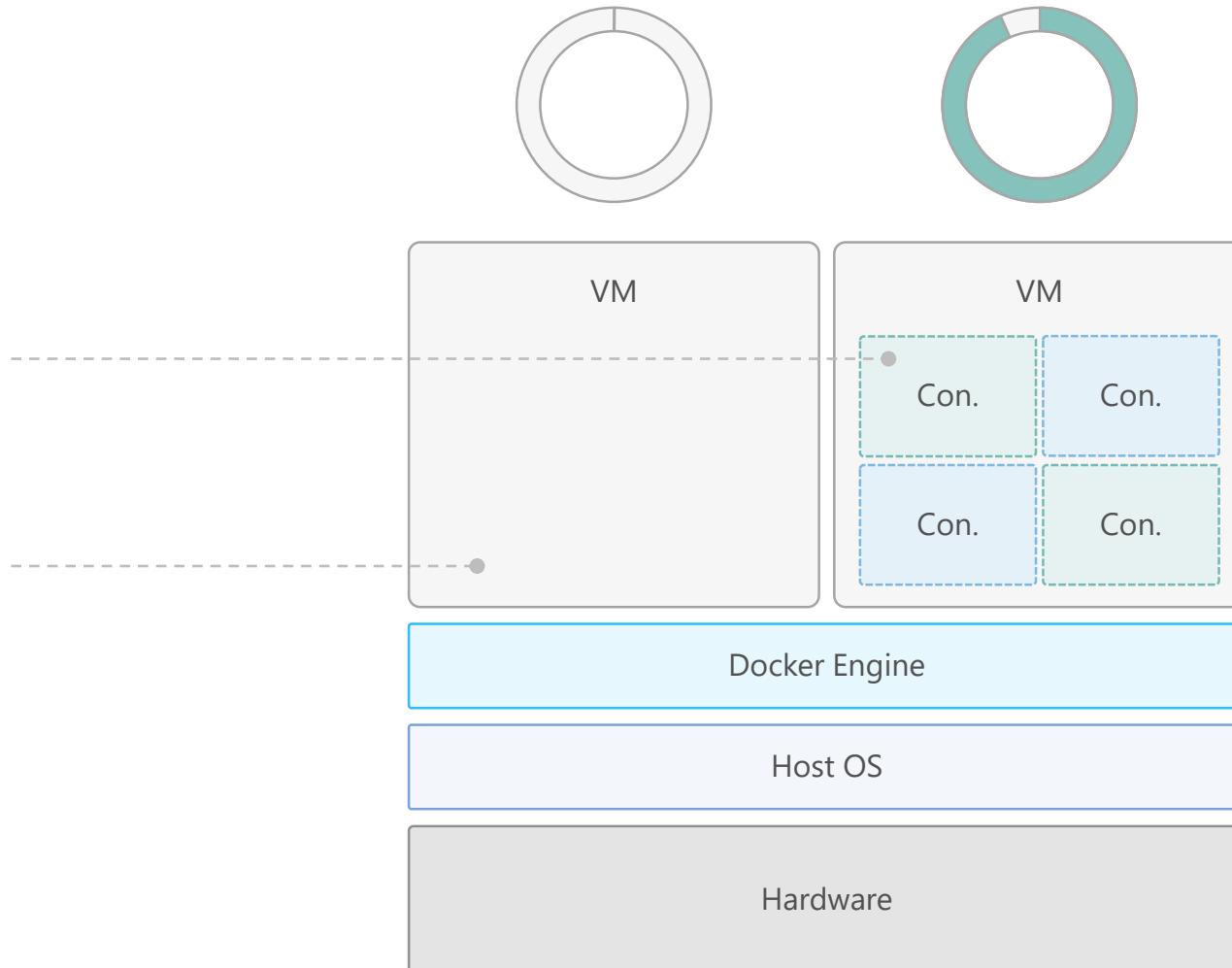


# The container **advantage**

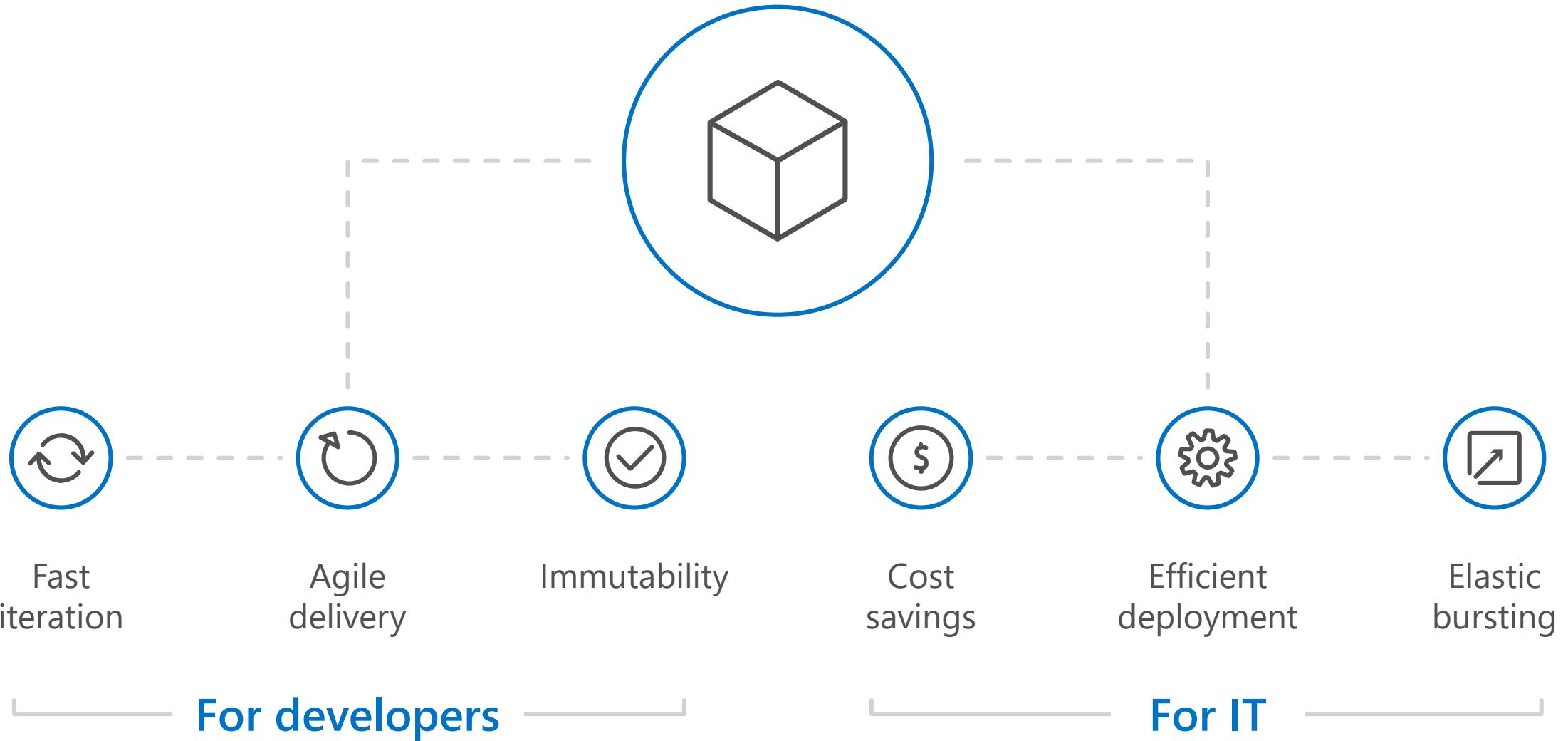
## Containerized environment

Migrate containers and their dependencies to underutilized VMs for improved density and isolation

Decommission unused resources for efficiency gains and cost savings



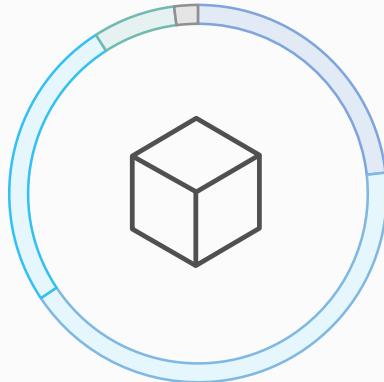
# The container **advantage**



# Containers are gaining **momentum**

Does your organization currently use container technologies?<sup>1</sup>

- 23% My org. is evaluating container technologies
- 42% Yes, my org. currently uses container technologies
- 25% No, my org. is not using container technologies
- 7% Not sure
- 2% Not applicable

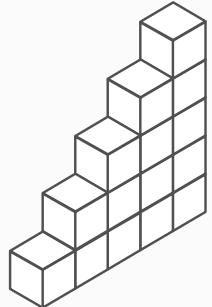


Larger companies are leading adoption.<sup>2</sup>

Nearly 60% percent of organizations running 500 or more hosts are classified as **container dabblers** or adopters.

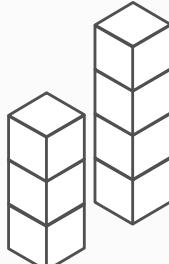


The average company **QUINTUPLES** its container usage within 9 months.<sup>1</sup>



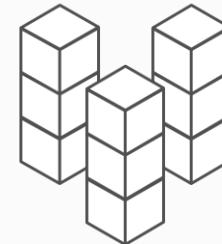
**5X**

Container hosts often run **SEVEN** containers at a time.<sup>1</sup>



**7X**

Containers churn 9 times **FASTER** than VMs.<sup>1</sup>

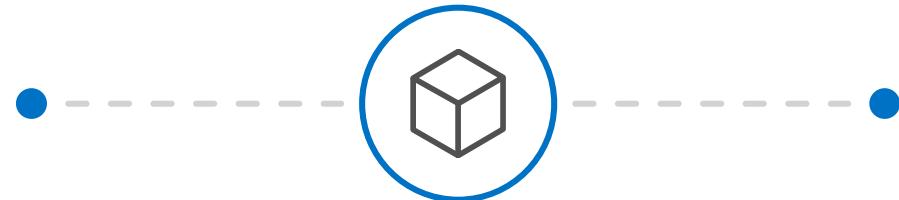


**9X**

Source:

1: Datadog: 8 Surprising Facts About Real Docker Adoption; 2: DZone: The DZone Guide to Deploying and Orchestration Containers

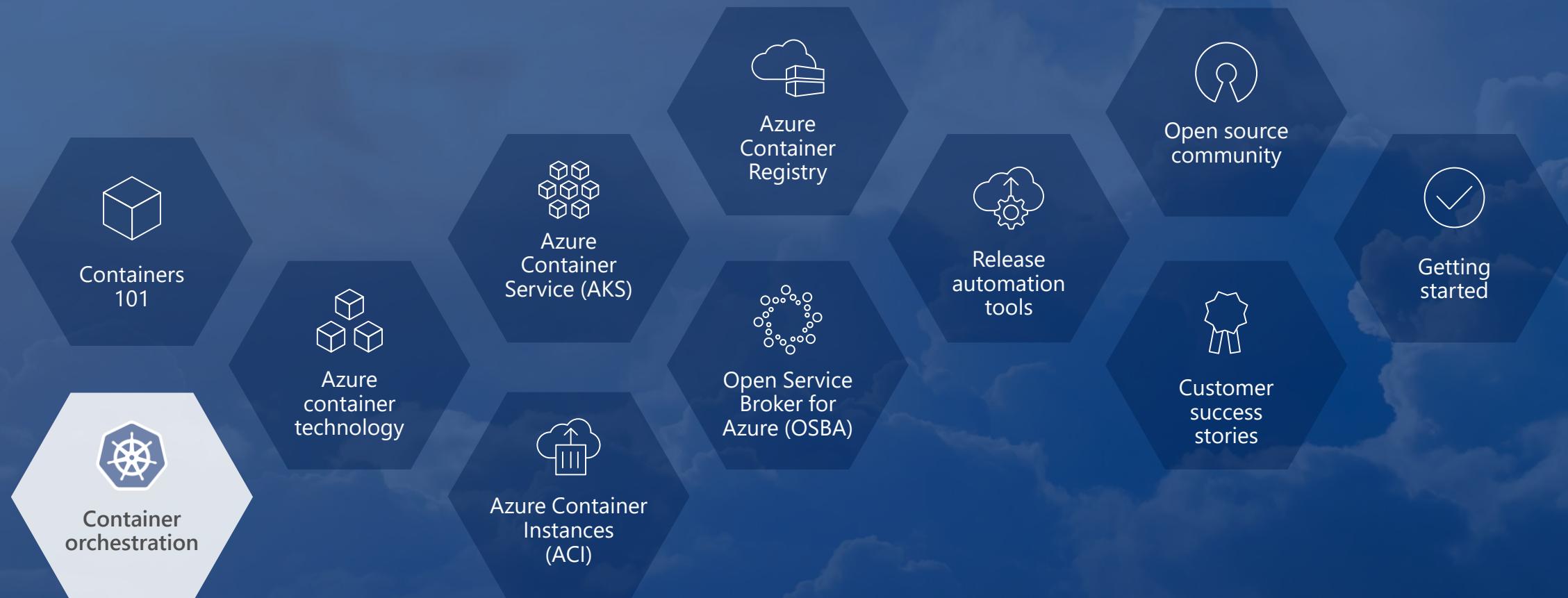
# Industry analysts **agree**



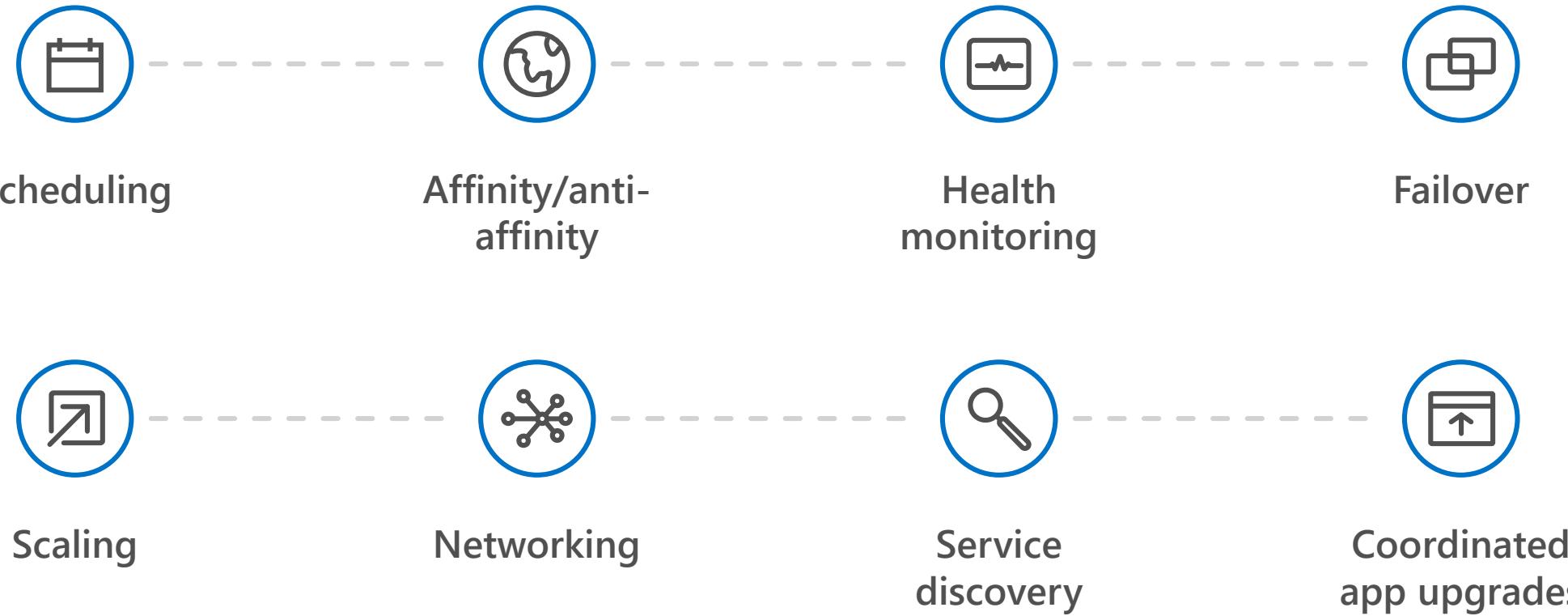
“By 2020, more than 50% of enterprises will run mission-critical, containerized cloud-native applications in production, up from less than 5% today.”

**Gartner**<sup>®</sup>

# Container orchestration



# The elements of **orchestration**



# Kubernetes: the de-facto orchestrator



## Portable

Public, private, hybrid,  
multi-cloud

## Extensible

Modular, pluggable,  
hookable, composable

## Self-healing

Auto-placement, auto-restart,  
auto-replication, auto-scaling

# Kubernetes: empowering you to do more



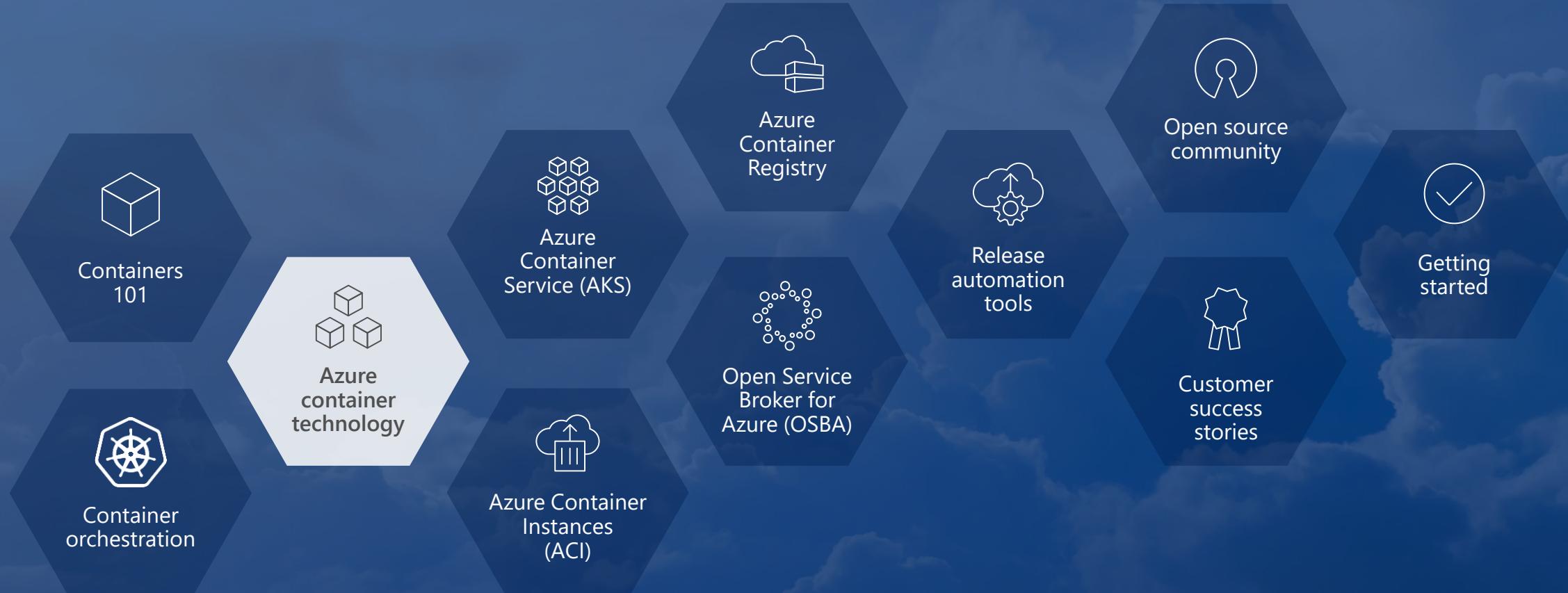
Deploy your  
applications quickly  
and predictably

Scale your  
applications on  
the fly

Roll out  
new features  
seamlessly

Limit hardware  
usage to required  
resources only

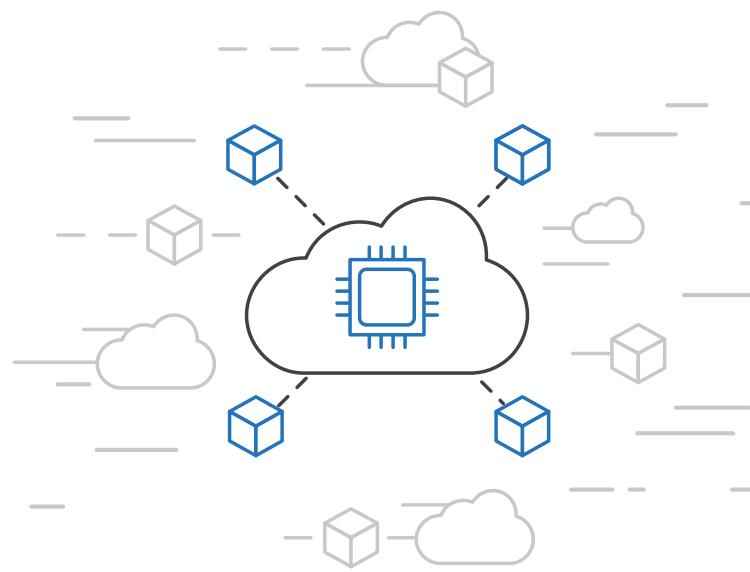
# Azure container technology



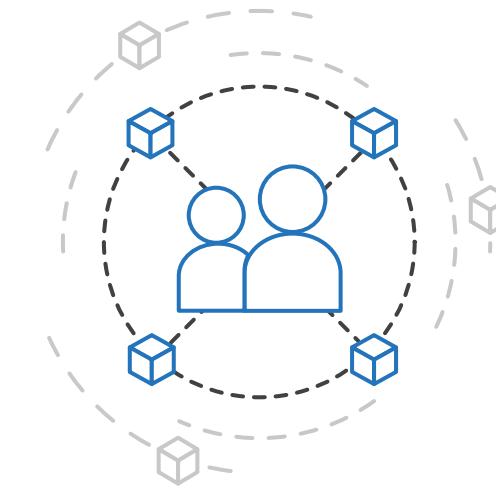
# Azure container **strategy**



Embrace containers  
as ubiquitous

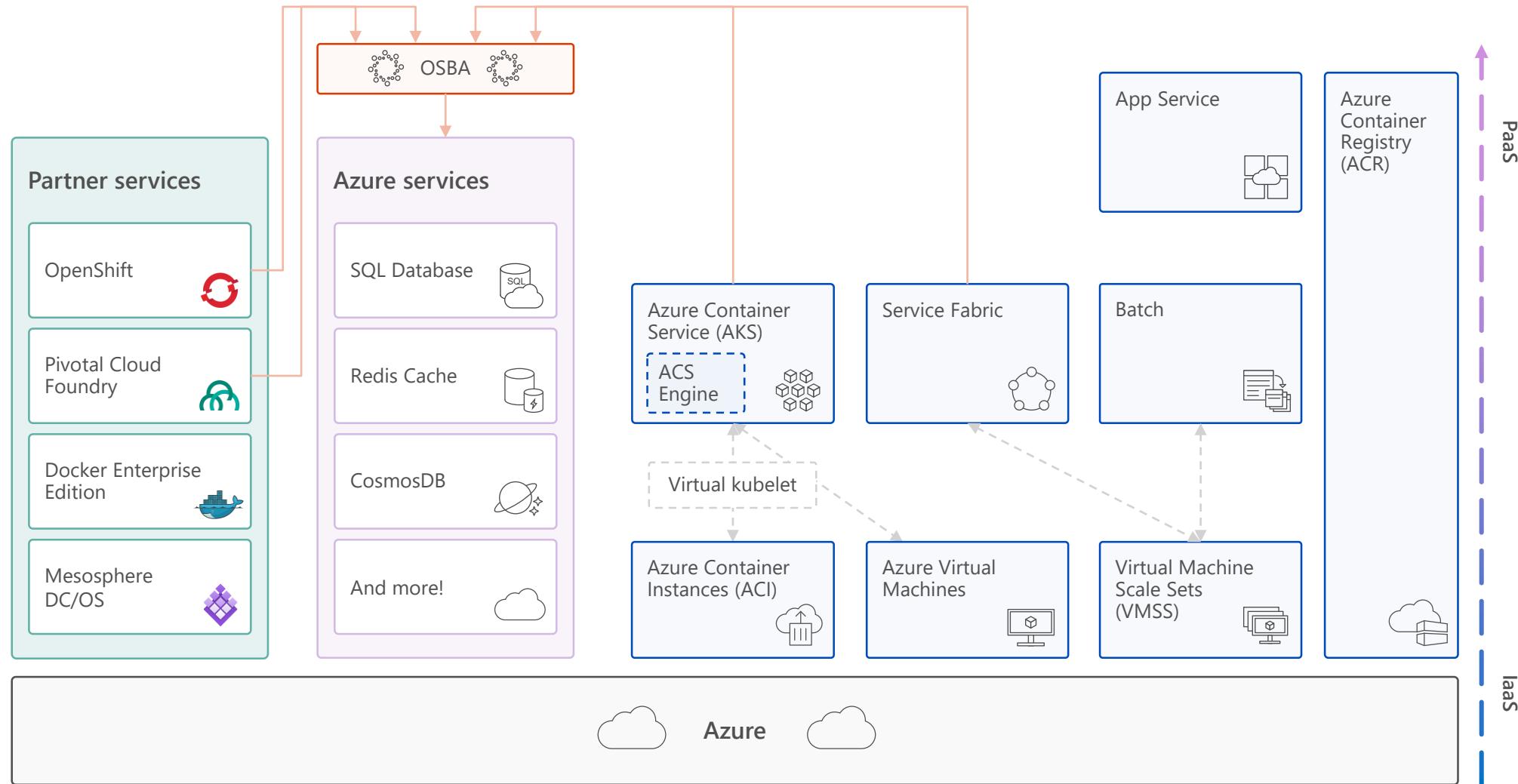


Support containers  
across the compute  
portfolio



Democratize  
container technology

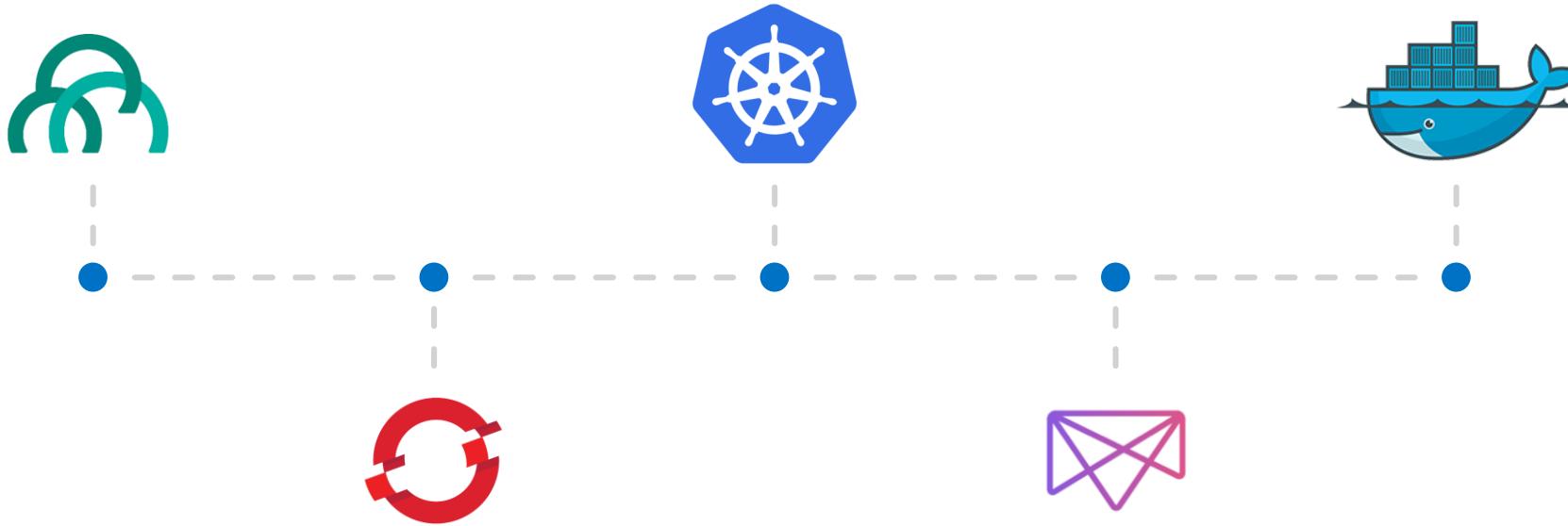
# Azure container ecosystem



If you have a preferred container platform

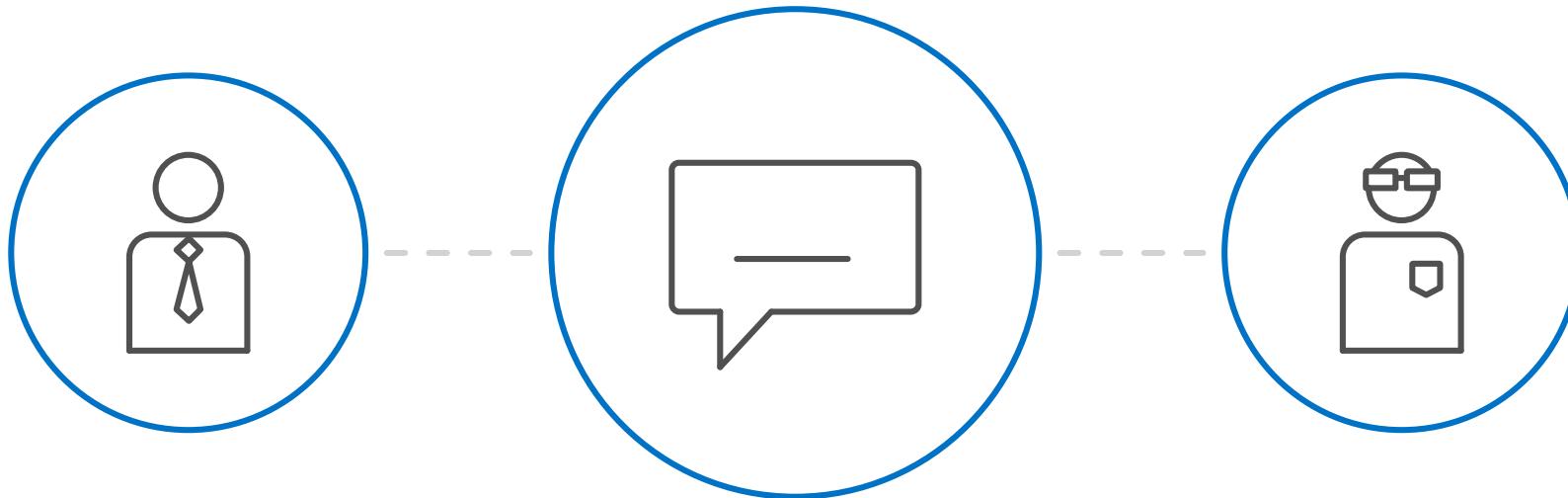
**Pivotal Cloud Foundry • Kubernetes • Docker Enterprise Edition**

**Red Hat OpenShift • Mesosphere DC/OS**



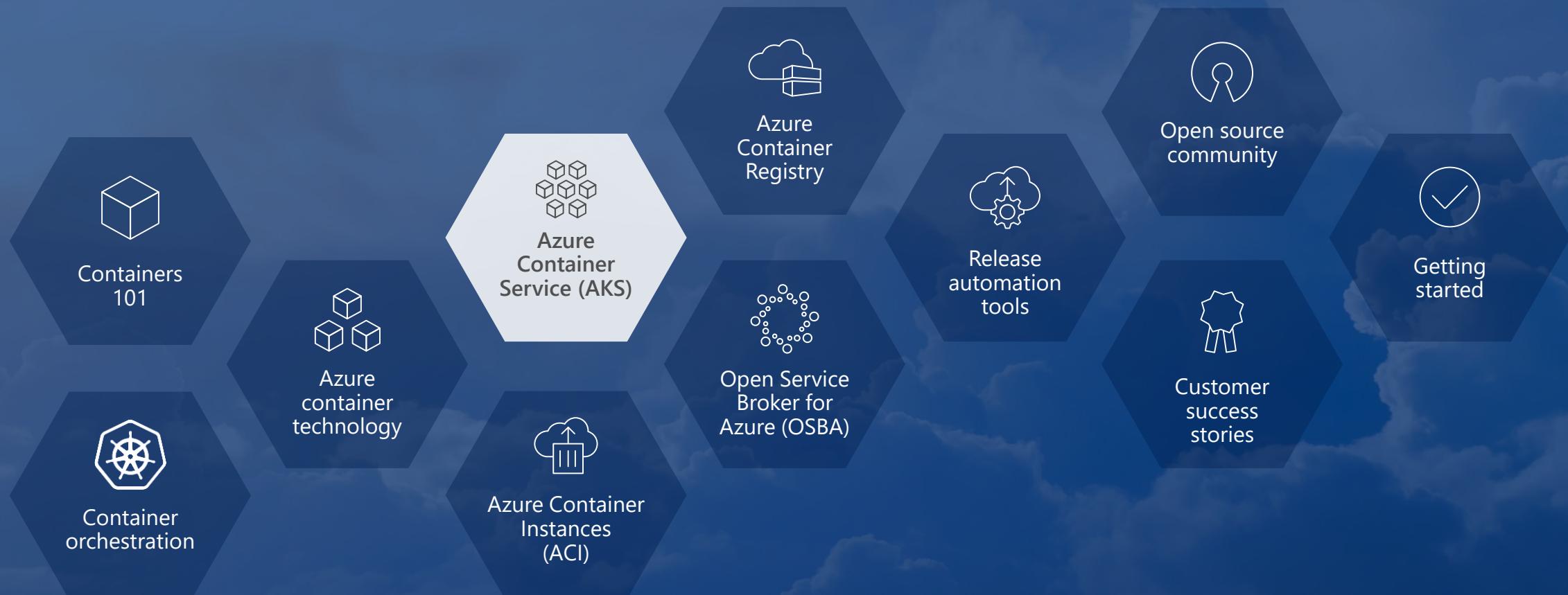
**Lets help you bring that platform to Azure**

If you are without a preferred container platform...



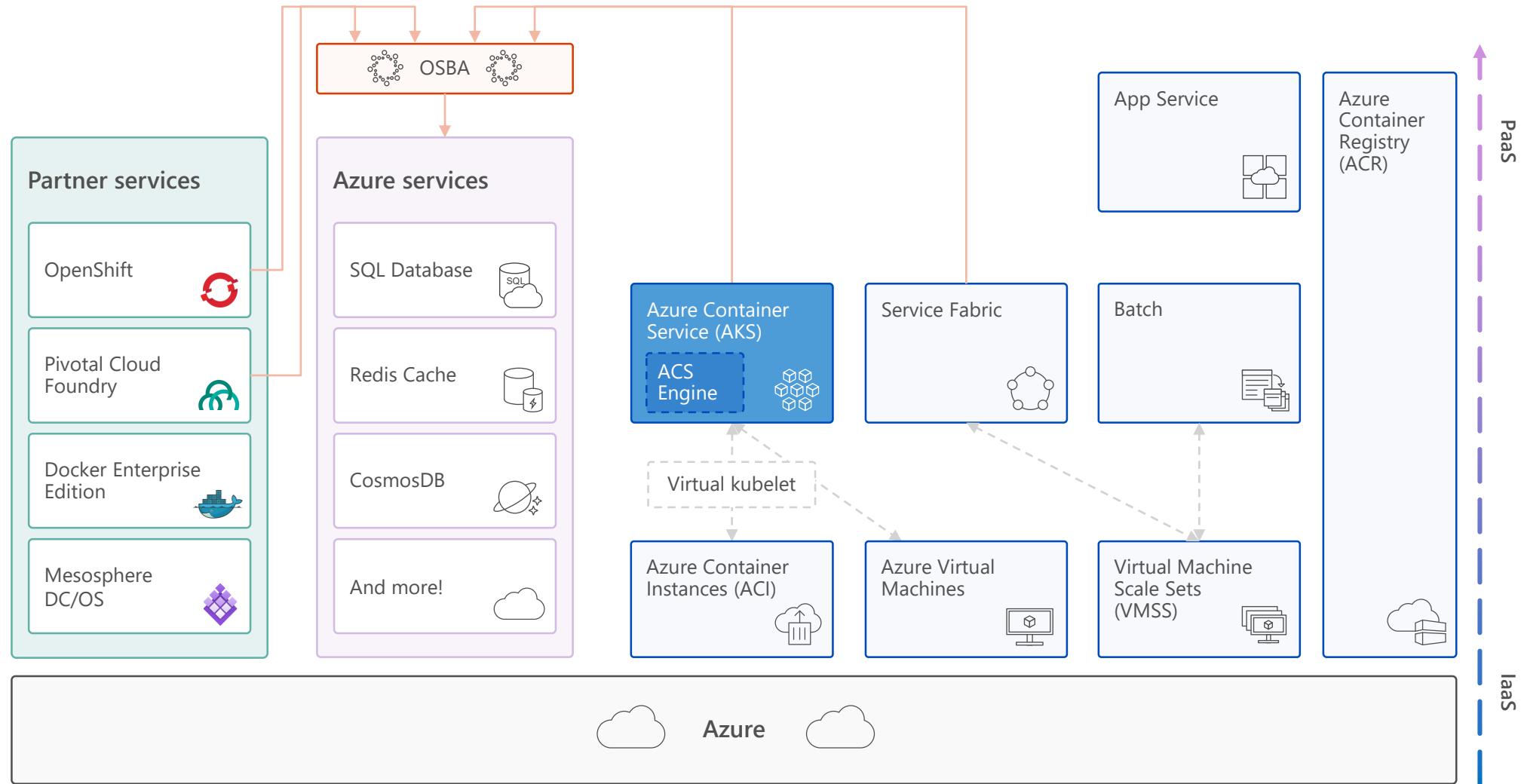
**Lets profile your needs and help you select the right option**

# Azure Container Service (AKS)





# Azure Container Service (AKS)





Azure Container  
Service (AKS)



Azure Container  
Instances (ACI)



Azure Container  
Registry



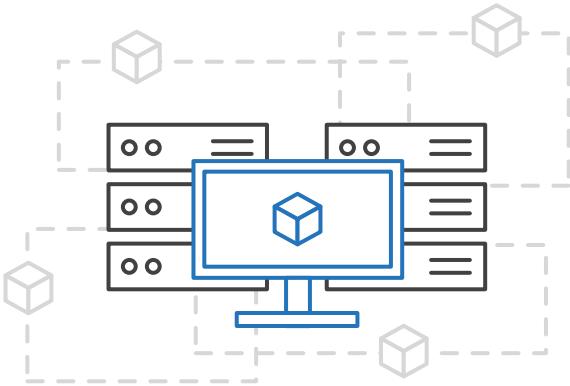
Open Service  
Broker API (OSBA)



Release  
Automation Tools

# Azure Container Service (AKS)

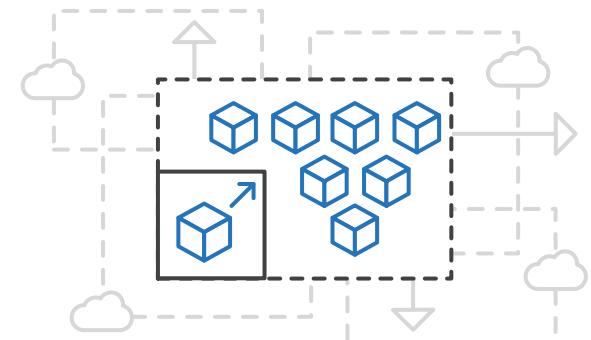
Simplify the deployment, management, and operations of Kubernetes



Focus on your  
containers not the  
infrastructure



Work how you  
want with open-  
source APIs



Scale and run  
applications with  
confidence



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



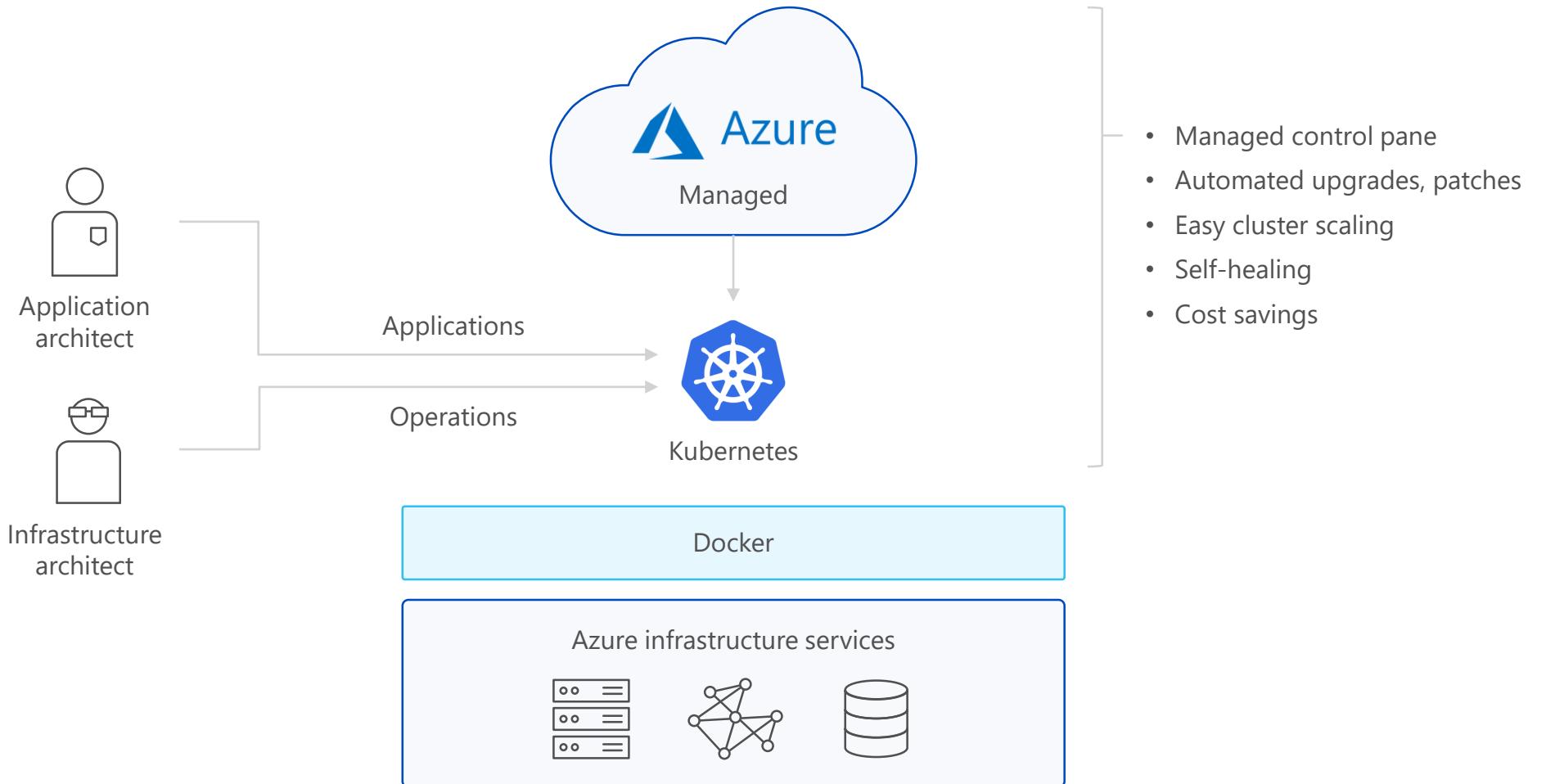
Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Service (AKS)

A fully managed Kubernetes cluster





Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Service (AKS)

## Get started easily

```
$ az aks create -g myResourceGroup -n myCluster --generate-ssh-keys  
\\ Running ..
```

```
$ az aks install-cli  
Downloading client to /usr/local/bin/kubectl ..
```

```
$ az aks get-credentials -g myResourceGroup -n myCluster  
Merged "myCluster" as current context ..
```

```
$ kubectl get nodes
```

| NAME                     | STATUS | AGE | VERSION |
|--------------------------|--------|-----|---------|
| aks-mycluster-36851231-0 | Ready  | 4m  | v1.8.1  |
| aks-mycluster-36851231-1 | Ready  | 4m  | v1.8.1  |
| aks-mycluster-36851231-2 | Ready  | 4m  | v1.8.1  |



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Service (AKS)

## Manage an AKS cluster

```
$ az aks list -o table
```

| Name      | Location | ResourceGroup   | KubernetesRelease | ProvisioningState |
|-----------|----------|-----------------|-------------------|-------------------|
| myCluster | westus2  | myResourceGroup | 1.7.7             | Succeeded         |

```
$ az aks upgrade -g myResourceGroup -n myCluster --kubernetes-version 1.8.1  
\ Running ..
```

```
$ kubectl get nodes
```

| NAME                     | STATUS | AGE | VERSION |
|--------------------------|--------|-----|---------|
| aks-mycluster-36851231-0 | Ready  | 12m | v1.8.1  |
| aks-mycluster-36851231-1 | Ready  | 8m  | v1.8.1  |
| aks-mycluster-36851231-2 | Ready  | 3m  | v1.8.1  |

```
$ az aks scale -g myResourceGroup -n myCluster --agent-count 10  
\ Running ..
```



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Service (AKS)

Create an AKS cluster via the Azure portal

The screenshot shows the Microsoft Azure portal's 'Create a resource' blade. On the left sidebar, under 'FAVORITES', the 'Containers' item is highlighted with a dashed blue box. In the main area, the 'Azure Marketplace' tab is selected. The 'Containers' section contains several items, with 'Azure Container Service - AKS (preview)' highlighted by a dashed blue box. This item includes a 'PREVIEW' badge, a thumbnail icon, and links to 'Learn more'. Other items in the 'Containers' section include 'Azure Container Service', 'Azure Container Instances (preview)', 'Azure Container Registry', and 'Data + Analytics'.



Azure Container  
Service (AKS)



Azure Container  
Instances (ACI)



Azure Container  
Registry



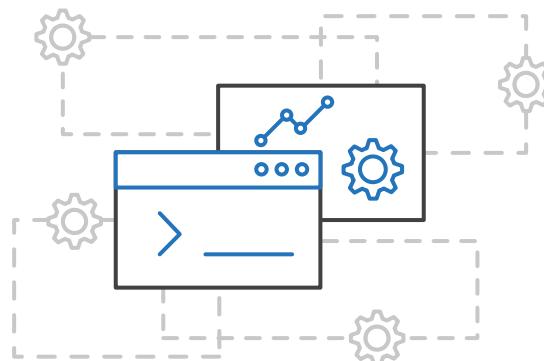
Open Service  
Broker API (OSBA)



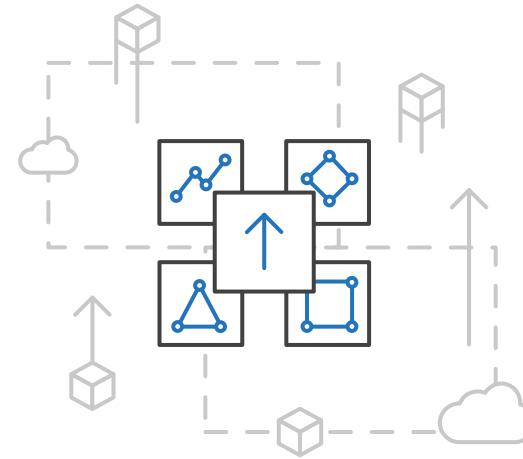
Release  
Automation Tools

# Azure Container Service (AKS)

## Azure Container Service Engine



A proving ground  
for new features



Enables custom  
deployments



Available  
on GitHub



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Service (AKS)

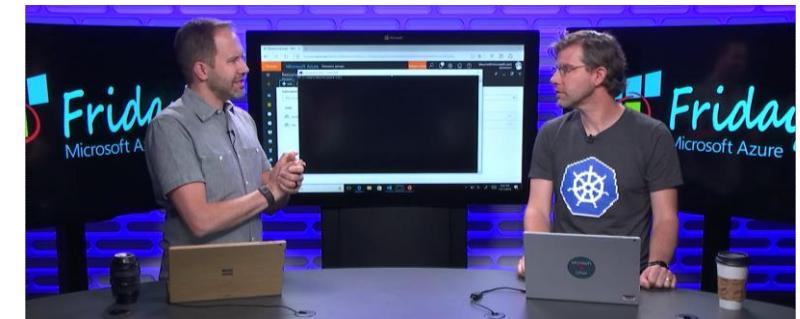
## Resources

- [Azure Container Service \(AKS\) webpage](#)
- [AKS videos](#)
- [AKS technical documentation](#)
- [AKS pricing details](#)
- [AKS roadmap](#)
- [Azure Container Service Engine: Github](#)

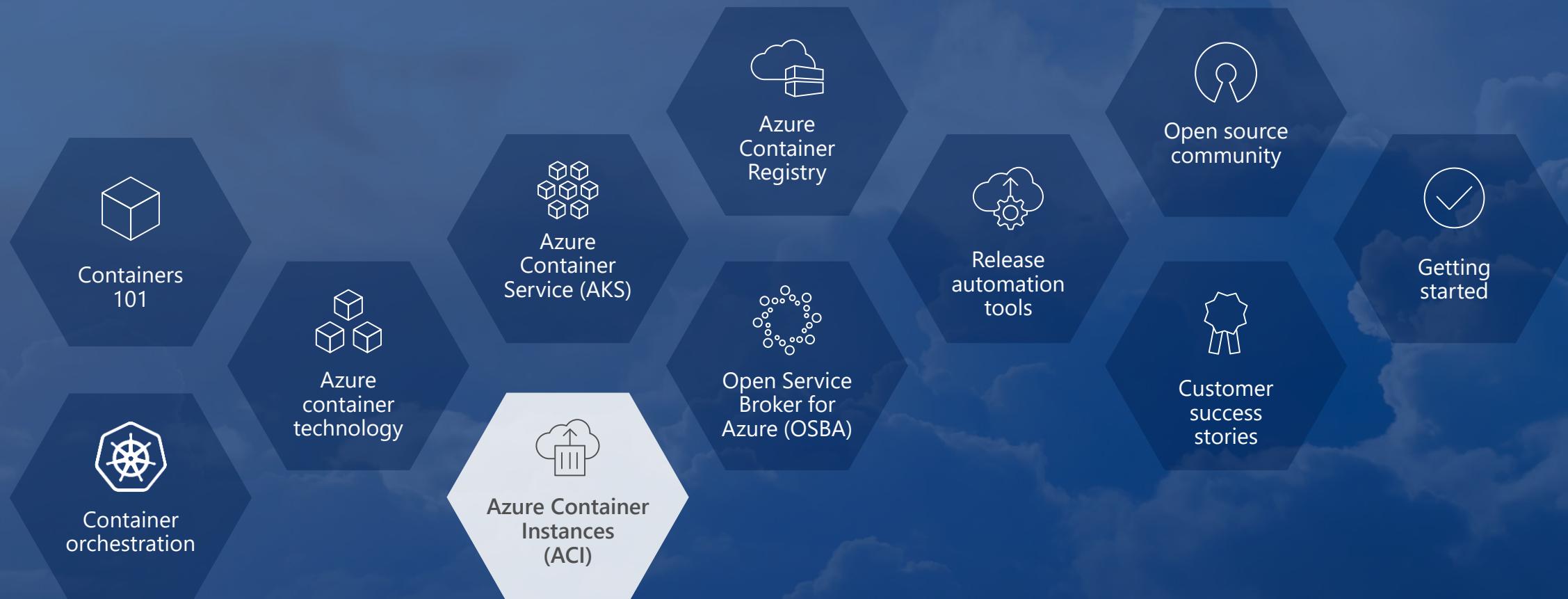
### Container Orchestration Simplified with AKS



### Kubernetes Support in Azure Container Services

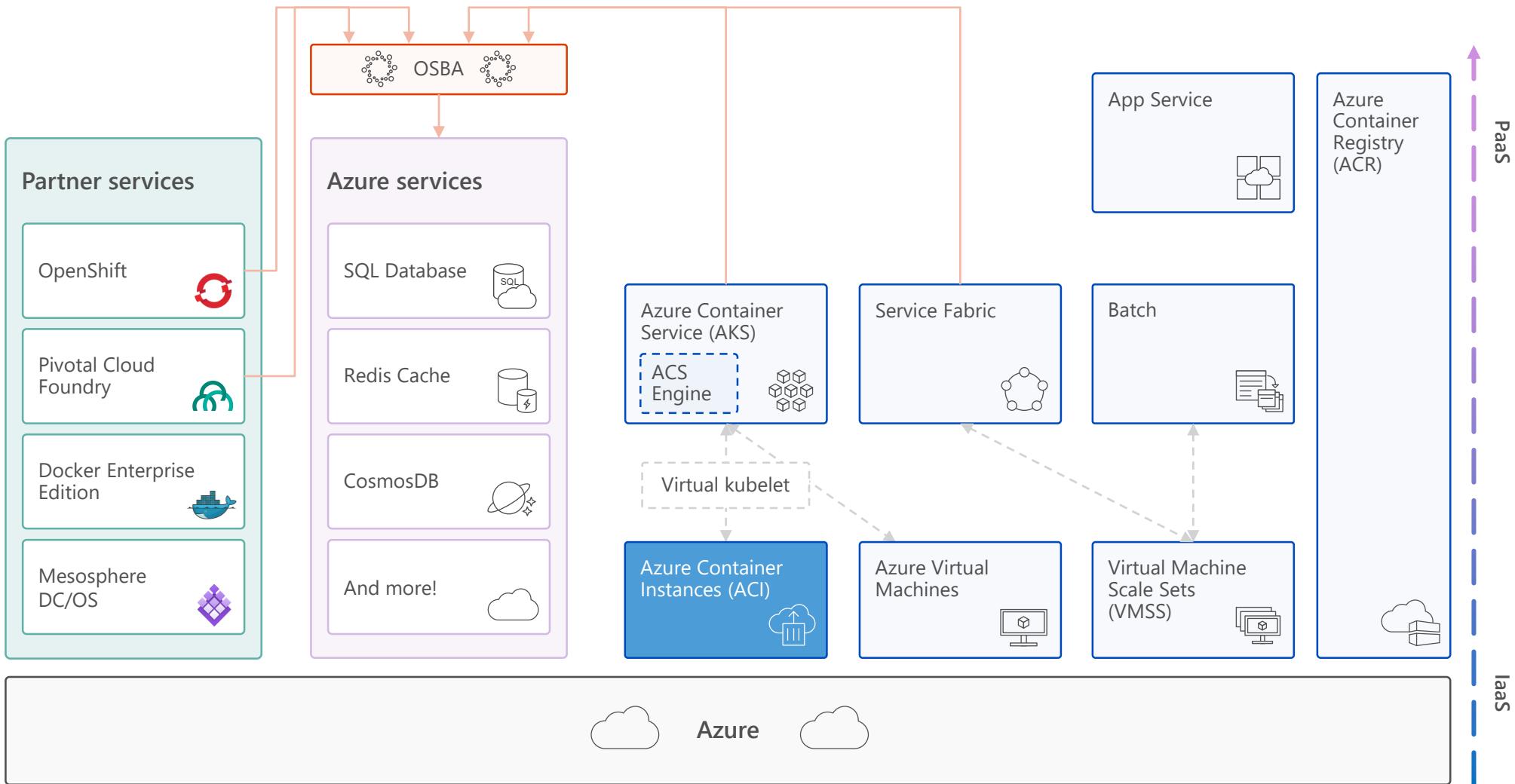


# Azure Container Instances (ACI)





# Azure Container Instances (ACI)





Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



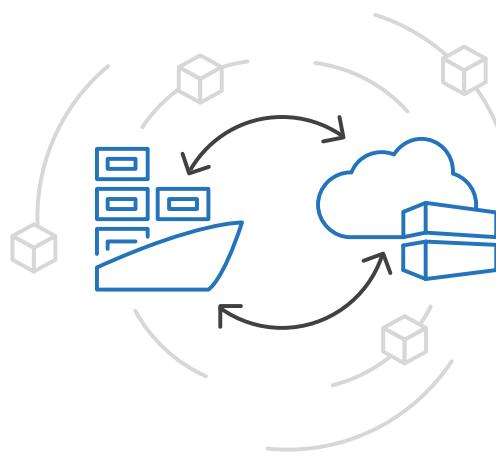
Open Service Broker API (OSBA)



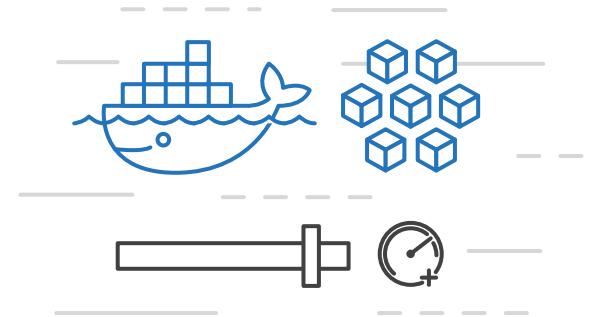
Release Automation Tools

# Azure Container Instances (ACI) PREVIEW

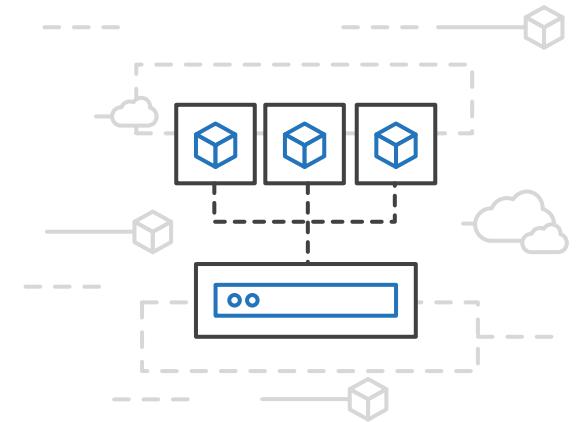
Easily run containers on Azure with a single command



Start using  
containers right away



Cloud-scale  
container capacity



Hyper-visior  
isolation



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Instances (ACI) PREVIEW

Get started easily

```
$ az container create --name mycontainer --image microsoft/aci-helloworld --resource-group myResourceGroup --ip-address public
```

```
  "ipAddress": {  
    "ip": "52.168.86.133",  
    "ports": [...]  
  },  
  "location": "eastus",  
  "name": "mycontainer",  
  "osType": "Linux",  
  "provisioningState": "Succeeded",
```

```
$ curl 52.168.86.133
```

```
<html>  
<head>  
  <title>Welcome to Azure Container Instances!</title>  
</head>
```



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Instances (ACI) PREVIEW

Create an Azure Container Instance quickly

The screenshot shows the Microsoft Azure portal's 'New' blade. On the left, the sidebar includes 'Create a resource', 'All services', 'FAVORITES' (with 'Dashboard', 'All resources', 'Resource groups', 'App Services', 'SQL databases', and 'Azure Cosmos DB'), and 'Compute' (with 'Networking', 'Storage', 'Web + Mobile', 'Containers', 'Databases', and 'Data + Analytics'). The 'Containers' section is highlighted with a dashed blue border. In the main area, the 'Azure Marketplace' tab is selected, showing 'Get started', 'Recently created', 'Compute', 'Networking', 'Storage', 'Web + Mobile', 'Containers', 'Databases', and 'Data + Analytics'. The 'Containers' section lists 'Azure Container Service - AKS (preview)', 'Azure Container Service', and 'Azure Container Instances (preview)'. The 'Azure Container Instances (preview)' item is specifically highlighted with a dashed blue border around its icon and text.

Report a bug Search resources, services and more

Microsoft Azure

Home > New

New

+

Create a resource

All services

★ FAVORITES

Dashboard

All resources

Resource groups

App Services

SQL databases

Azure Cosmos DB

Azure Marketplace

See all

Featured

See all

Get started

Recently created

Compute

Networking

Storage

Web + Mobile

Containers

Databases

Data + Analytics

Azure Container Service - AKS (preview)  
PREVIEW Learn more

Azure Container Service  
Learn more

Azure Container Instances (preview)  
Learn more

Azure Container Registry  
Learn more



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



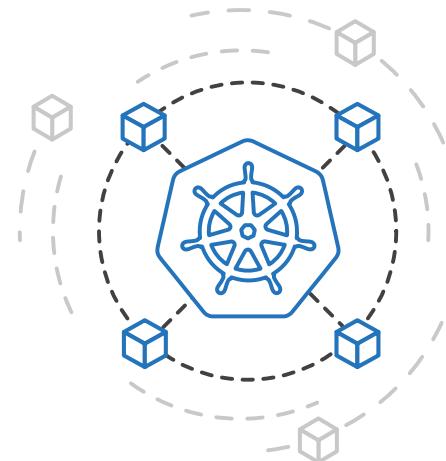
Open Service Broker API (OSBA)



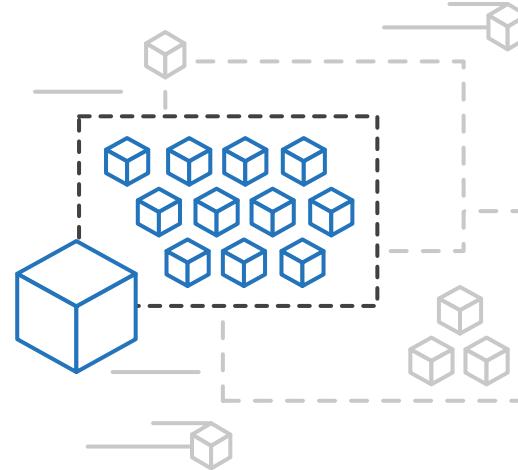
Release Automation Tools

# Azure Container Instances (ACI) PREVIEW

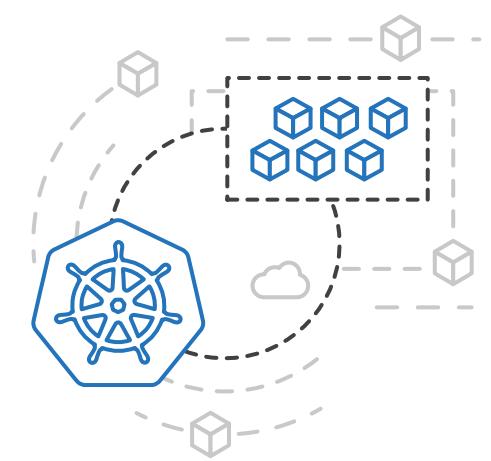
## ACI Connector for Kubernetes



Kubernetes provides rich orchestration capabilities



ACI provides infinite container-based scale



The ACI Connector for K8s brings them together



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



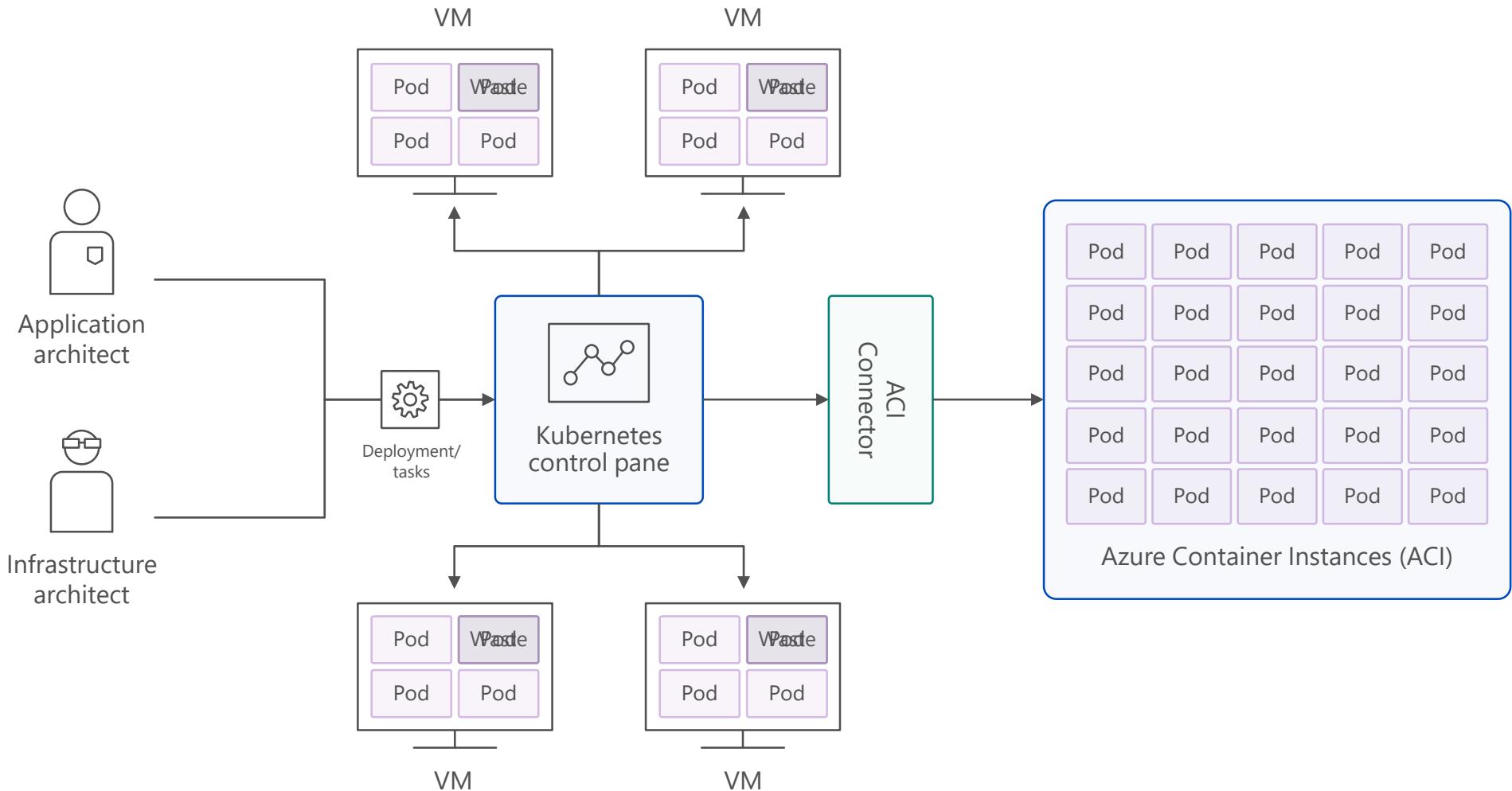
Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Instances (ACI) PREVIEW

## Bursting with the ACI Connector





Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



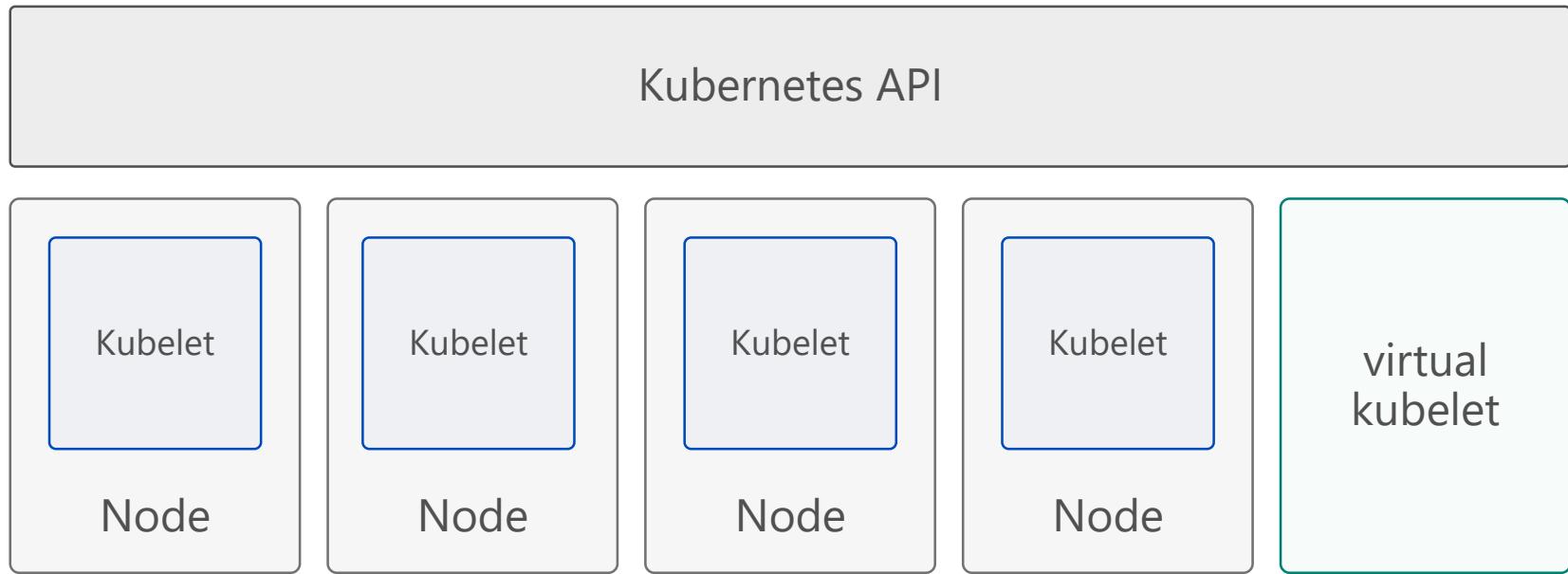
Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Instances (ACI) PREVIEW

## Virtual Kubelet



Typical kubelets implement the pod and container operations for each node as usual.

Virtual kubelet registers itself as a “node” and allows developers to program their own behaviors for operations on pods and containers.



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Instances (ACI) PREVIEW

## Resources

- [Azure Container Instances \(ACI\) webpage](#)
- [ACI videos](#)
- [ACI technical documentation](#)
- [ACI pricing details](#)
- [ACI roadmap](#)

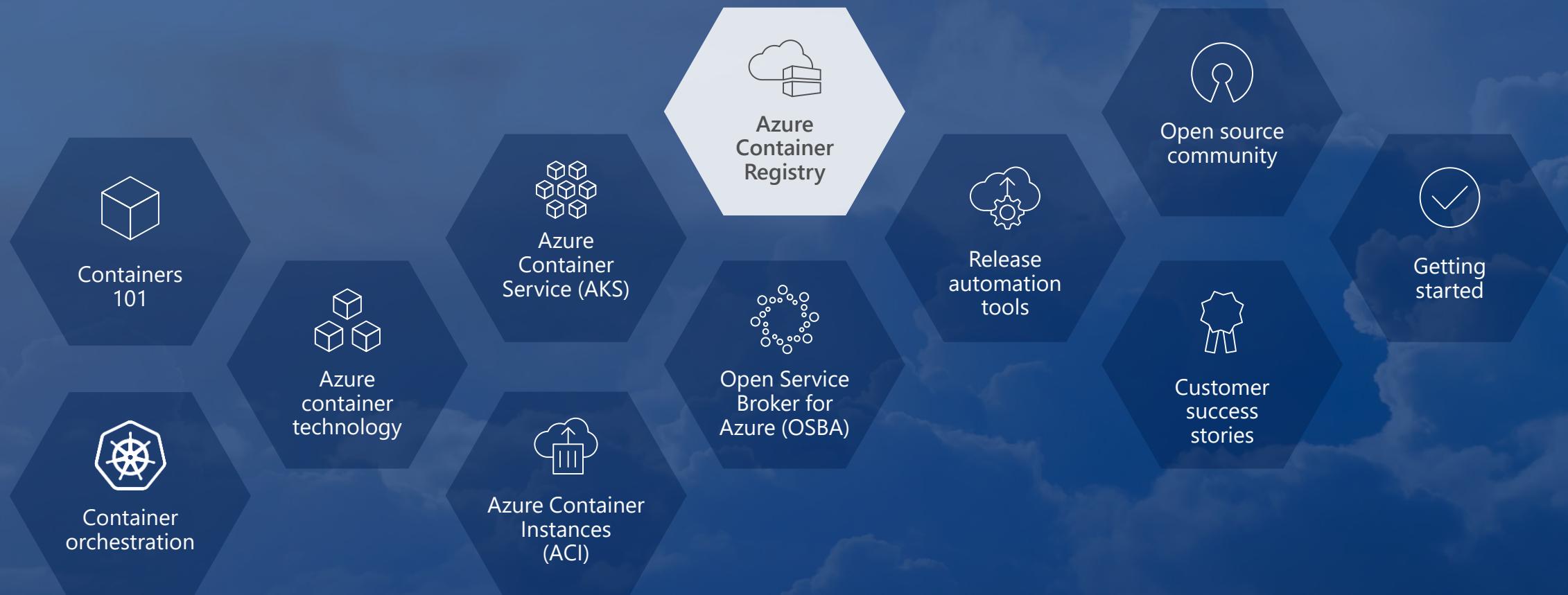
Azure Container Instances



Using Kubernetes with Azure Container Instances

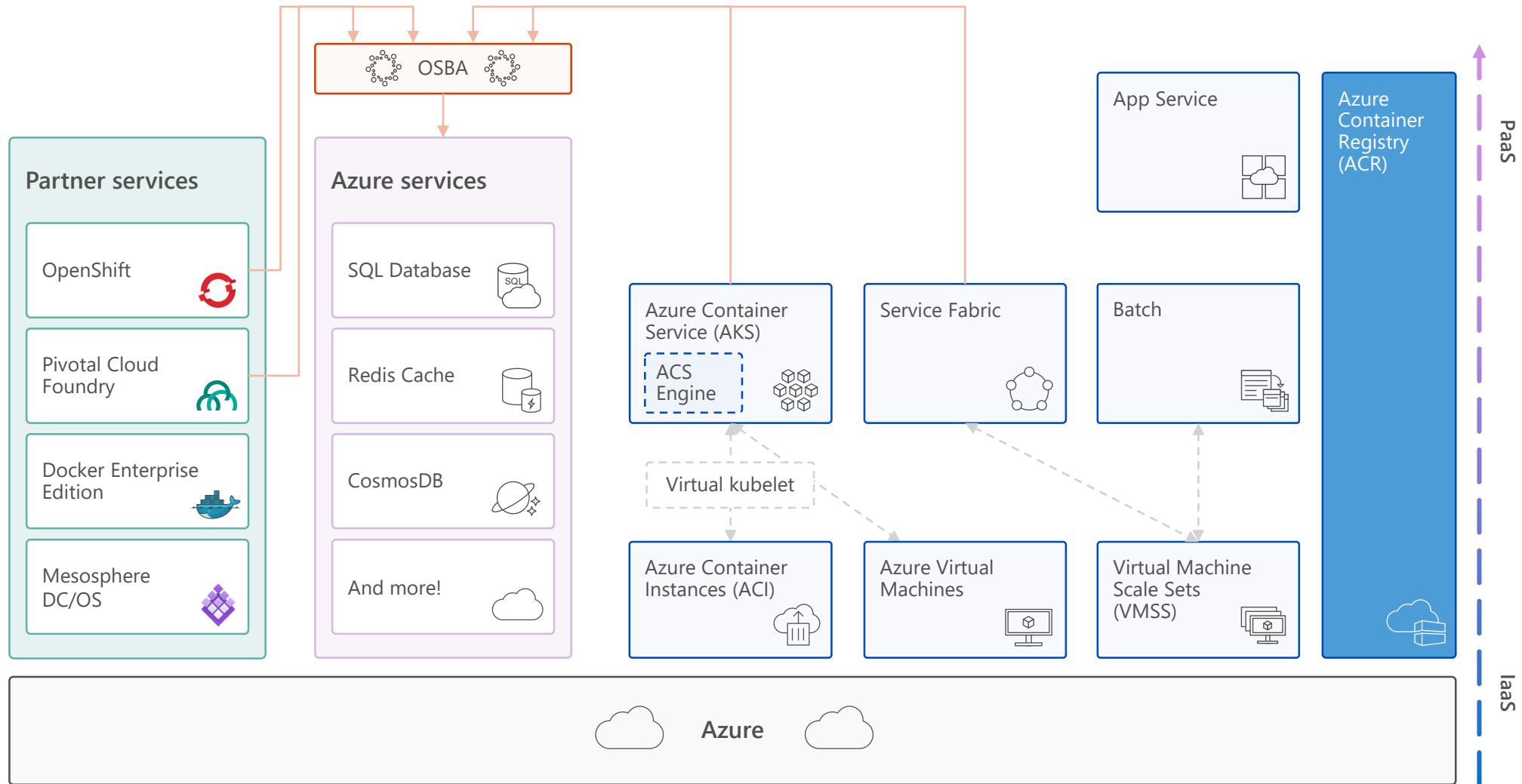


# Azure Container Registry





# Azure Container Registry





Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



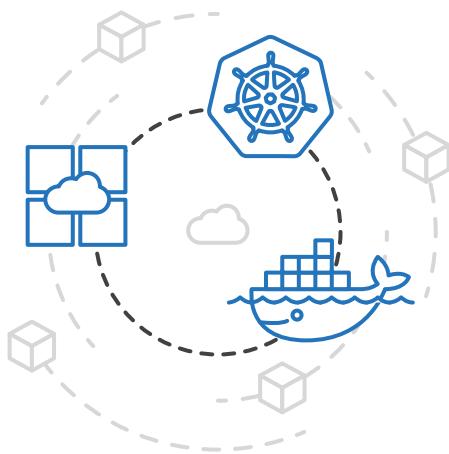
Open Service Broker API (OSBA)



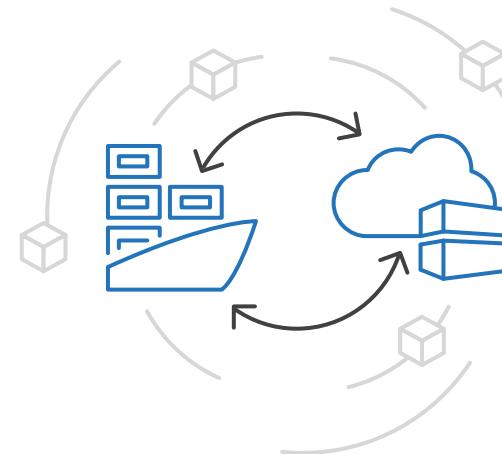
Release Automation Tools

# Azure Container Registry

Manage a Docker private registry as a first-class Azure resource



Manage images for all types of containers



Use familiar, open-source Docker CLI tools



Azure Container Registry geo-replication



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Registry

Create a container in the Registry quickly

The screenshot shows the Microsoft Azure portal's 'New' blade. On the left, there's a sidebar with 'Create a resource', 'All services', and a 'FAVORITES' section containing 'Dashboard', 'All resources', 'Resource groups', 'App Services', 'SQL databases', and 'Azure Cosmos DB'. The main area has tabs for 'Azure Marketplace' (selected) and 'Featured'. Under 'Azure Marketplace', there are links for 'Get started', 'Recently created', 'Compute', 'Networking', 'Storage', 'Web + Mobile', and 'Containers'. The 'Containers' link is highlighted with a dashed blue box. Under 'Featured', there are cards for 'Azure Container Service - AKS (preview)', 'Azure Container Service', 'Azure Container Instances (preview)', and 'Azure Container Registry'. Each card includes a 'PREVIEW' badge, a 'Learn more' link, and a small icon.

| Category          | Service                             | Status    | Learn more                 |
|-------------------|-------------------------------------|-----------|----------------------------|
| Azure Marketplace | Azure Container Service - AKS       | (preview) | <a href="#">Learn more</a> |
| Azure Marketplace | Azure Container Service             |           | <a href="#">Learn more</a> |
| Azure Marketplace | Azure Container Instances (preview) |           | <a href="#">Learn more</a> |
| Featured          | Azure Container Registry            |           | <a href="#">Learn more</a> |



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Azure Container Registry

## Resources

- [Azure Container Registry webpage](#)
- [Registry technical documentation](#)
- [Registry pricing details](#)
- [Registry roadmap](#)

Creating, configuring the Azure Container Registry

Why: Azure Container Registry

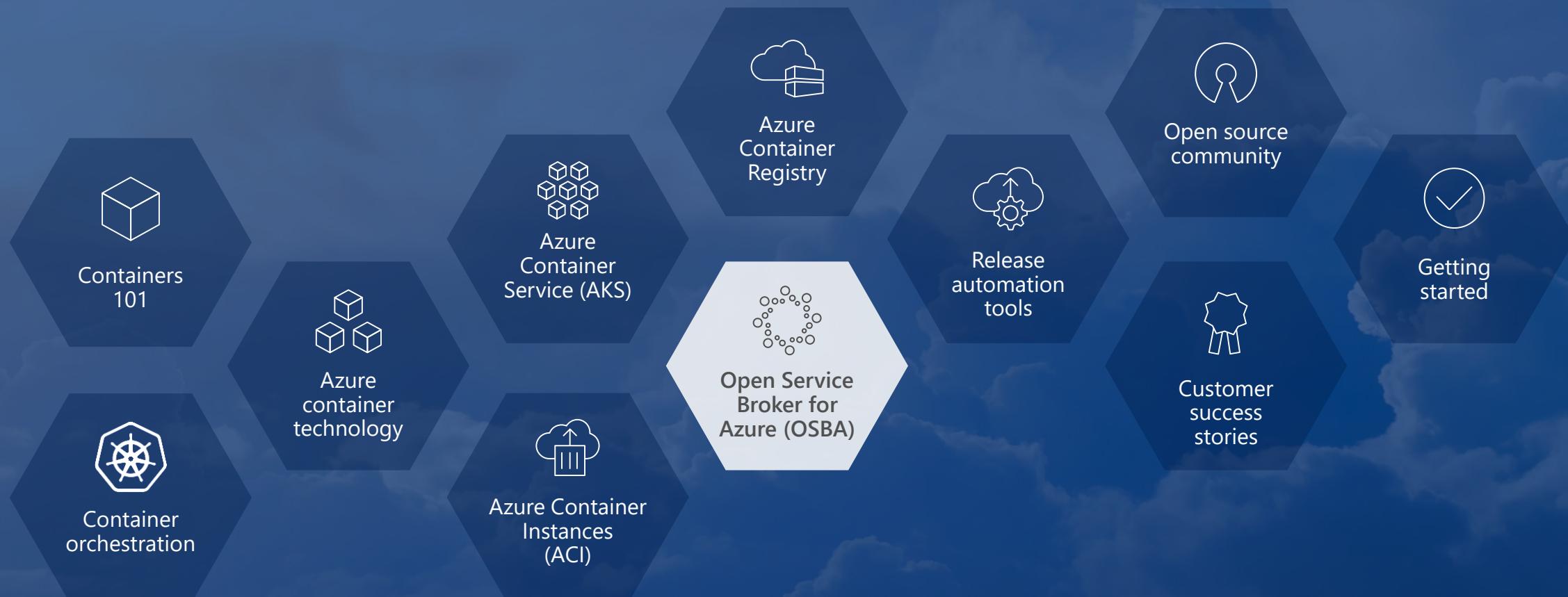
Keep Your Images Private  
Stored in Azure with your resources

Network-Close  
Deployed to your targets within the same data center  
No ingress/egress fees or latency

Azure Active Directory Integration  
Manage registry access using AAD

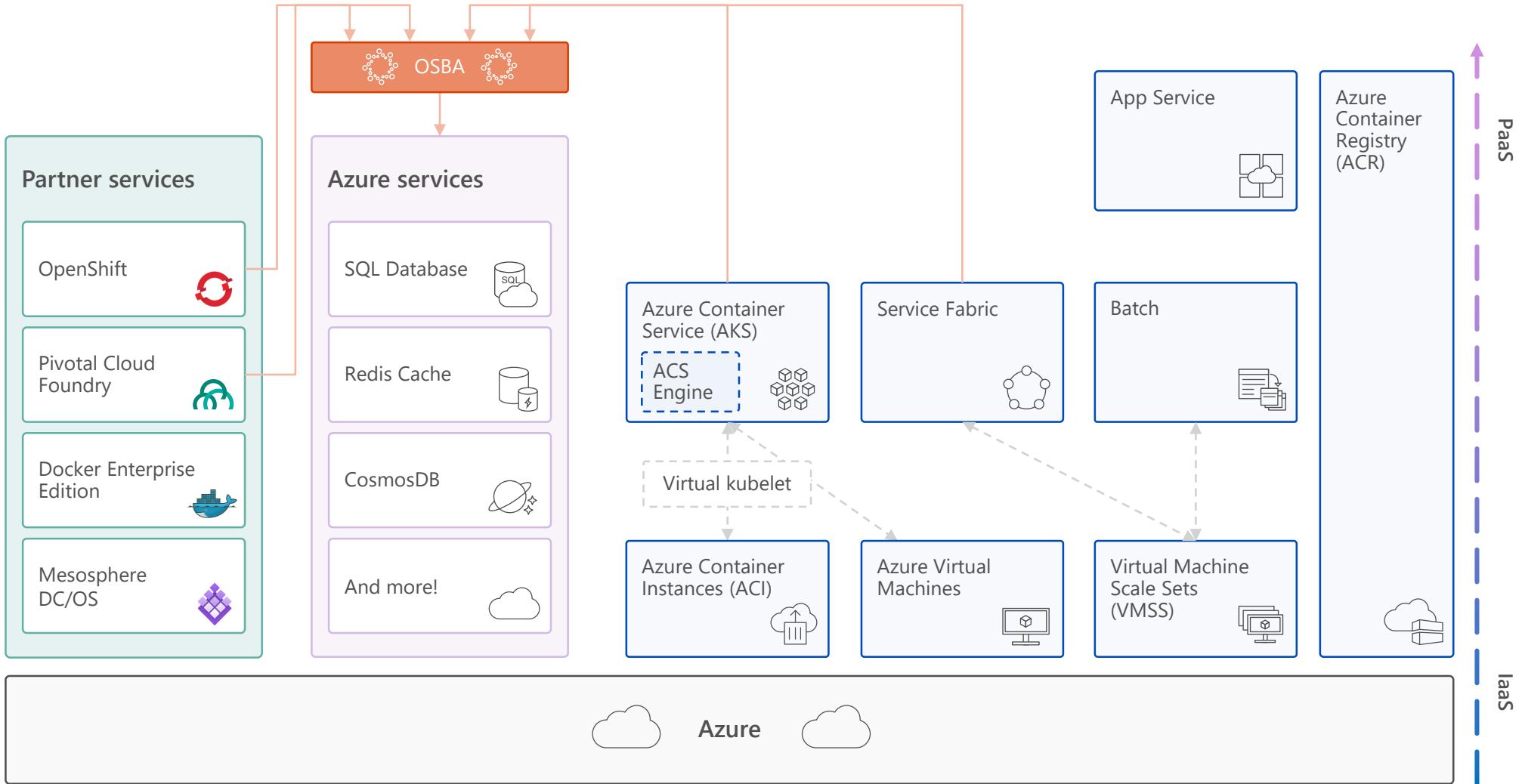
Familiar Open Source CLIs  
docker login, pull, push

# Open Service Broker for Azure





# Open Service Broker for Azure (OSBA)





Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



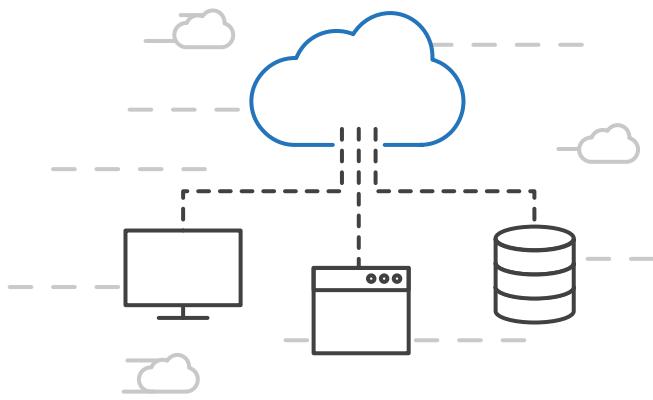
Open Service  
Broker API (OSBA)



Release  
Automation Tools

# Open Service Broker for Azure (OSBA)

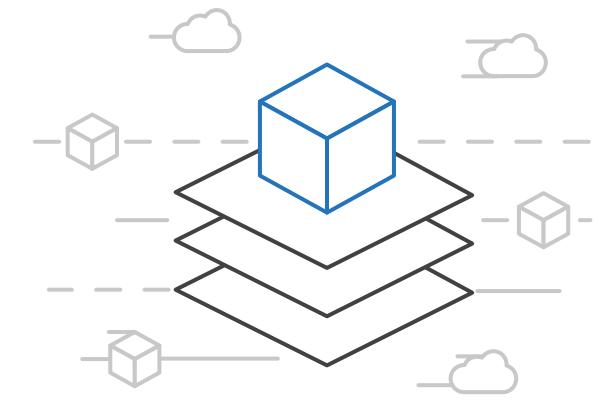
Connecting containers to Azure services and platforms



A standardized way to connect with Azure services



Simple and flexible service integration



Compatible across numerous platforms



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Open Service Broker for Azure (OSBA)

An implementation of the Open Service Broker API

Azure SQL Database



Redis Cache



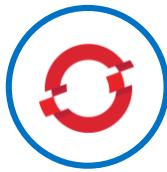
CosmosDB



And more!



Open Service Broker  
for Azure (OSBA)



OpenShift



Cloud Foundry



Service Fabric  
(Coming soon)



Kubernetes  
(AKS)



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Open Service Broker for Azure (OSBA)

## OSBA in action

```
seanmck@seanmck-mbp: ~/cloudfoundry/apps/cfnoderedis (zsh)
~/cloudfoundry/apps/cfnoderedis > master > |
```



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Open Service Broker for Azure (OSBA)

Getting started with ease

```
$ helm repo add azure Azure/helm-charts
```

```
$ helm install azure/service-broker
```

```
$ helm install azure/wordpress
```



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Open Service Broker for Azure (OSBA)

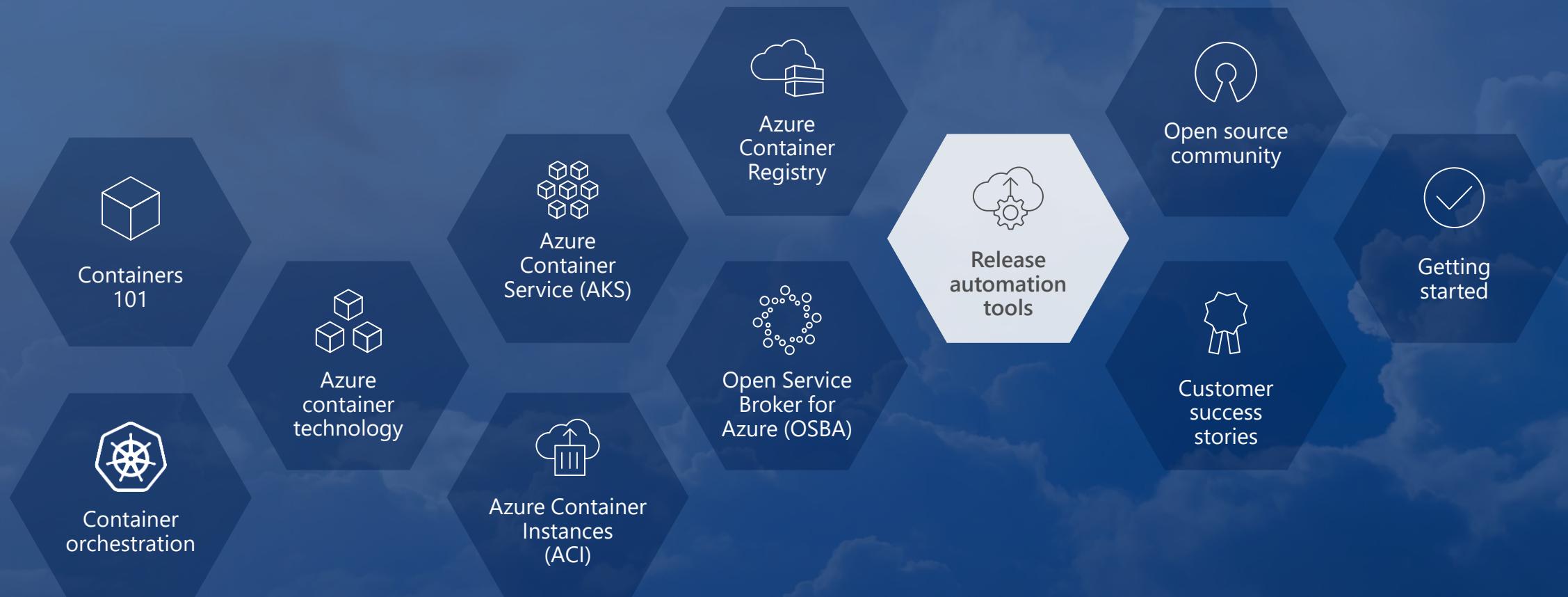
## Resources

- [OSBA announcement blog](#)
- [OSBA on GitHub](#)
- [Integrating with Azure-managed services using OSBA](#)

Open Service Broker for Azure



# Release automation tools





Azure Container  
Service (AKS)



Azure Container  
Instances (ACI)



Azure Container  
Registry



Open Service  
Broker API (OSBA)



Release  
Automation Tools

# Release automation tools

Simplifying the Kubernetes experience



Streamlined  
Kubernetes  
development



The package  
manager for  
Kubernetes



Event-driven  
scripting for  
Kubernetes

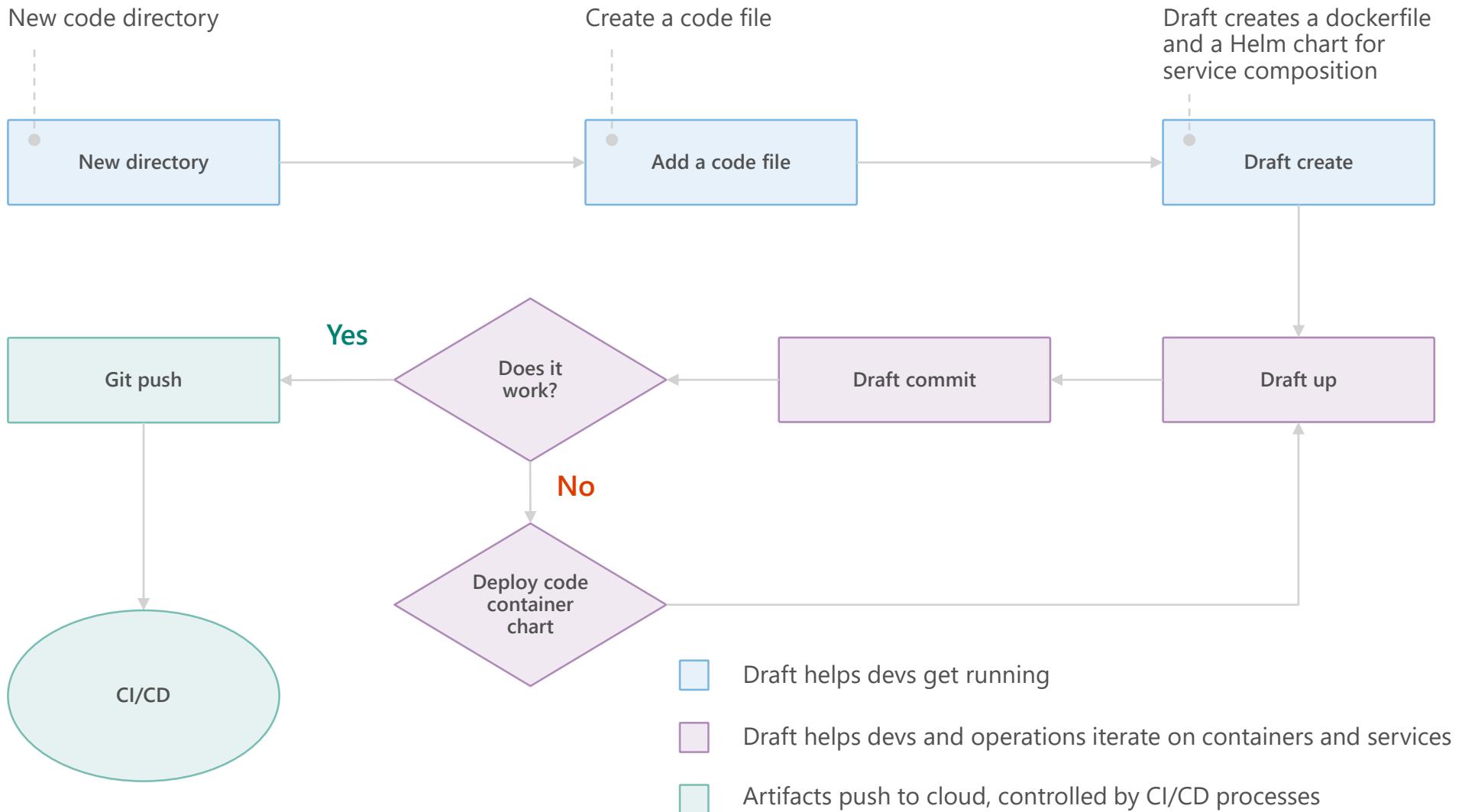


Visualization  
dashboard for  
Brigade





# Release automation workflow





Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



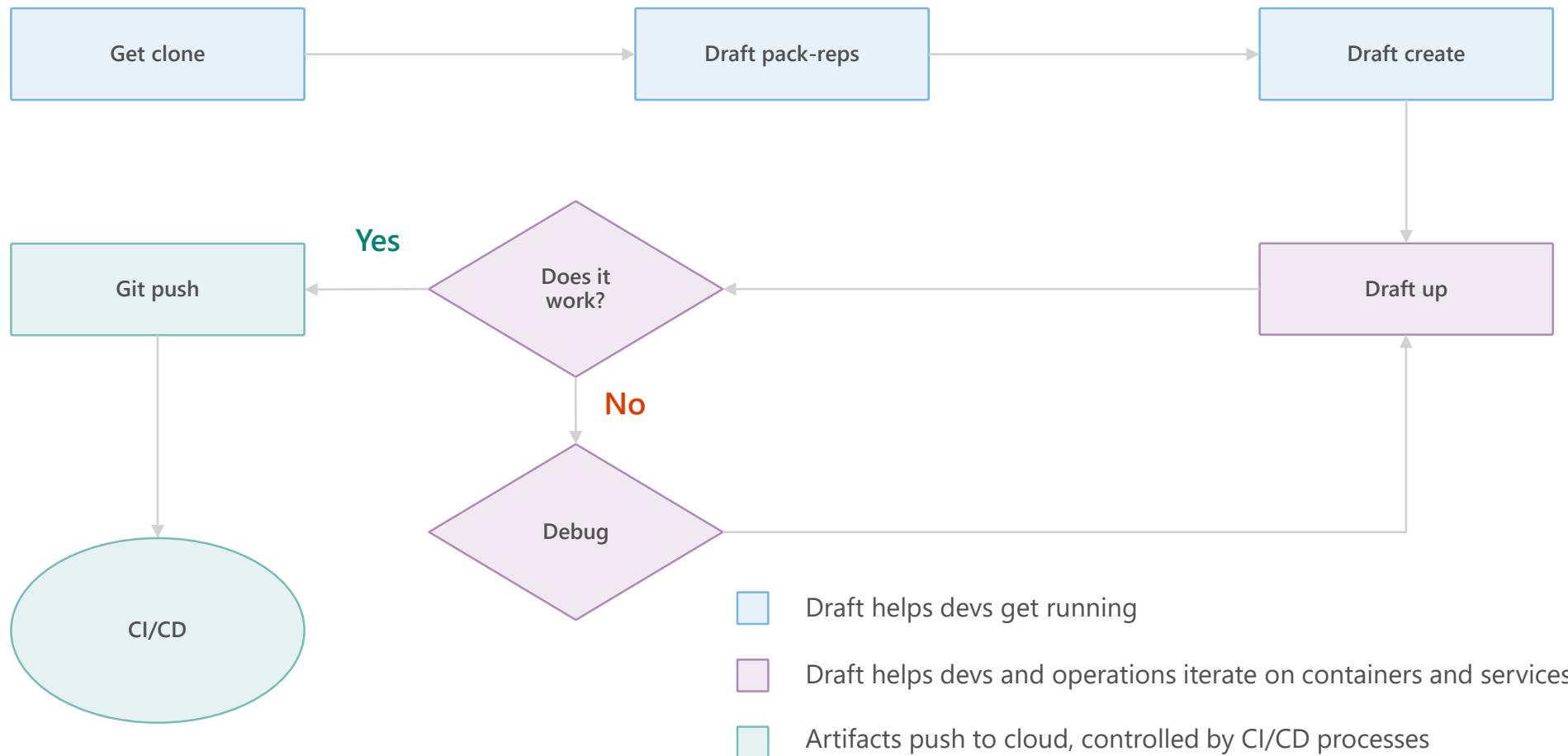
Open Service Broker API (OSBA)



Release Automation Tools

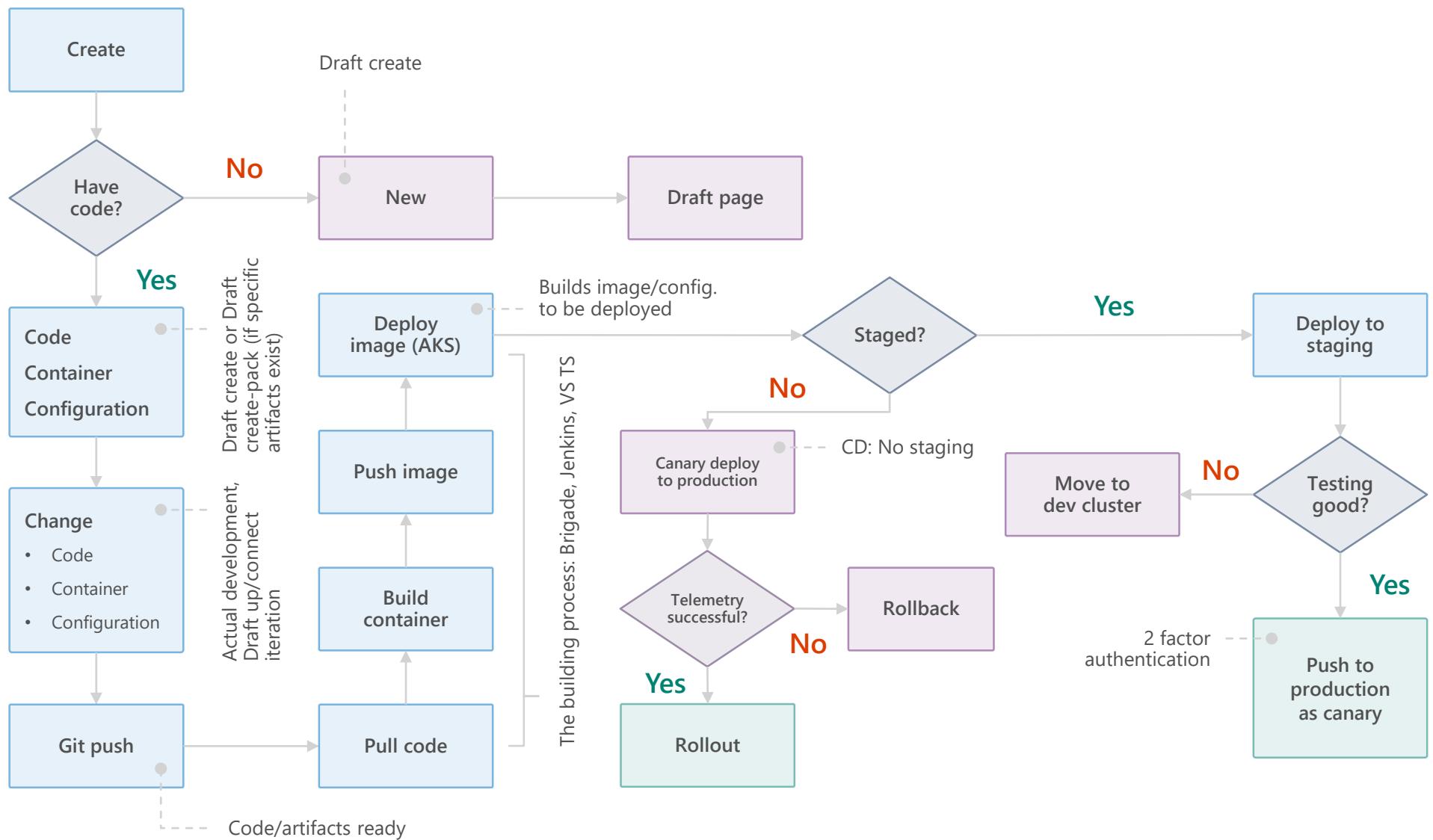
# Release automation workflow

Once developers are up and running—or working on a service that is in a complex system—Draft **ALSO** helps devs ignore artifacts and focus on code





# Release automation workflow





Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

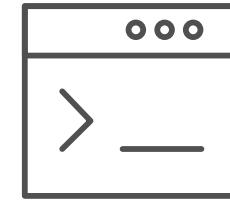
# Draft

Simple app development and deployment – into any Kubernetes cluster



## Simplified development

Using two simple commands, developers can now begin hacking on container-based applications without requiring Docker or even installing Kubernetes themselves



## Language support

Draft detects which language your app is written in, and then uses packs to generate a Dockerfile and Helm Chart with the best practices for that language



Azure Container  
Service (AKS)



Azure Container  
Instances (ACI)



Azure Container  
Registry



Open Service  
Broker API (OSBA)



Release  
Automation Tools

# Draft

## Draft in action





Azure Container  
Service (AKS)



Azure Container  
Instances (ACI)



Azure Container  
Registry



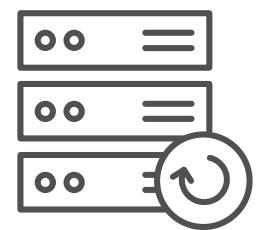
Open Service  
Broker API (OSBA)



Release  
Automation Tools

# Helm

The best way to find, share, and use software  
built for Kubernetes



## Manage complexity

Charts can describe complex apps; provide repeatable app installs, and serve as a single point of authority

## Easy updates

Take the pain out of updates with in-place upgrades and custom hooks

## Simple sharing

Charts are easy to version, share, and host on public or private servers

## Rollbacks

Use `helm rollout` to roll back to an older version of a release with ease



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



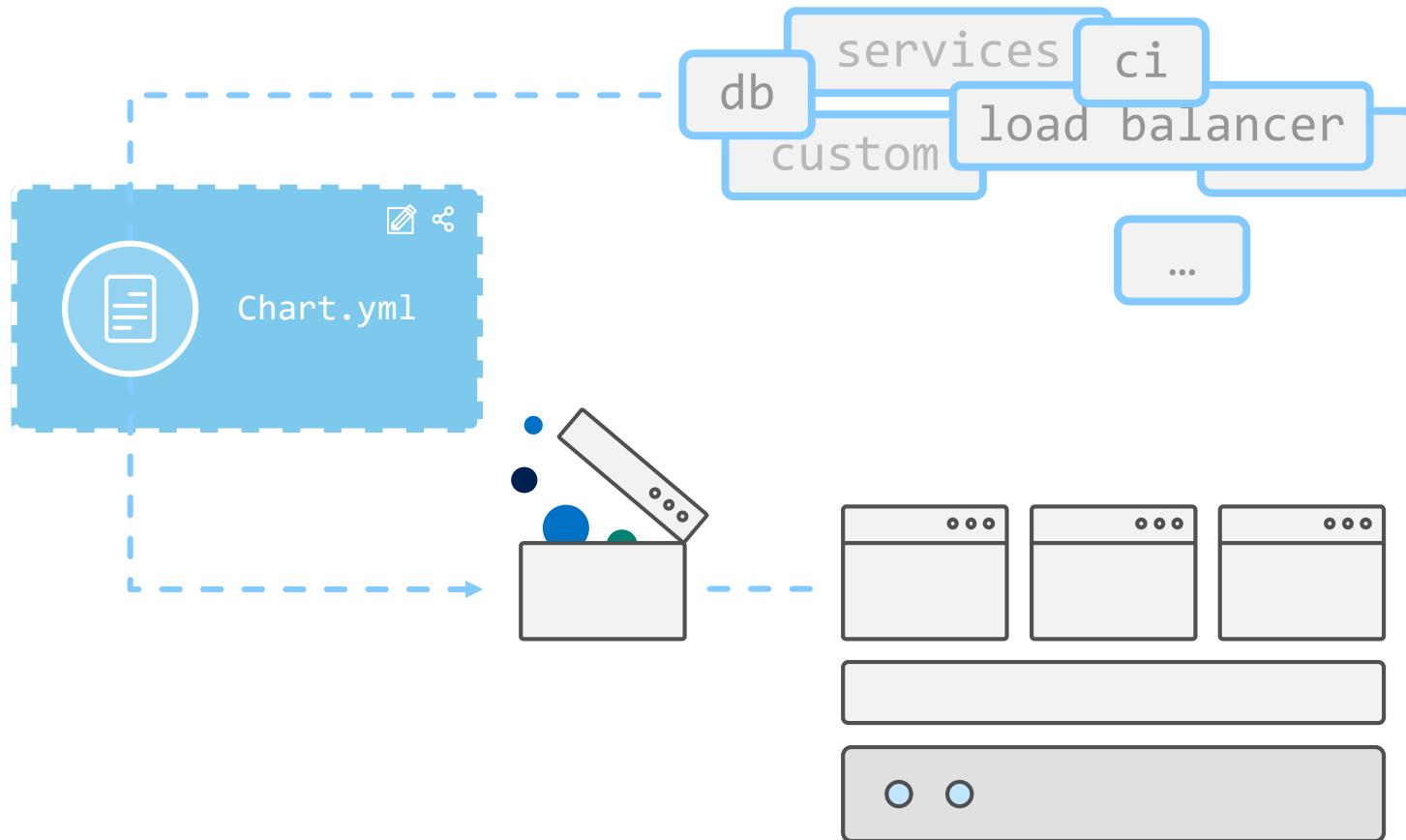
Open Service Broker API (OSBA)



Release Automation Tools

# Helm

Helm Charts helps you define, install, and upgrade even the most complex Kubernetes application





Azure Container  
Service (AKS)



Azure Container  
Instances (ACI)



Azure Container  
Registry



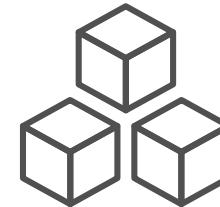
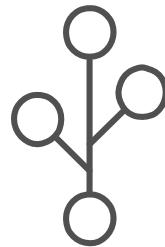
Open Service  
Broker API (OSBA)



Release  
Automation Tools

# Brigade

Run scriptable, automated tasks in the cloud — as part of your Kubernetes cluster



## Simple, powerful pipes

Each project gets a `brigade.js` config file, which is where you can write dynamic, interwoven pipelines and tasks for your Kubernetes cluster

## Runs inside your cluster

By running Brigade as a service inside your Kubernetes cluster, you can harness the power of millions of available Docker images



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Brigade

## Brigade in action

```
const { events, Job, Group } = require('brigadier')

events.on("push", (brigadeEvent, project) => {

    // setup variables
    var gitPayload = JSON.parse(brigadeEvent.payload)
    var brigConfig = new Map()
    brigConfig.set("acrServer", project.secrets.acrServer)
    brigConfig.set("acrUsername", project.secrets.acrUsername)
    brigConfig.set("acrPassword", project.secrets.acrPassword)
    brigConfig.set("dbImage", "chzbrgr71/rating-db")
    brigConfig.set("gitSHA", brigadeEvent.commit.substr(0,7))
    brigConfig.set("eventType", brigadeEvent.type)
    brigConfig.set("branch", getBranch(gitPayload))
    brigConfig.set("imageTag", `${brigConfig.get("branch")}-${brigConfig.get("branch")}`)
    brigConfig.set("dbACRImage", `${brigConfig.get("acrServer")}/${brigConfig.get("acrUsername")}`)

    console.log(`==> GitHub webhook ${brigConfig.get("branch")}) with commit ${gitPayload.sha}`)

    // setup brigade jobs
    var docker = new Job("job-runner-docker")
    var helm = new Job("job-runner-helm")
    dockerJobRunner(brigConfig, docker)
    helmJobRunner(brigConfig, helm, "prod")

    // start pipeline
    console.log(`==> starting pipeline for docker image: ${brigConfig.get("dbImage")}`)
    var pipeline = new Group()
    pipeline.add(docker)
    pipeline.add(helm)
```

File Explorer:

- OPEN EDITORS
  - Welcome
  - README.md
  - brigade.js
- RATING-DB
  - .gitignore
  - brig-project-update.yaml
  - brigade.js
  - db.yaml
  - heroes.json
  - import.sh
  - ratings.json
  - README.md
  - sites.json
- DOCKER
- AZURE STORAGE
- AZURE COSMOS DB
- KUBERNETES

Bottom status bar:

draft-pack-version+ 0 0 0 Azure: rasquill@microsoft.com Ln 78, Col 2 Spaces: 4 UTF-8 LF JavaScript ☺



Azure Container  
Service (AKS)



Azure Container  
Instances (ACI)



Azure Container  
Registry



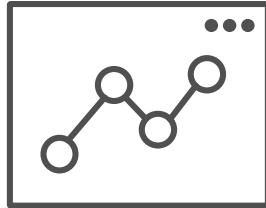
Open Service  
Broker API (OSBA)



Release  
Automation Tools

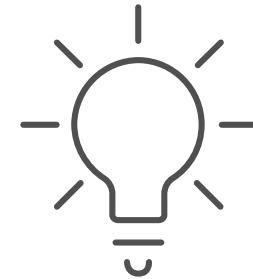
# Kashti

A simple UI to display build results and logs



## Simple visualizations

A web dashboard for Brigade, helping to easily visualize and inspect your Brigade builds



## Driving deep insights

Make Brigade DevOps workflows—projects, scripts, and jobs—and their events visible instantly





Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

# Kashti

## Dashboards for Brigade pipelines

**Build #01C0HX5S1GH7A0TZBJA2EYG7R1** Passed

Started at 2017-12-23T07:31:49Z | Finished at 2017-12-23T07:36:44Z

[build](#) | [Hide Build Timeline](#)

1 job ran inside this build:

brigade-cli : build started a build via commit #master

Started at 12/22/2017 @ 11:31PM -0800

**build**

Image: node:8  
ID: build-1514014319426-master  
Log output:

```
yarn install v1.3.2
[1/5] Validating package.json...
[2/5] Resolving packages...
[3/5] Fetching packages...
info fsevents@1.1.3: The platform "linux" is incompatible with this module.
info "fsevents@1.1.3" is an optional dependency and failed compatibility check. Excluding it from installation.
```

Builds dashboard

**Azure/kashti**

<https://github.com/Azure/kashti.git>  
Sidecar:  
Namespace: default

| Job Status | Image       | Branch | Commit Hash                  | Last Run               | Ran for              | Details                      |
|------------|-------------|--------|------------------------------|------------------------|----------------------|------------------------------|
| ✓          | brigade-cli | master | #01c0hx5s1gh7a0tzbja2eyg7r1  | Succeeded a month ago. | Ran for 295 seconds. | <a href="#">Details &gt;</a> |
| ✗          | brigade-cli | master | #01c0hx0yxqa15t7fdcqe7errw   | Failed a month ago.    | Ran for 268 seconds. | <a href="#">Details &gt;</a> |
| ✗          | brigade-cli | master | #01c0hmmh4h4lx0mq/z9sr794cr  | Failed a month ago.    | Ran for 11 seconds.  | <a href="#">Details &gt;</a> |
| ✗          | brigade-cli | master | #01c0hmj9cfxr6eb6cq818yac5n  | Failed a month ago.    | Ran for 35 seconds.  | <a href="#">Details &gt;</a> |
| ✗          | brigade-cli | master | #01c0hmawqnqw9332yg1wd4jggah | Failed a month ago.    | Ran for 68 seconds.  | <a href="#">Details &gt;</a> |
| ✗          | brigade-cli | master | #01c0hm8ekar4vbypd93d475mt   | Failed a month ago.    | Ran for 49 seconds.  | <a href="#">Details &gt;</a> |
| ✓          | brigade-cli | master | #01c0hm249jgz2jcie4wj2cf0sn  | Succeeded a month ago. | Ran for 106 seconds. | <a href="#">Details &gt;</a> |
| ✗          | brigade-cli | master | #01c0hloxb91dkxzshp58tx18qcf | Failed a month ago.    | Ran for 70 seconds.  | <a href="#">Details &gt;</a> |
| ✗          | brigade-cli | master | #01c0hkwhmegs7ywvvjzbngcbhb  | Failed a month ago.    | Ran for 8 seconds.   | <a href="#">Details &gt;</a> |

Events log



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



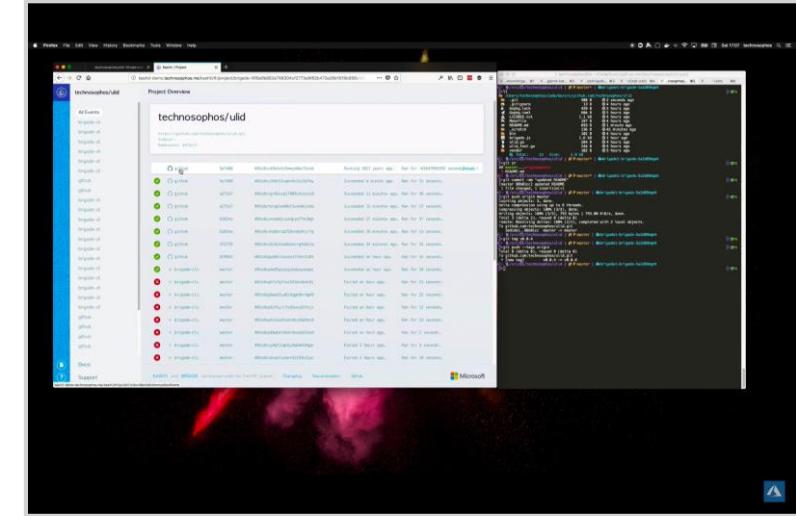
Release Automation Tools

# Release automation tools

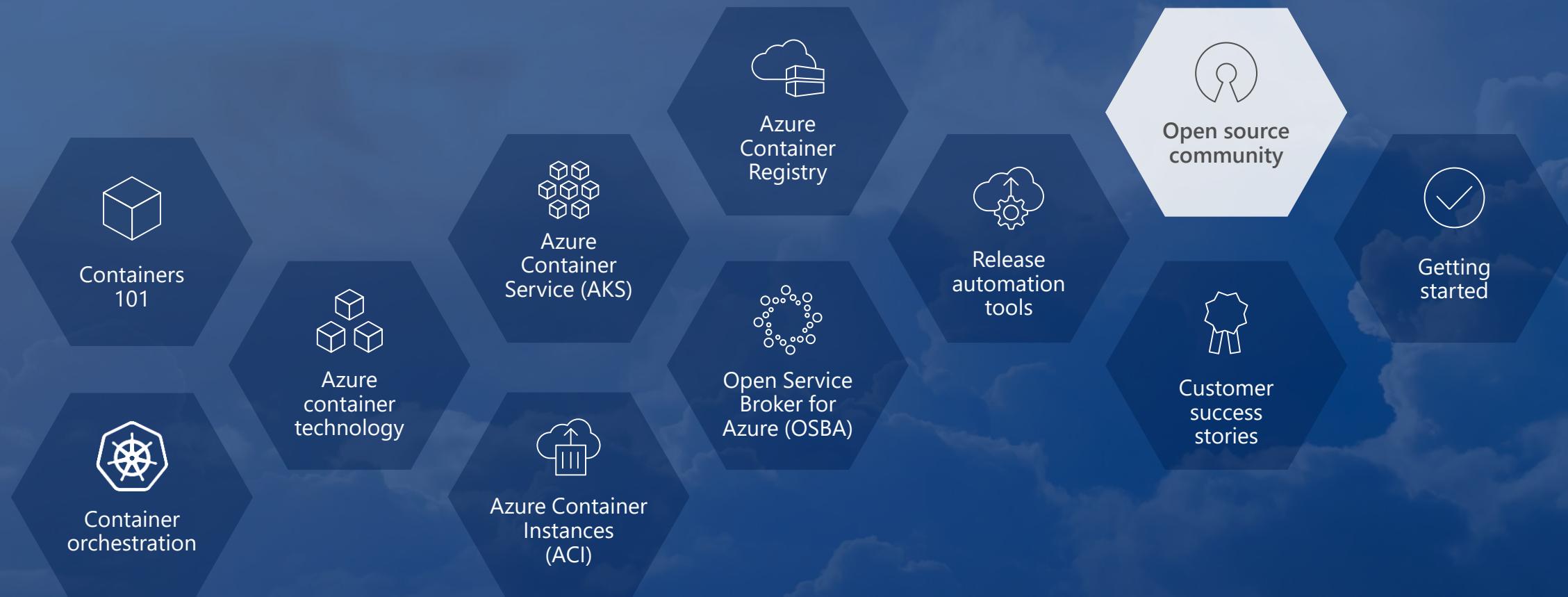
## Resources

- [Draft webpage](#)
- [Helm webpage](#)
- [Brigade webpage](#)
- [Kashti announcement blog](#)

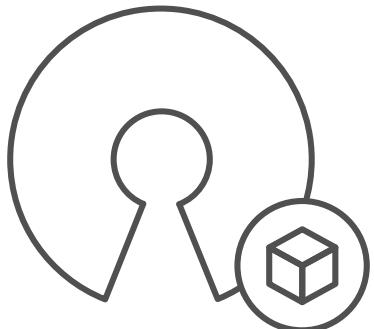
Brigade Demo with Kashti dashboard



# Open source community



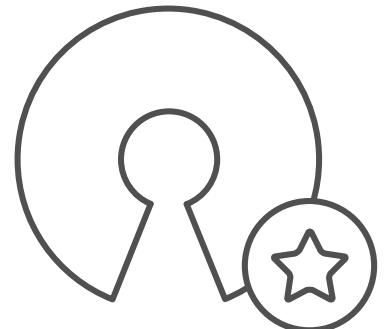
# Community culture



Open source container  
code contributions



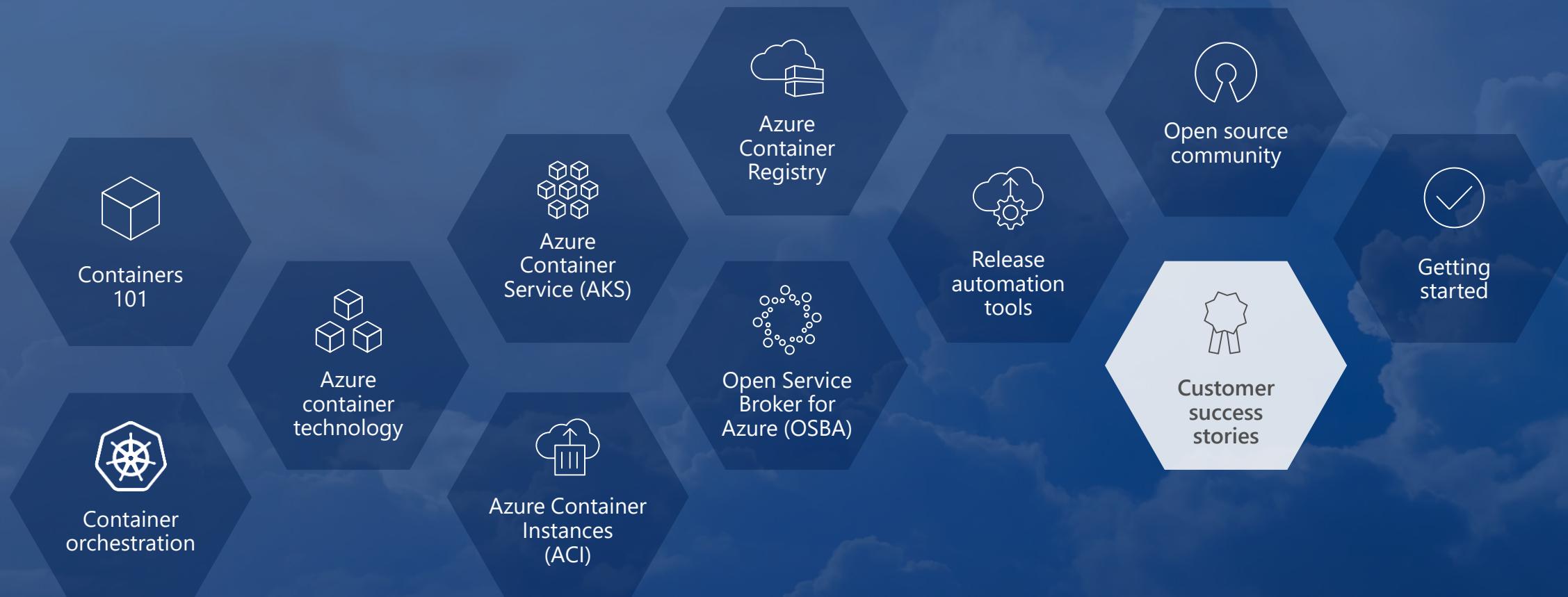
Numerous open source  
project builds



Open source community  
leadership



# Customer success stories





# Energy company electrifies pace of innovation and expansion

An aerial photograph showing a large-scale solar panel farm in the foreground and middle ground, with a patch of dry, brown grass in the center. The solar panels are arranged in long, horizontal rows.

Ambit Energy provides electricity and natural-gas services in deregulated markets around the world. It uses technology as a competitive differentiator, employing microservices, DevOps, and continuous deployment to speed software development. To stand up infrastructure just as quickly, Ambit uses Microsoft Azure services such as Azure Container Service, together with infrastructure as code and open source technologies, to completely automate infrastructure provisioning. By implementing Azure, Ambit can move dramatically faster to enhance its services and enter new markets. Infrastructure redundancy is flexible and worry-free. And costs are 22 percent lower, which helps Ambit compete in the crowded electricity market. Because Ambit's cloud journey is gradual, it appreciates the fact that Azure is a great hybrid-cloud enabler, connecting easily to Ambit datacenters.



## Products and services

Microsoft Azure  
Container Service

## Organization size

1,000 employees

## Industry

Power and utilities

## Country

United States

## Business need

Optimize operational efficiency





Azure



## Siemens Health leverages technology to connect medical devices to the cloud through AKS

Digitization and networking between healthcare providers and software development companies are essential to value-based care. Moving from the development of value-added services into becoming more of a platform provider, it became important for Siemens to adopt a microservices approach to application delivery. To that end, Siemens adopted Azure Container Service (AKS) to run their microservices-based apps. AKS puts Siemens in a position not only to deploy business logic in Docker containers—including the orchestration—but also enables them to use an applicant gateway and API management to manage exposure, control, and to meter the access continuously. With their cloud-based development approach, Siemens has driven newfound product development agility. This project is already having a positive impact within the healthcare industry.

**SIEMENS**

### Products and services

Microsoft Azure  
Container Service

### Organization size

100,000+ employees

### Industry

Healthcare

### Country

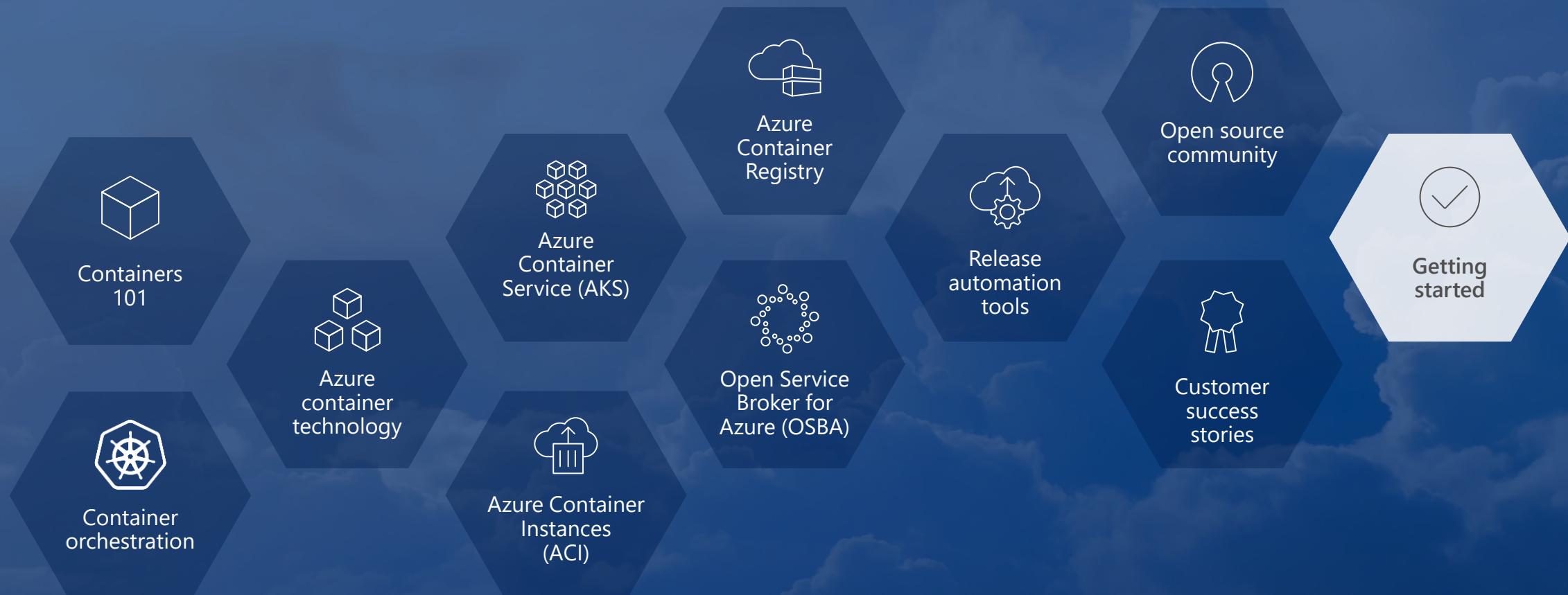
Germany

### Business need

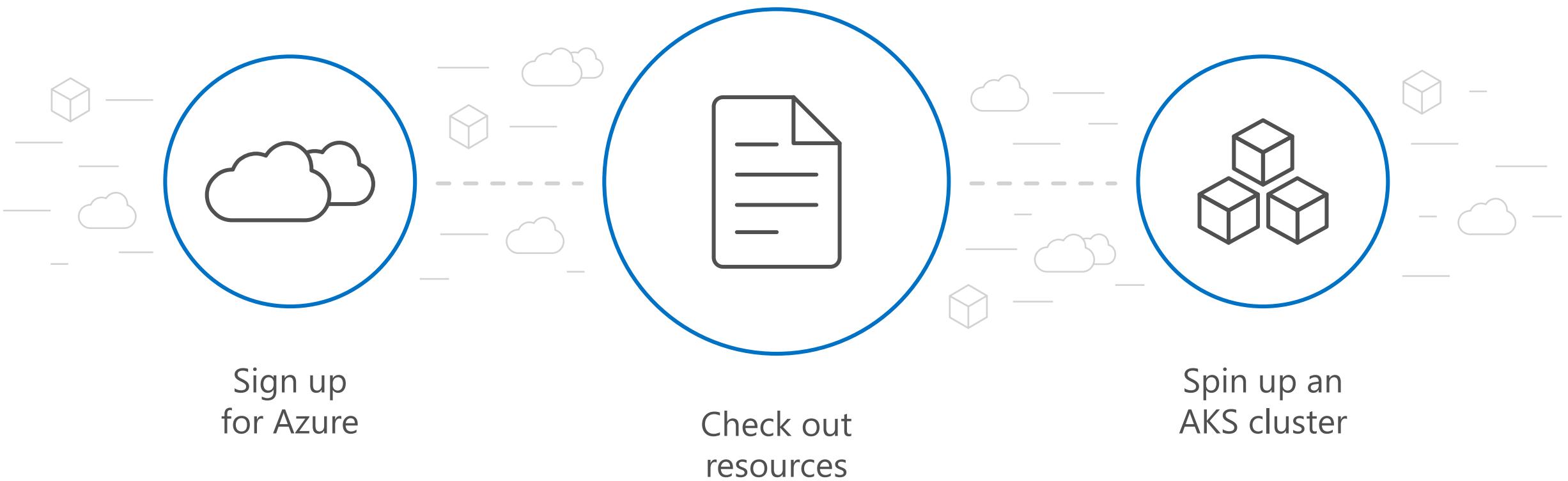
Faster application  
development



# Getting started



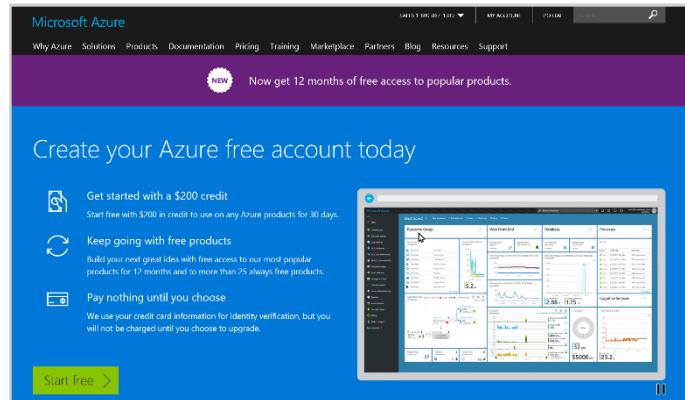
# Get started **today!**



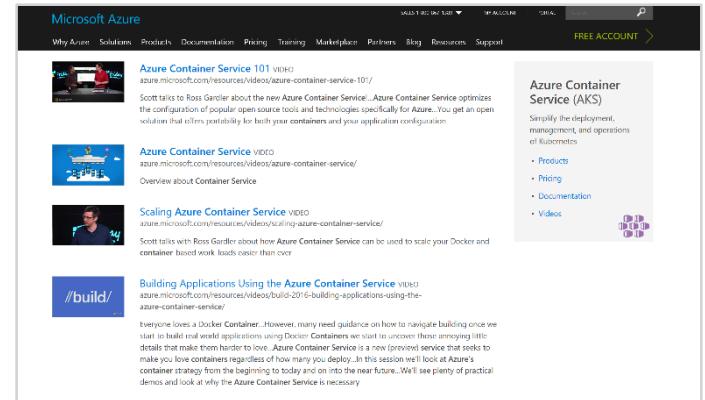
# Check out resources

- [Azure Container Service \(AKS\)](#)
- [Azure Container Instances \(ACI\)](#)
- [Azure Container Registry](#)
- [OSBA announcement blog](#)
- [Draft webpage](#)
- [Helm webpage](#)
- [Brigade webpage](#)
- [Kashti announcement blog](#)

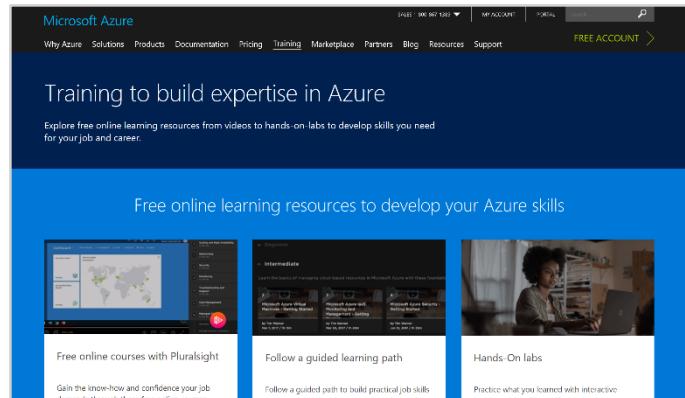
## Sign up for a free Azure account



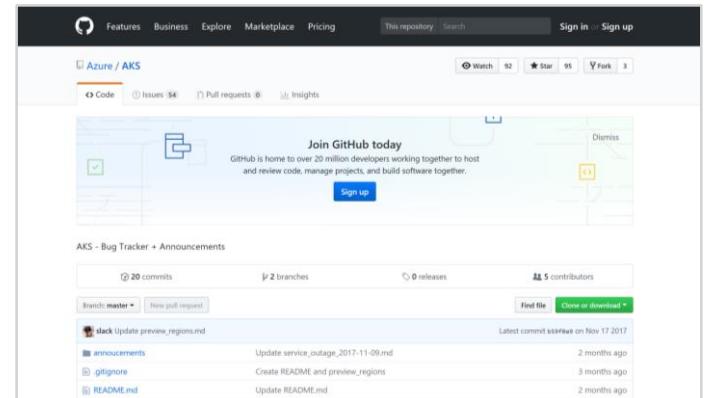
## Check out the Azure container videos page



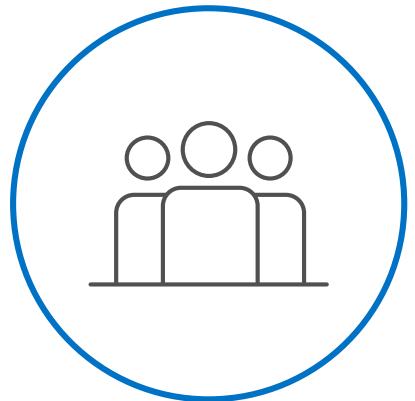
## Hone your skills with Azure training



## Get the code from GitHub



# Connect with us



## Core team

PM: Gabe Monroy, [@gabrtv](#)

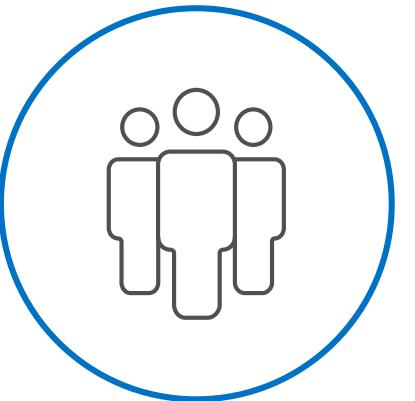
PM: Sean McKenna

OSS: David Dennis

PMM: Anand Chandramohan

DX: Jim Zimmerman

CDA: Bryan Liston



## Community

Brendan Burns, [@brendandburns](#)

Michelle Noorali



## Partner team

Morgan Pettis

Leon Jones

Dan Sandlin