



# 從微軟觀點探討 Kubernetes

Perl Tsai

CSA

Microsoft GCR

# Azure Container Family

- Azure Container Instances (ACI)
- Azure Container Service (AKS)
- ACS Engine
- ACI Connector for Kubernetes
- Open Service Broker for Azure (OSBA)
- Kubernetes Developer Tools

# 微軟對○

- Microsoft
- Developer
- SO
- Microsoft



the most open source

16,419

15,682

14,059

12,841

12,140

9,698

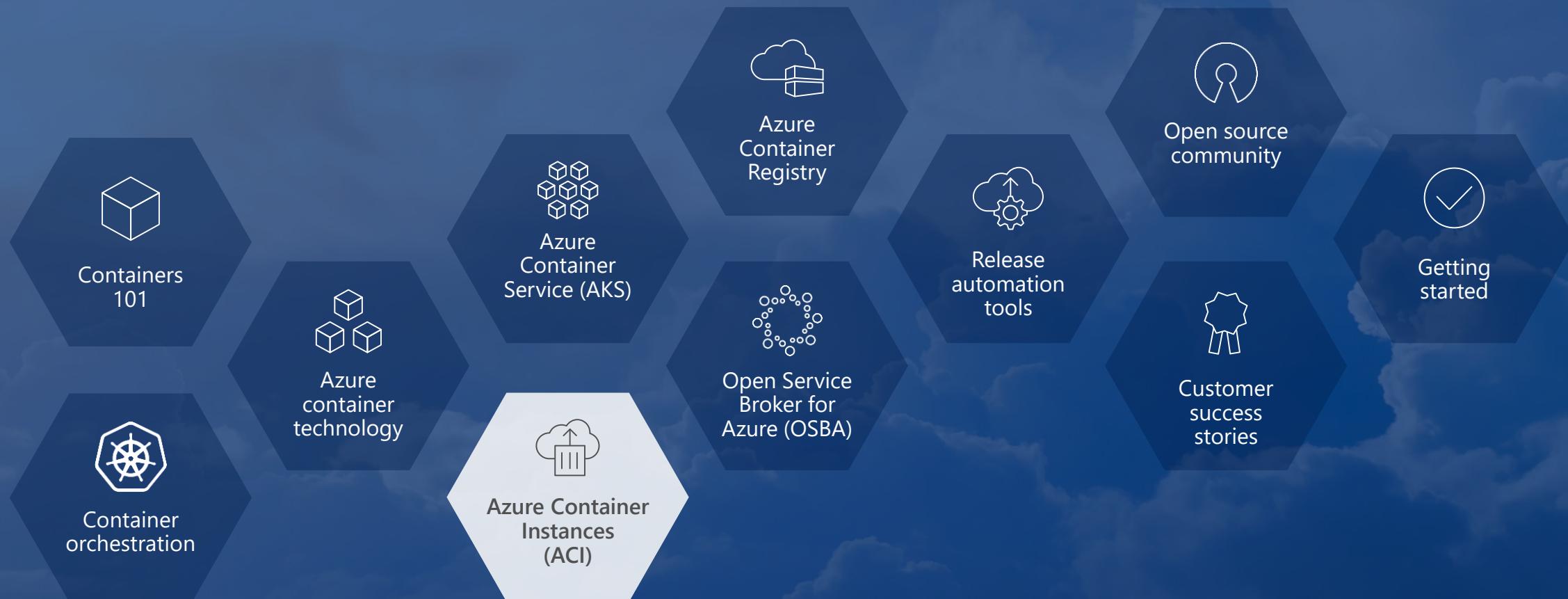
9,617

7,220

6,999

6,815

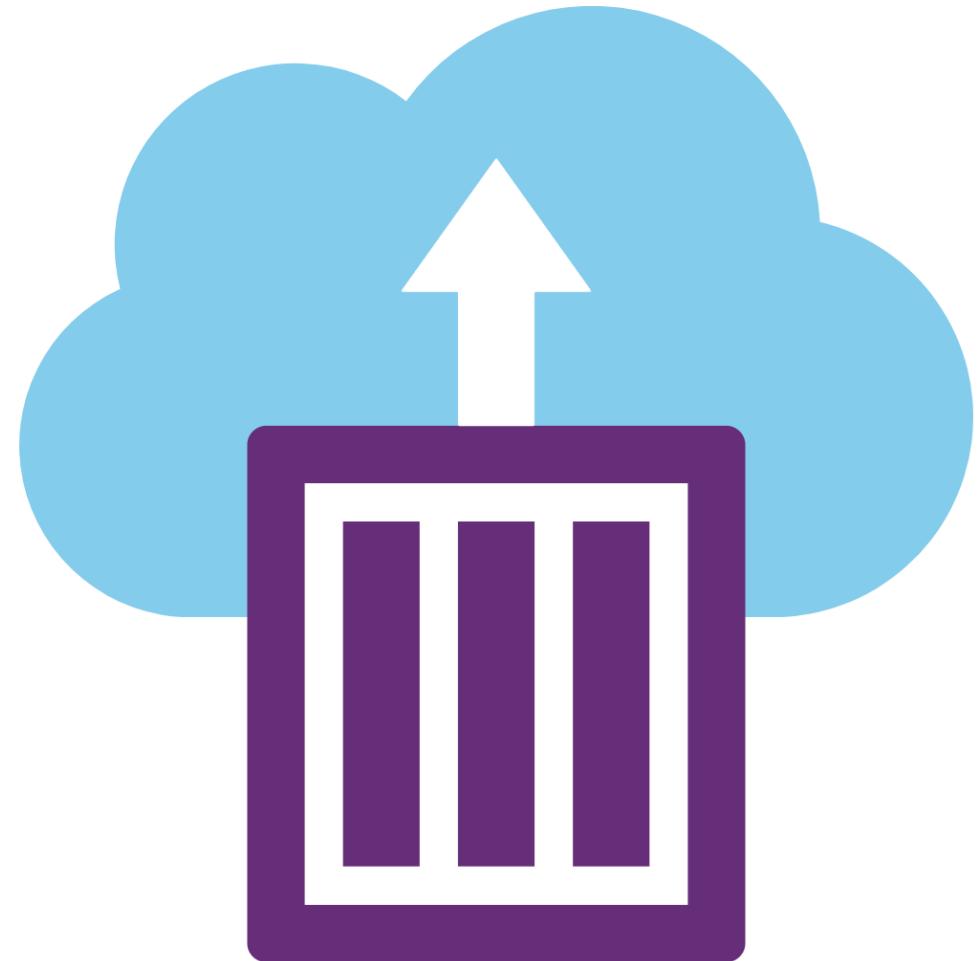
# Azure Container Instances (ACI)



Your container,  
running in Azure

# Azure Container Instances

- Start in seconds
- No VM management
- Custom CPU/memory
- Billed per second
- Hypervisor-level isolation
- Linux and Windows containers



# Getting Started with ACI

```
$ az container create --name perlcontainer --image microsoft/aci-helloworld --resource-group K8SSummit2018 --ip-address public
```

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

```
$ curl 52.168.86.133
```

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

# Use Cases for ACI Today

- Lift and shift into containers
- Simple web services
- Compute intensive workloads
- Batch processing
- CI agents

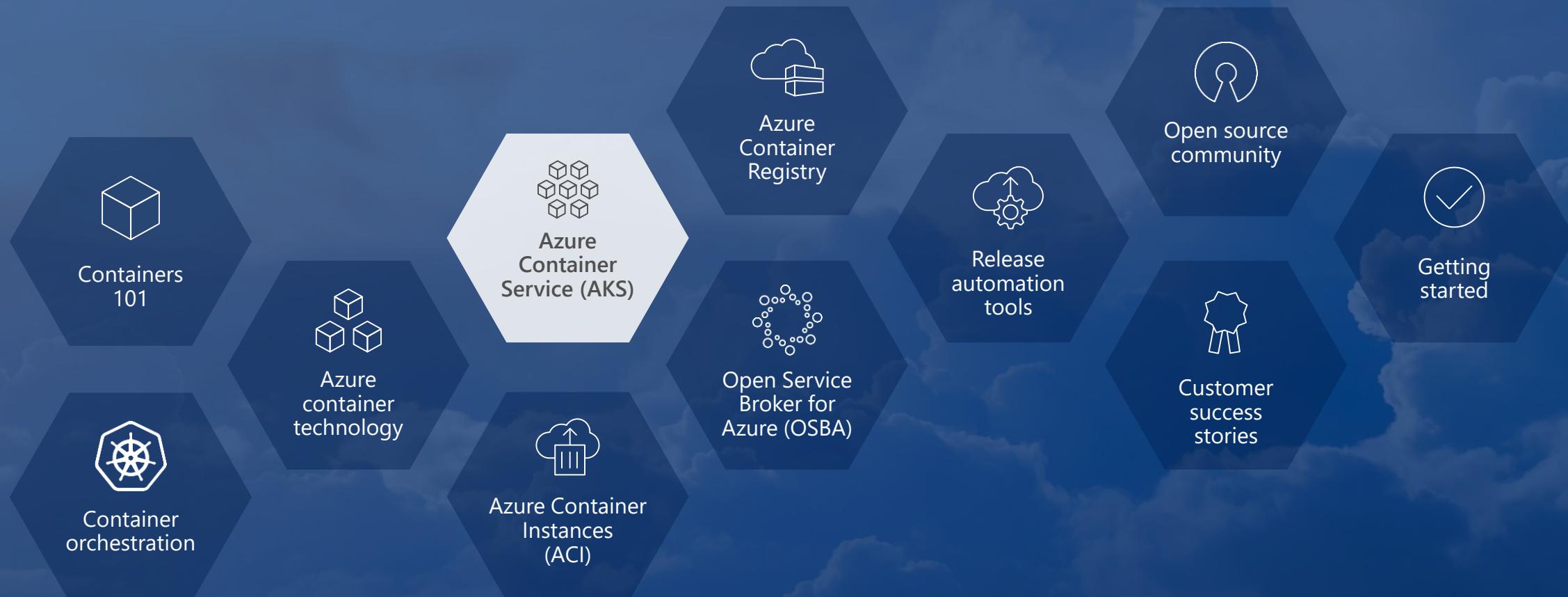


# ACI Permanent Limitations

- **No support for:**
  - Zero-downtime upgrades
  - Maintain > 1 running replicas
  - Batch workflows
  - Service discovery
  - Integrated load balancing
  - Auto-scaling

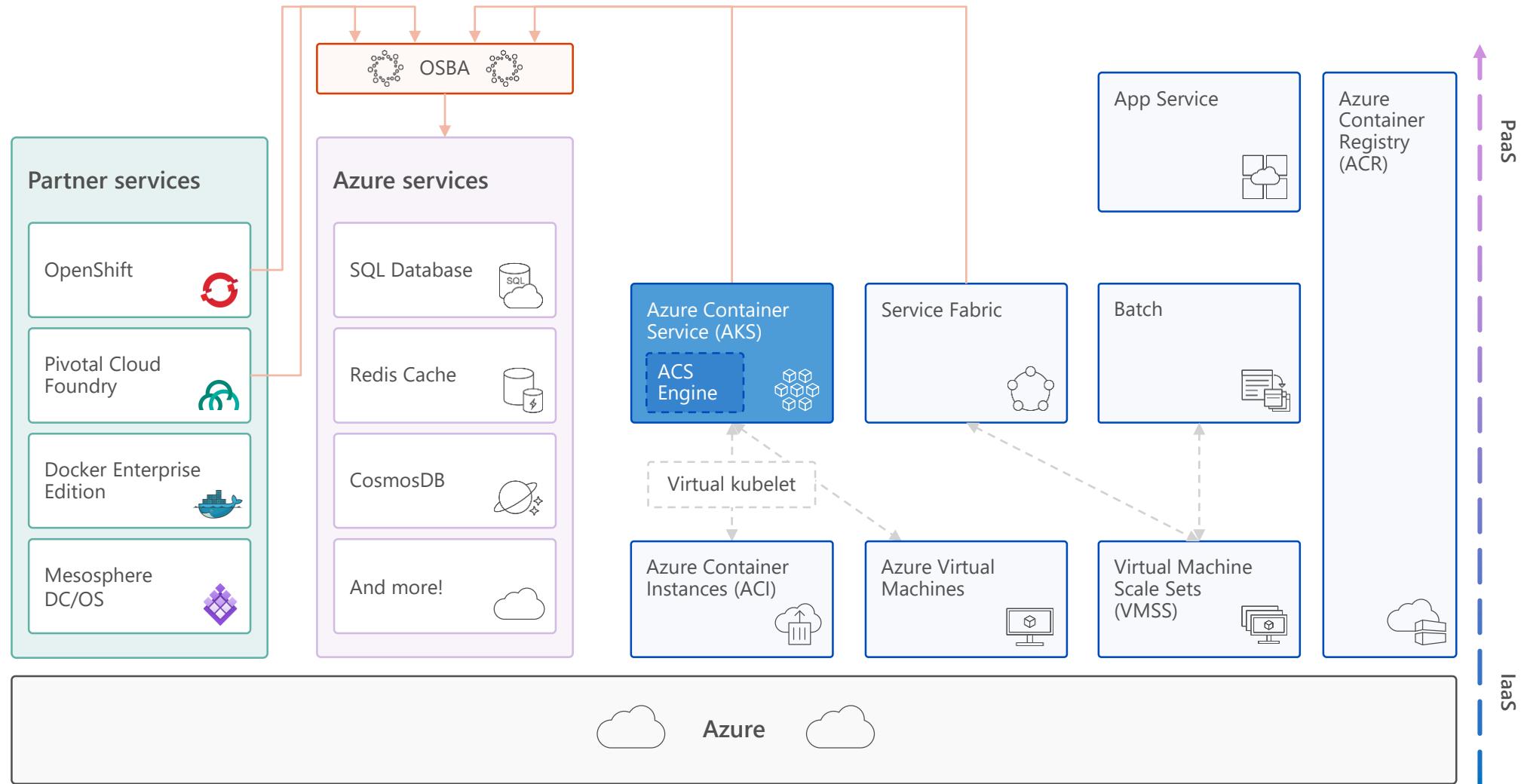
*If you need these features, you probably need an orchestrator*

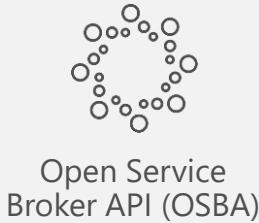
# Azure Container Service (AKS)





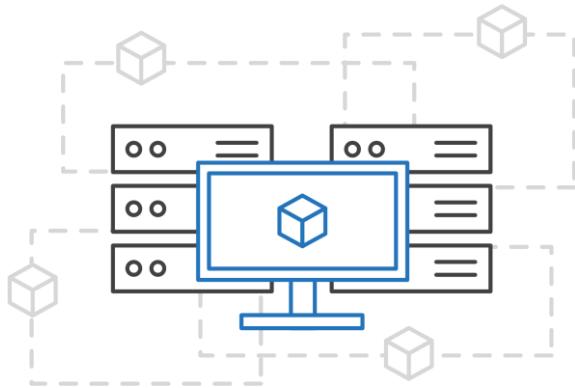
# Azure Container Service (AKS)





# Azure Container Service (AKS)

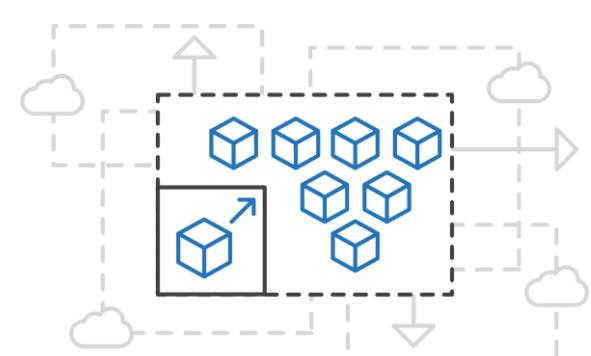
Simplify the deployment, management, and operations of Kubernetes



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



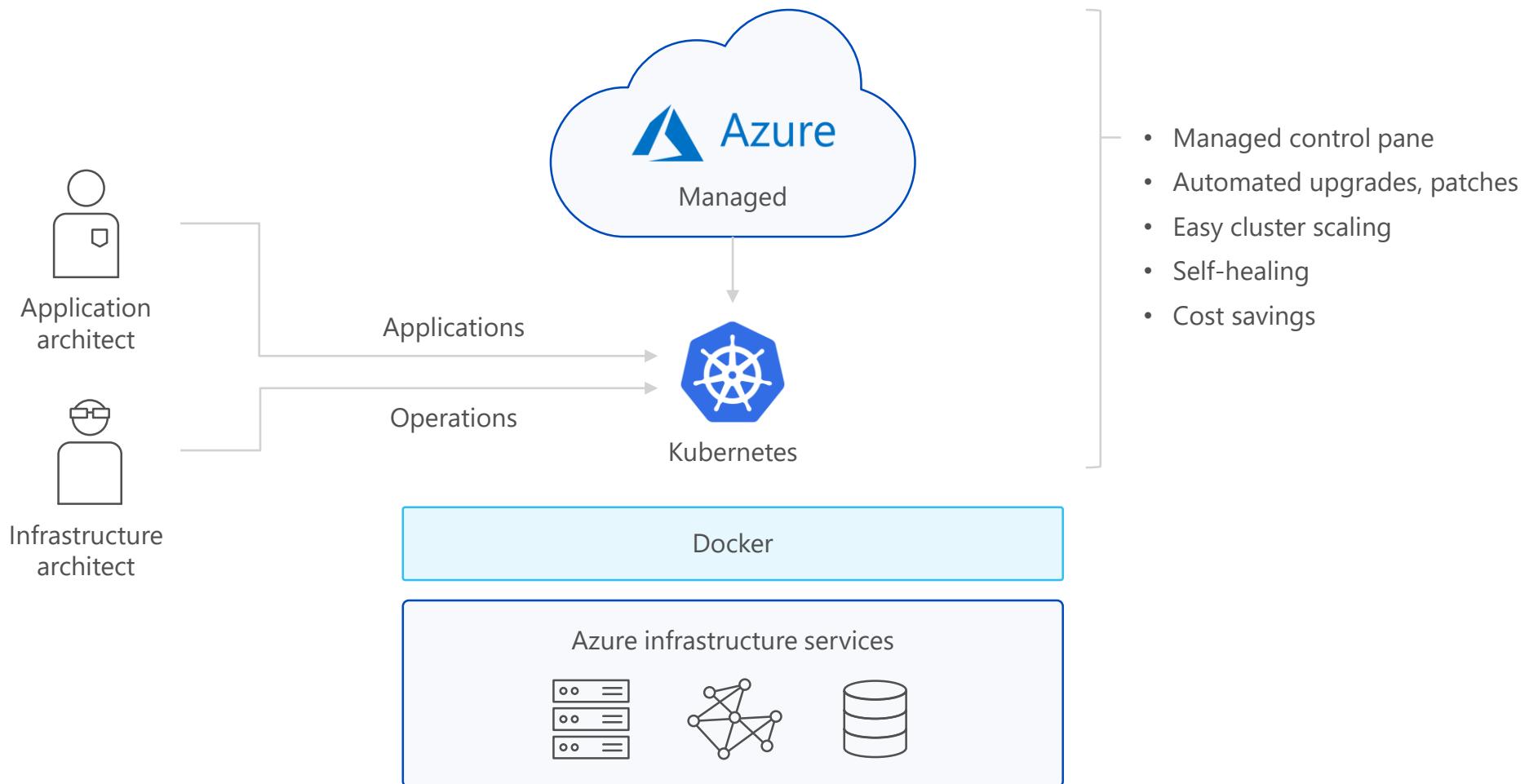
Open Service Broker API (OSBA)



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 K8SSummit2018 -n PerlCluster --generate-ssh-keys  
\\ Running ..
```

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

```
$ az aks get-credentials -g K8SSummit2018 -n PerlCluster  
Merged "PerlCluster" as current context ..
```

```
$ kubectl get nodes
```

NAME	STATUS	AGE	VERSION
aks-Perlcluster-36851231-0	Ready	4m	v1.8.1
aks-Perlcluster-36851231-1	Ready	4m	v1.8.1
aks-Perlcluster-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
PerlCluster	westus2	K8SSummit2018	1.7.7	Succeeded

```
$ az aks upgrade -g K8SSummit2018 -n PerlCluster --kubernetes-version 1.8.1
\ Running ..
```

```
$ kubectl get nodes
```

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

```
$ az aks scale -g K8SSummit2018 -n PerlCluster --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. The left sidebar includes 'Create a resource', 'All services', 'FAVORITES' (Dashboard, All resources, Resource groups, App Services, SQL databases, Azure Cosmos DB), and 'Containers'. The main area shows the 'Azure Marketplace' and 'Featured' sections. The 'Containers' section is highlighted with a dashed blue box. The 'Azure Container Service - AKS (preview)' item is also highlighted with a dashed blue box. Other items in the 'Featured' section include 'Azure Container Service', 'Azure Container Instances (preview)', and 'Azure Container Registry'.

Microsoft Azure

Report a bug

Search resources, services and more

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

Get started

Recently created

Compute

Networking

Storage

Web + Mobile

Containers

Databases

Data + Analytics

Featured

See all

Azure Container Service - AKS (preview)

PREVIEW

Azure Container Service

Azure Container Instances (preview)

Azure Container Registry



Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



Open Service Broker API (OSBA)



Release Automation Tools

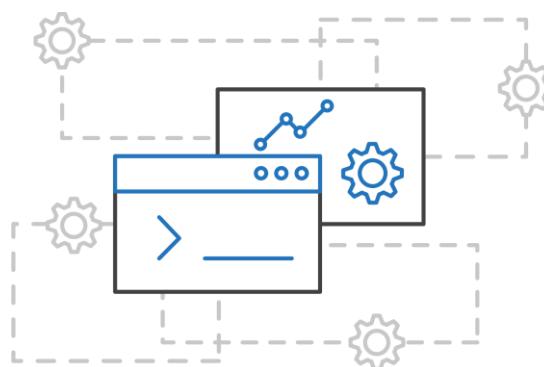
# Azure AKS 經過許久的期待，終於 GA

- 支援更多區域, 未來會支援更多區域
- 支援 RBAC
- 支援AAD驗證
- 網路設定更佳，支援部署到現有VNet(portal就可設定 )
- 支援Terraform跟ARM Template部署
- 代管費用**維持免費**
- 支援部署GPU node
- 支援Azure Files & Azure Disk
- 支援Helm package manager

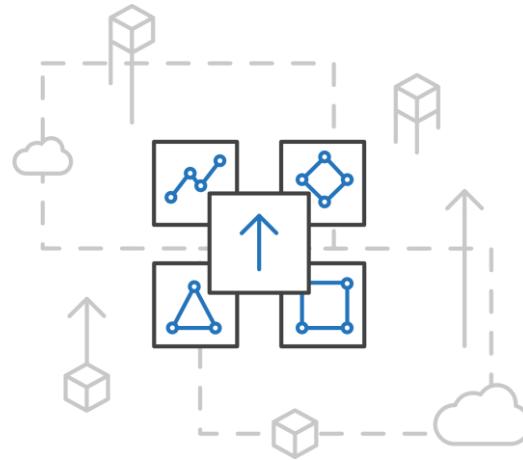


# Azure Container Service (AKS)

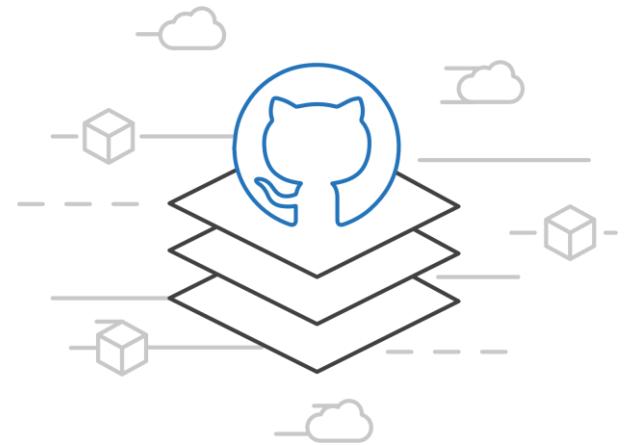
## Azure Container Service Engine



A proving ground  
for new features

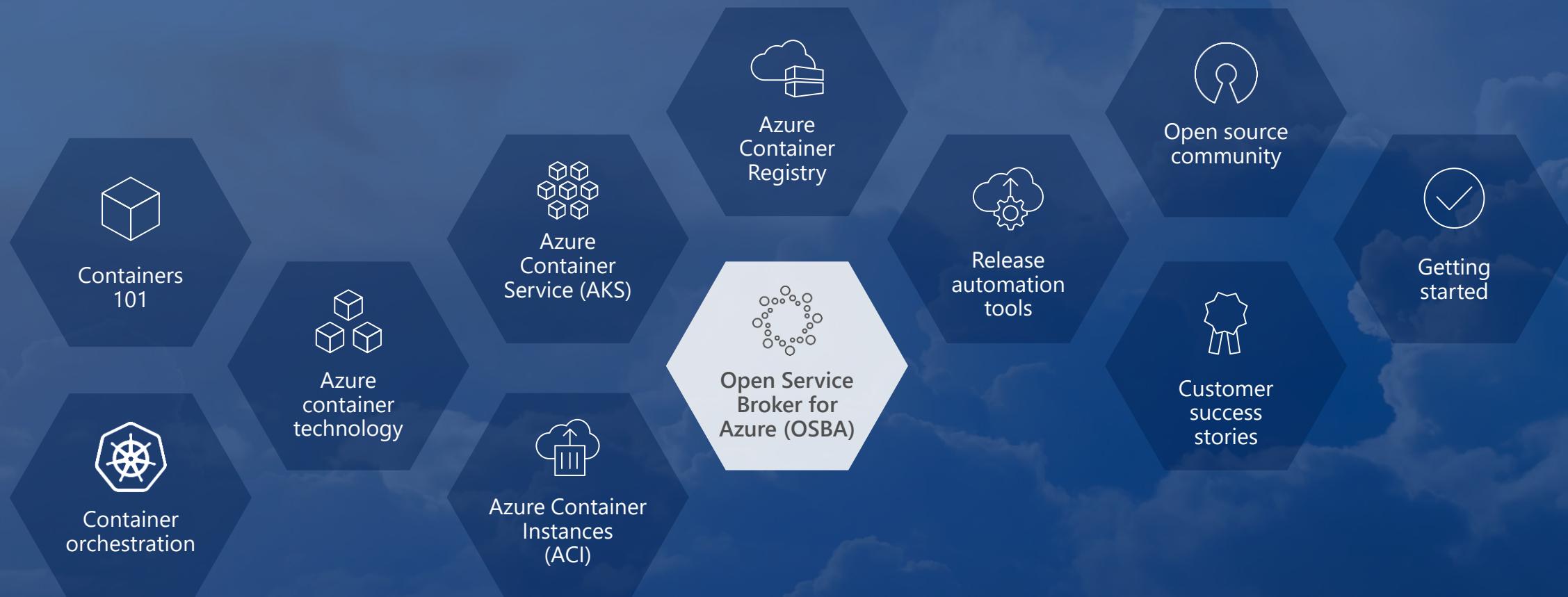


Enables custom  
deployments



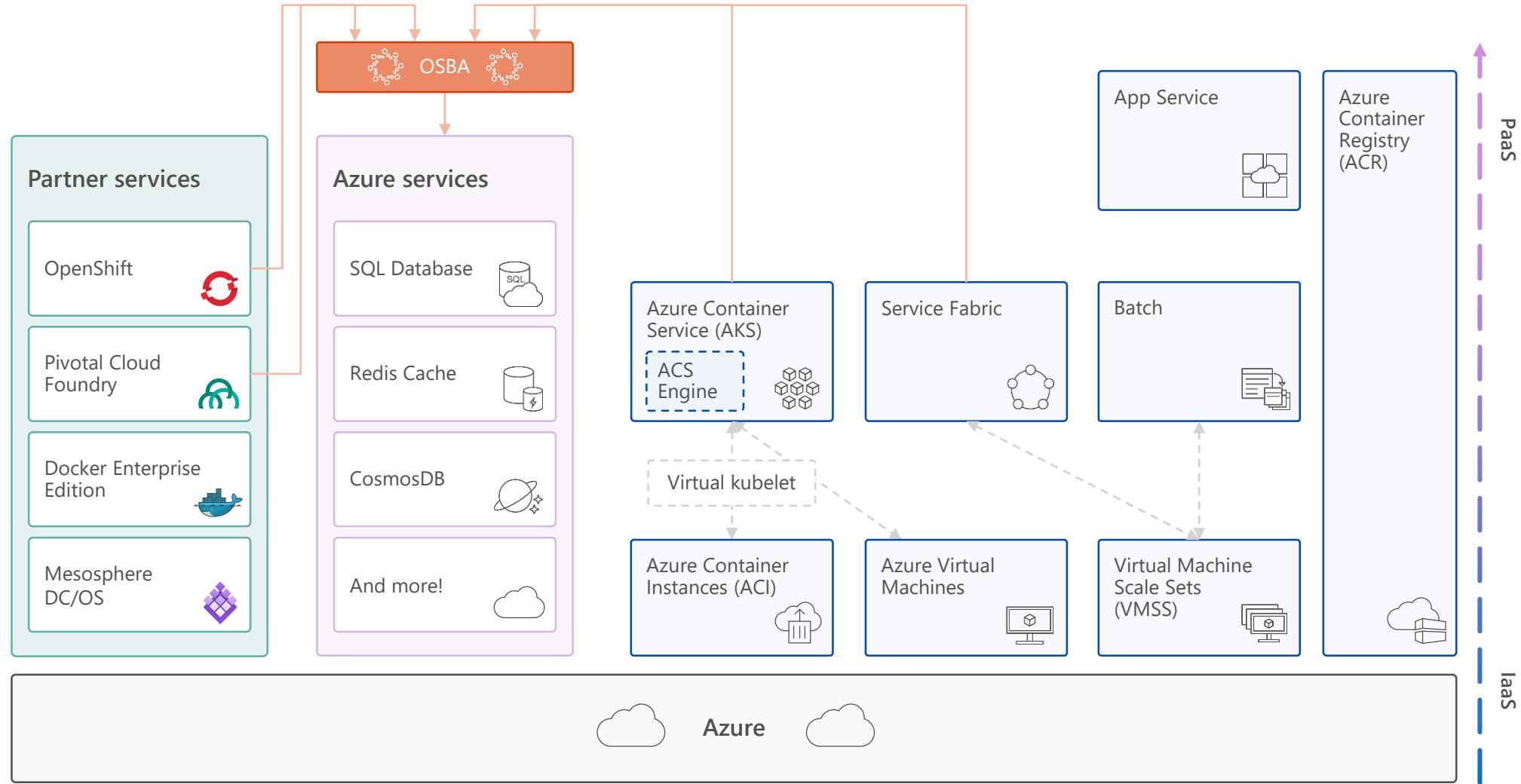
Available  
on GitHub

# Open Service Broker for Azure





# Open Service Broker for Azure (OSBA)





Azure Container Service (AKS)



Azure Container Instances (ACI)



Azure Container Registry



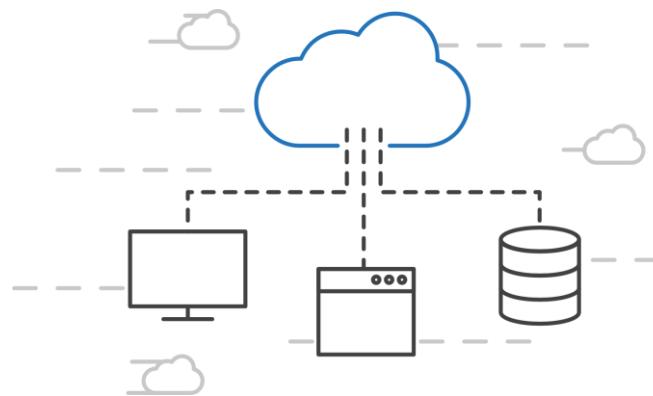
Open Service Broker API (OSBA)



Release Automation Tools

# Open Service Broker for Azure (OSBA)

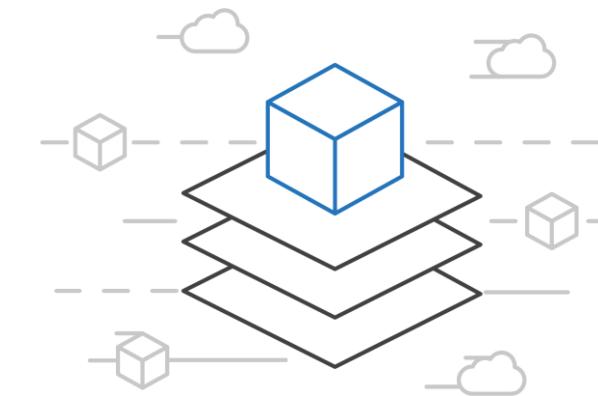
Connecting containers to Azure services and platforms



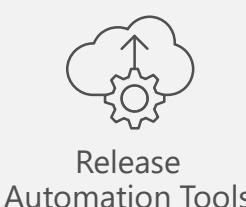
A standardized way to connect with Azure services



Simple and flexible service integration



Compatible across numerous platforms



# Open Service Broker for Azure (OSBA)

An implementation of the Open Service Broker API

Azure SQL Database



Redis Cache



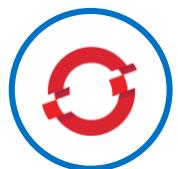
CosmosDB



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



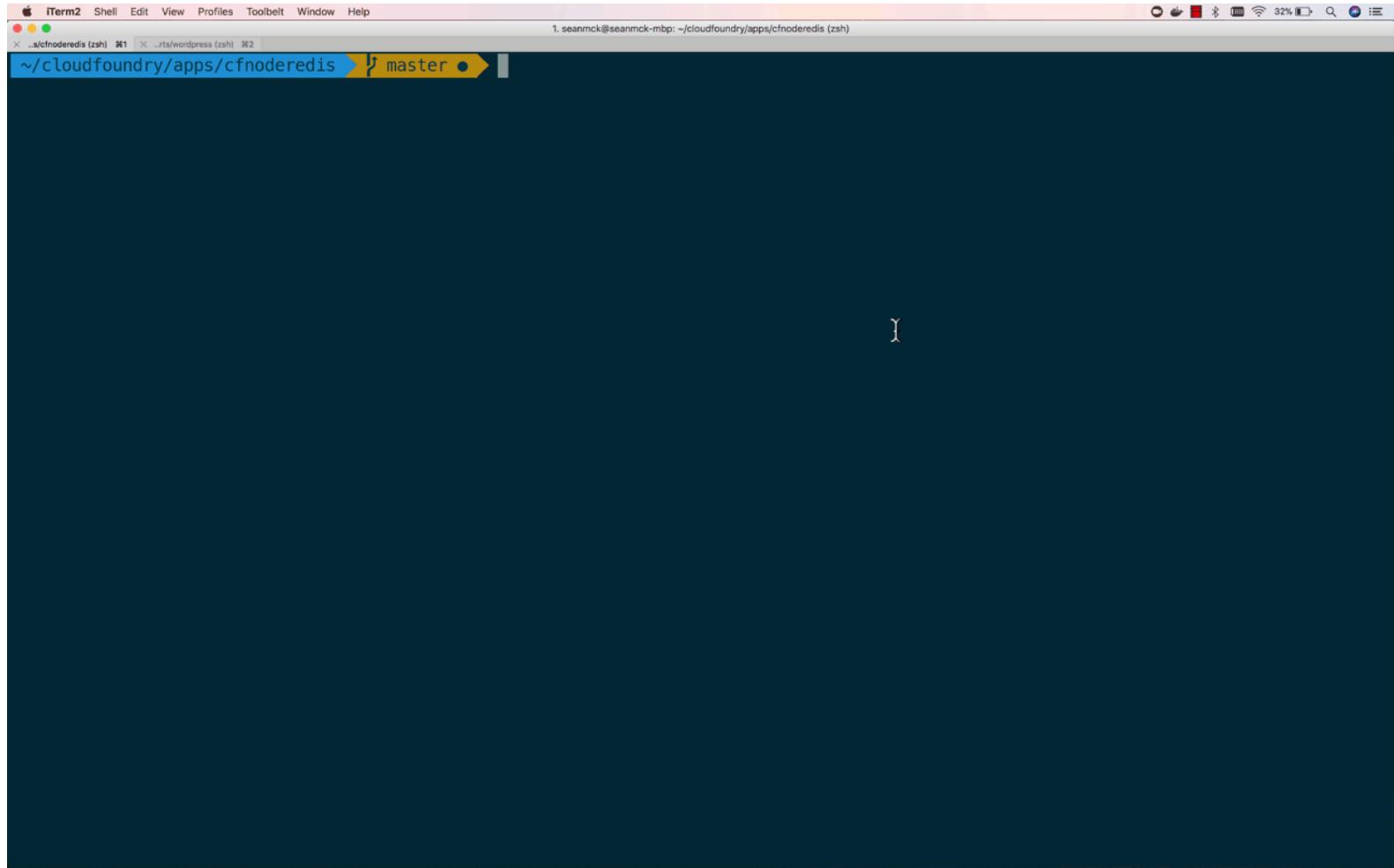
Open Service Broker API (OSBA)

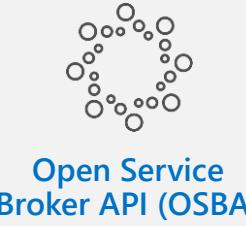


Release Automation Tools

# Open Service Broker for Azure (OSBA)

## OSBA in action





# 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
```



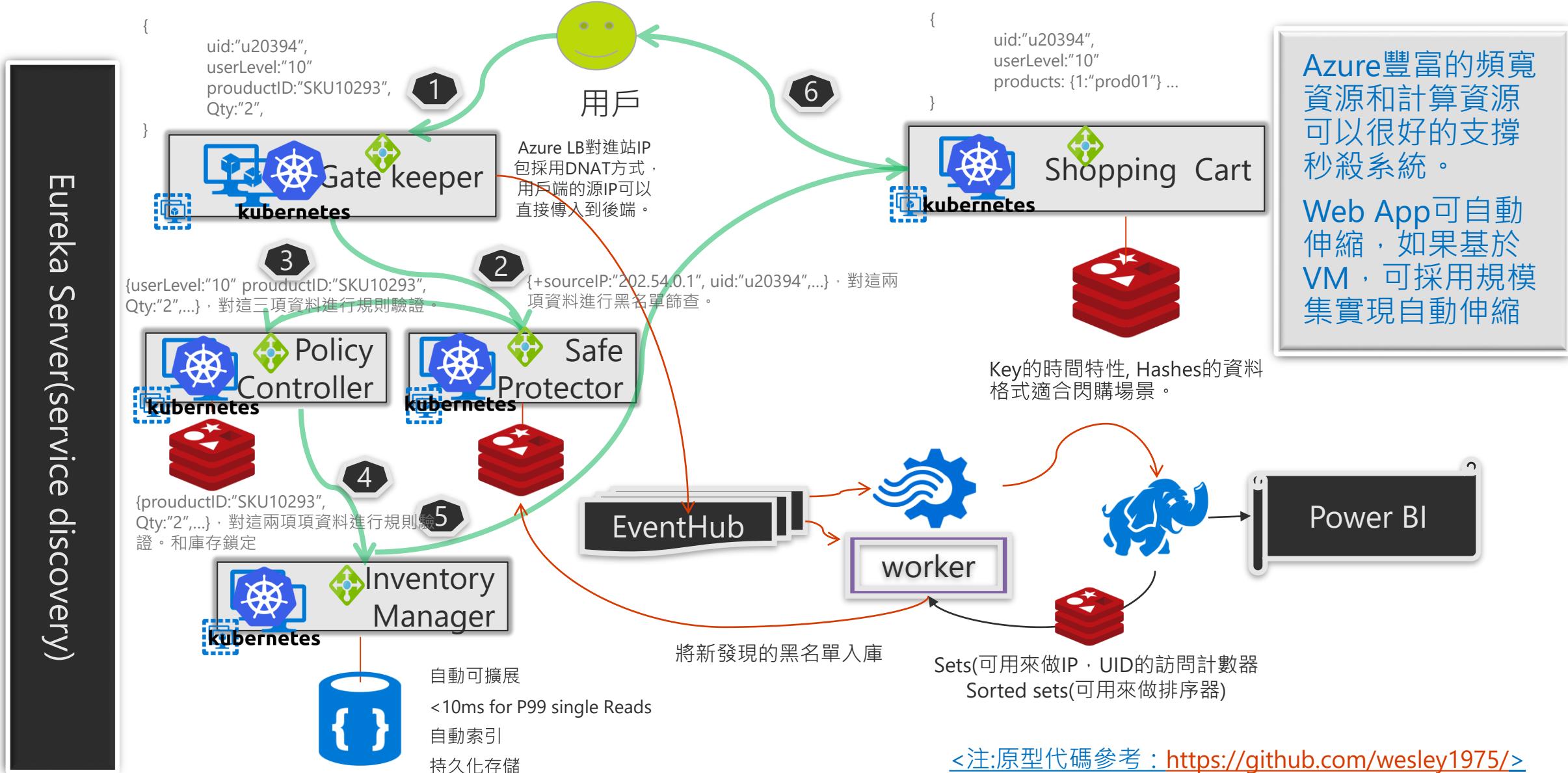
# 電商秒殺平臺的參考架構

- 秒殺的銷售方式在電商中越來越流行。由於秒殺業務具有流量瞬間爆發的特點，正常的業務系統很難支撐如此巨大的暫態流量。因此，有些電商會單獨的構建一個專門處理秒殺流量的系統。

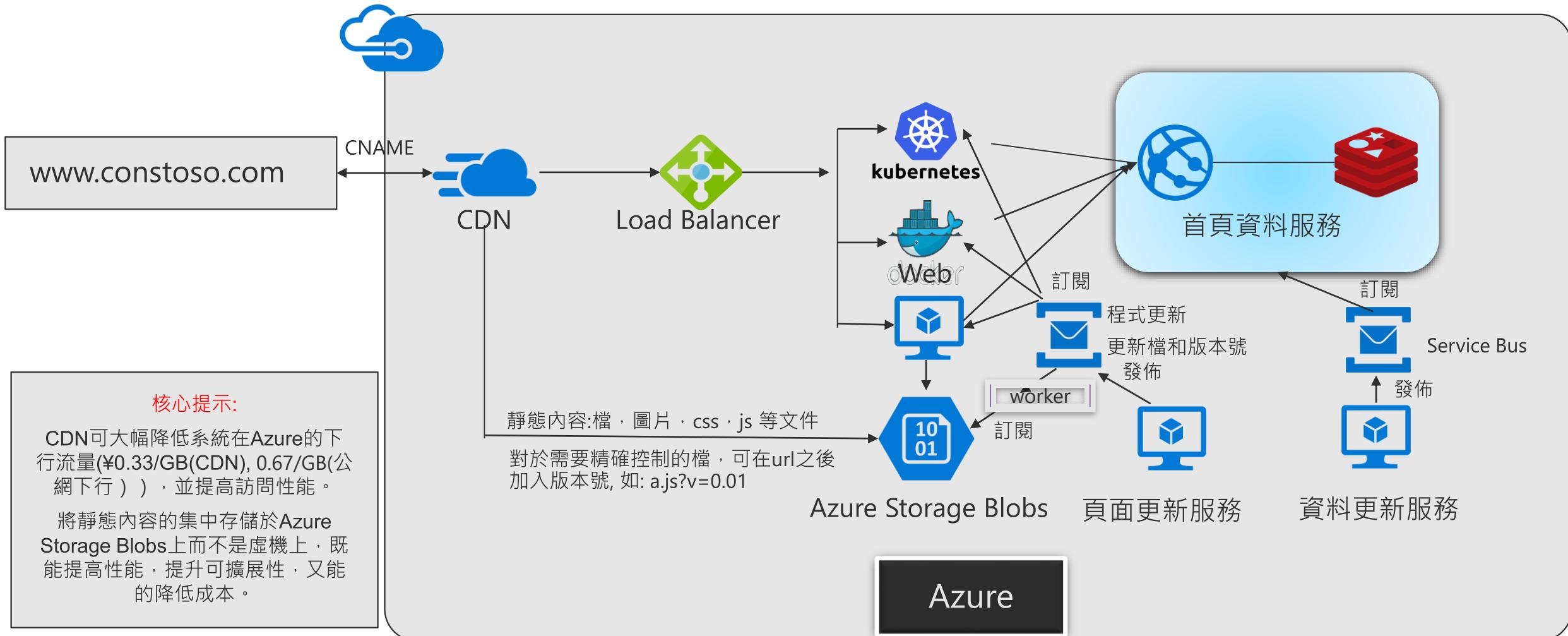


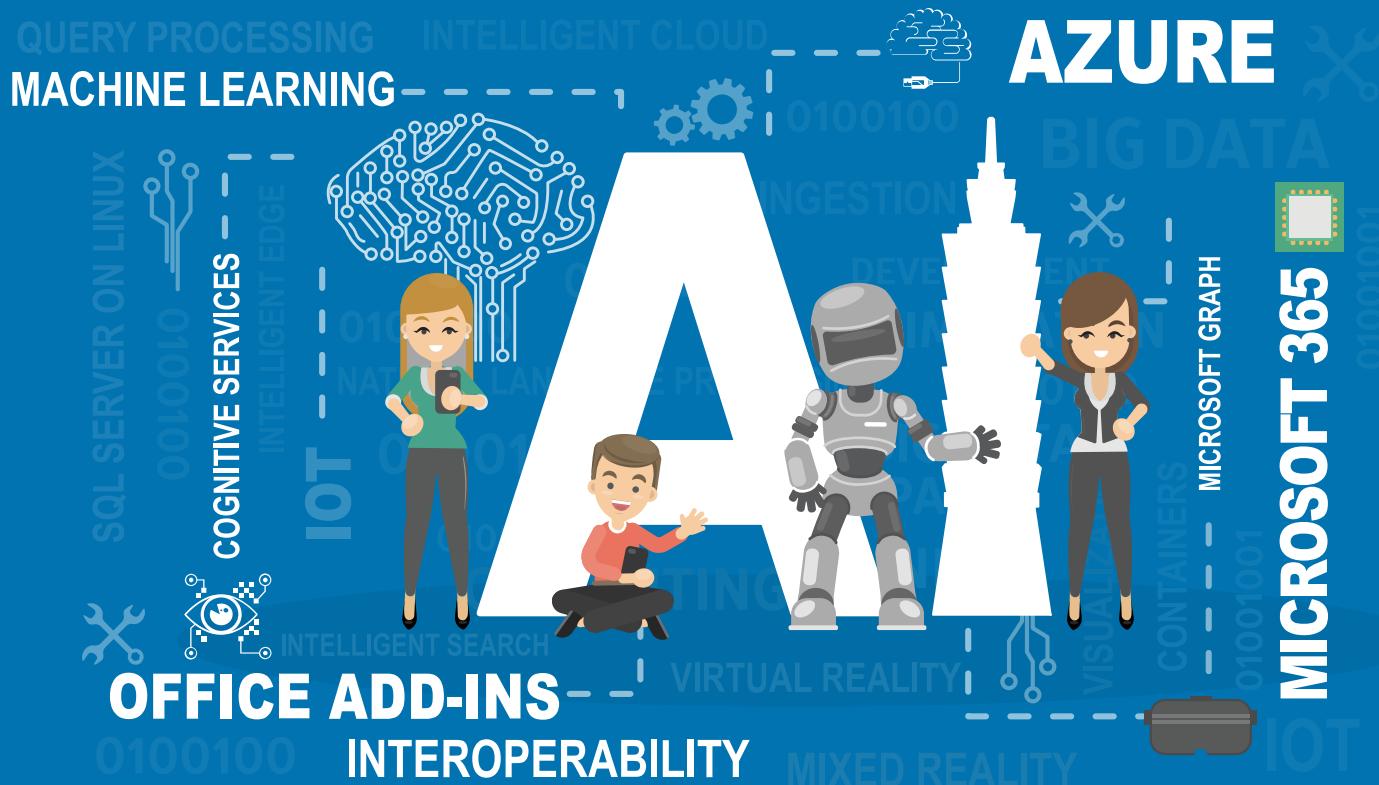
秒殺系統實質是一個限流系統，攔截低品質的流量，將高品質的流量放入到幕後處理

# 電商秒殺平臺的參考架構



# 電商系統首頁的展現的系統架構





DevDays **Asia** 2018  
@ Taipei

亞太技術年會

Thank you