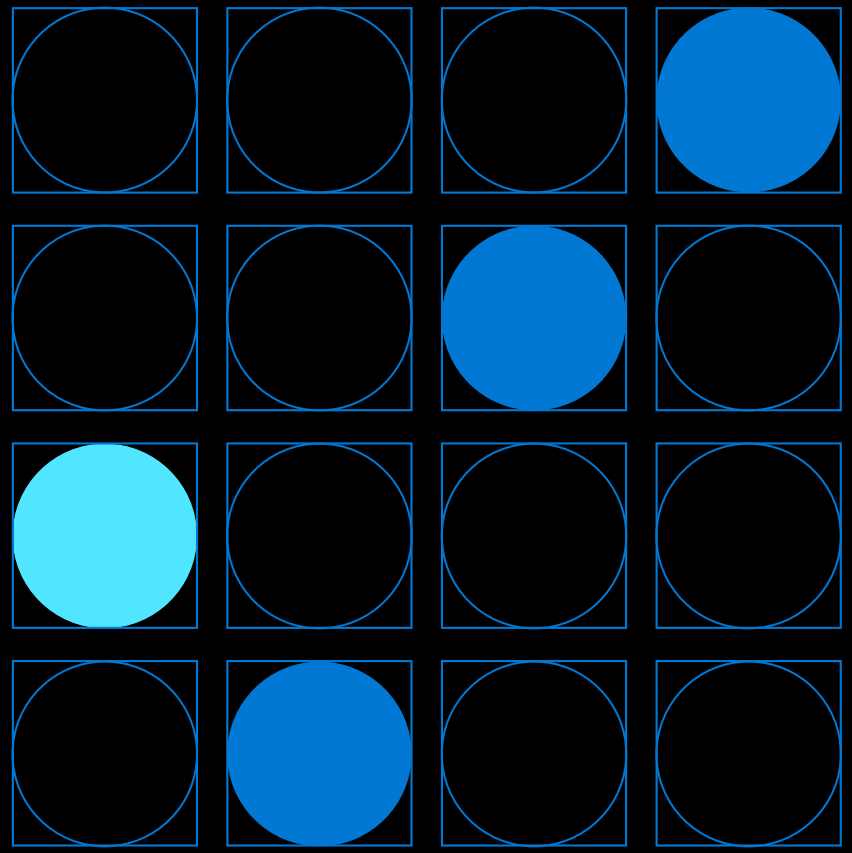
Microsoft Azure

Microsoft Azure
Developer Camp

Warsaw, May 16th, 2019



Microsoft Azure

Modern Computing in Azure

Łukasz Kałużny, Marek Grabarz

Microsoft Azure

Agenda

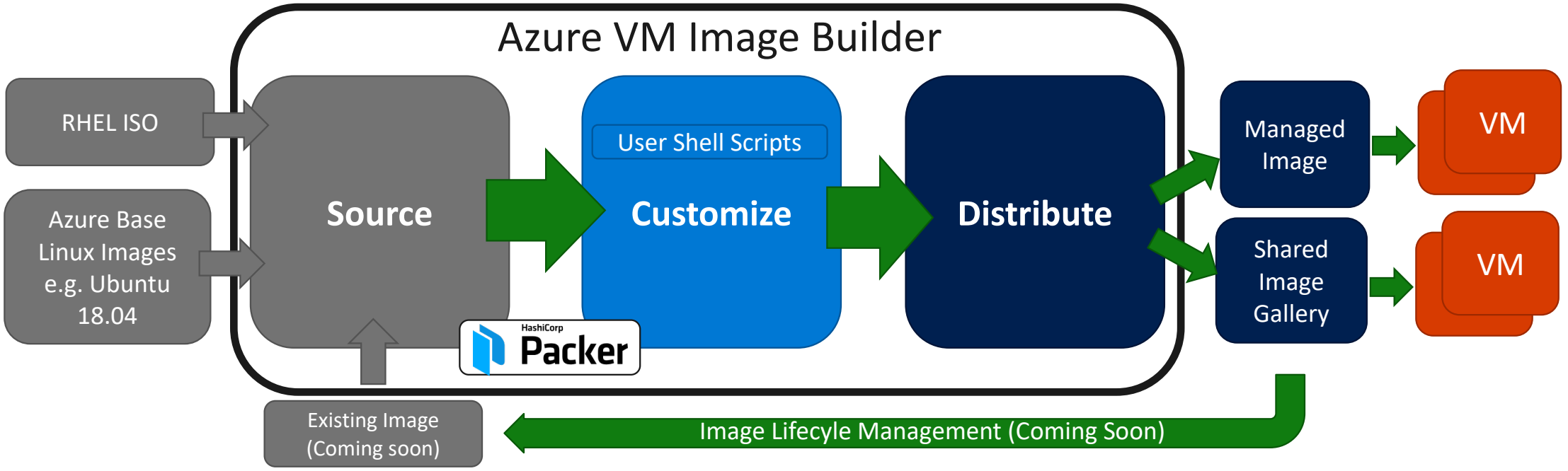
- VM Image Builder
- AKS and Virtual Nodes
- Project KEDA
- New capabilities of Azure AppService
- Consumption based API Management

Five demos – again!

Image Builder

IaaS like PaaS = Immutable IaaS

Azure Image Builder Service

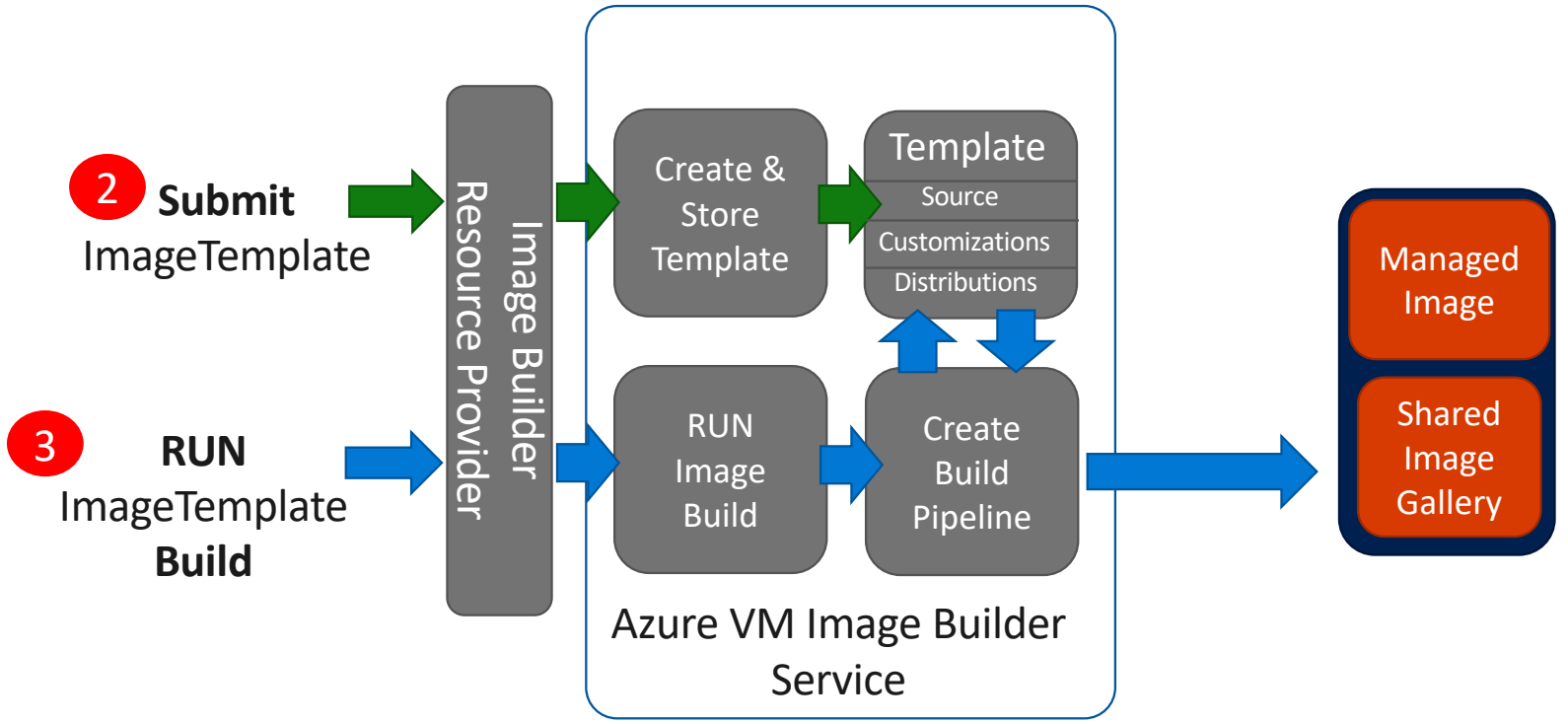


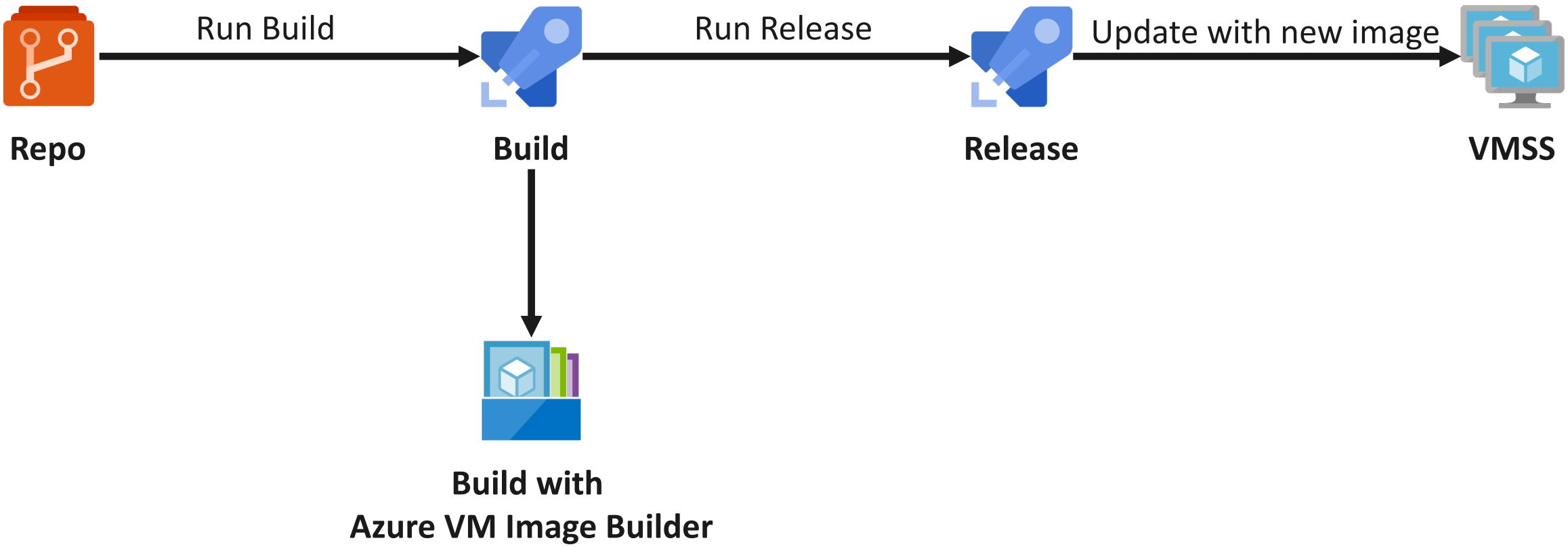
Azure Image Builder Service

1 Create Image Template

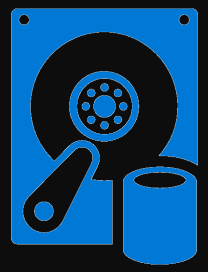
```
"type": "Microsoft.VirtualMachineImages",
"apiVersion": "2018-02-01-preview",
"location": "westcentralus",
"dependsOn": [],
"properties": {
    "source": {
        "type": "PlatformImage",
            "publisher": "Canonical",
            "offer": "UbuntuServer",
            "sku": "18.04-LTS",
            "version": "18.04.201808140"

    },
    "customize": [
        {
            "type": "shell",
            "name": "ProdShellScript",
            "script": "https://raw.githubusercontent.com/../testscript.sh"
        }
    ],
    "distribute":
        [
            {   "type":"managedImage",
                "imageId": "/subscriptions/../../ubuntu091203",
                "location": "westcentralus",
                "runOutputName": "ubuntu091203",
                "tags": {
                    "source": "goimagebuilderarm",
                    "baseosimg": "ubuntu1804"
                }
            }
        ]
    }
```




Run Build
Run Release
Update with new image
Repo
Build
Release
VMSS
Build with
Azure VM Image Builder

Demo



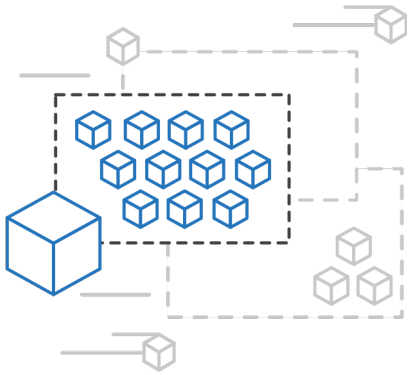
VM image builder

Virtual Nodes

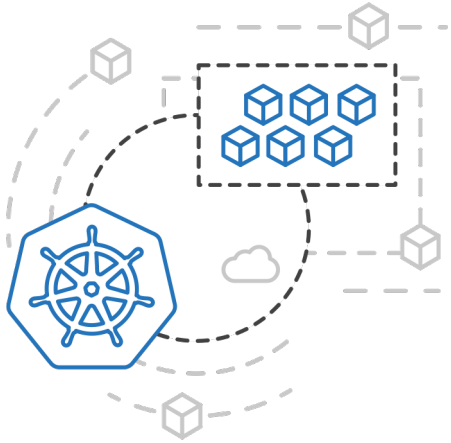
Deploy & Scale to Serverless

Azure Container Instances (ACI)

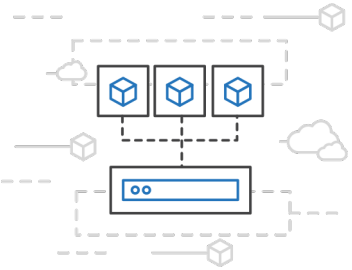
Easily run serverless containers



Run containers without managing servers



Containers as a primitive billed per second

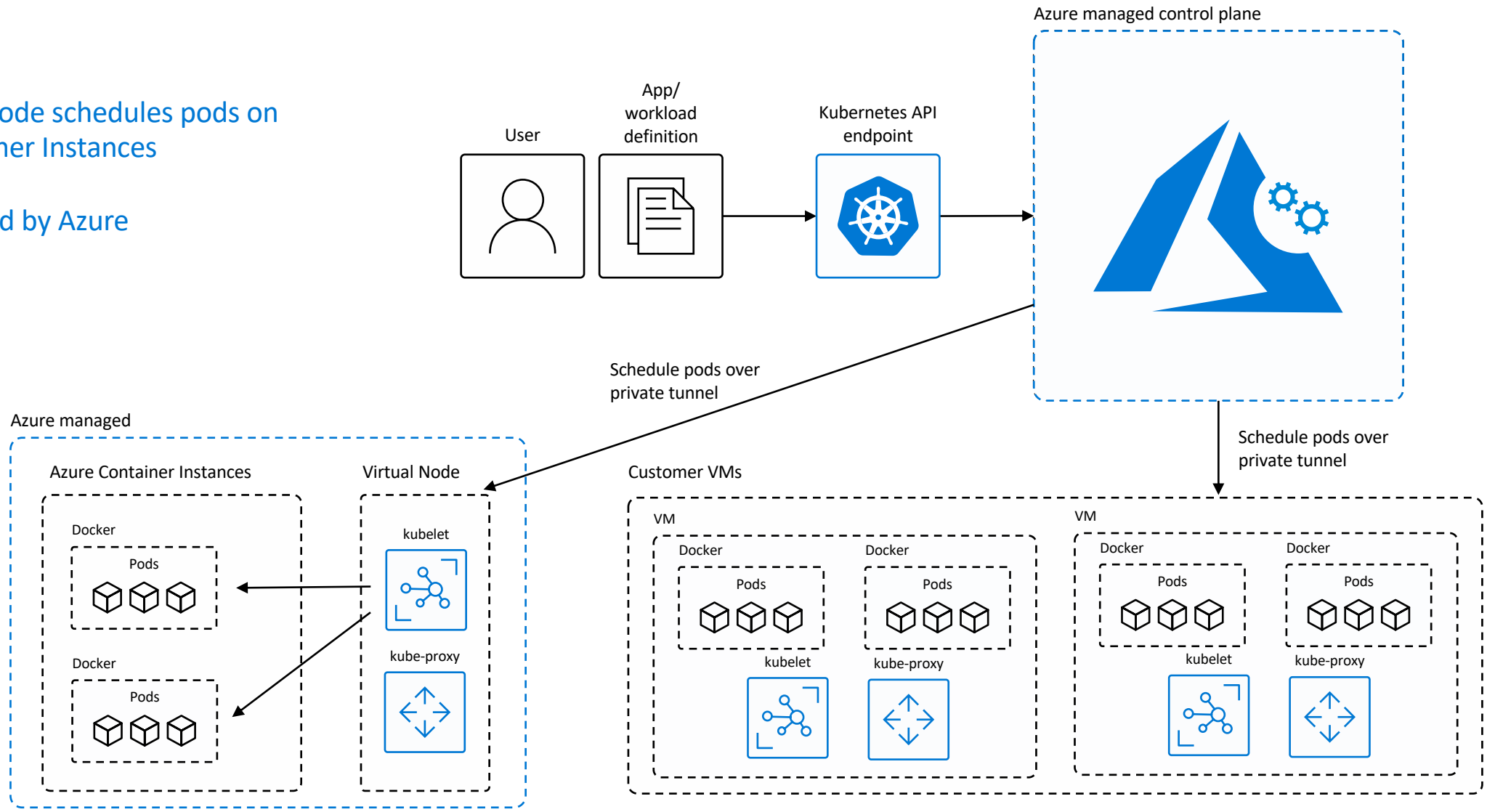


Secure applications with hypervisor isolation

Manage Kubernetes with ease

Virtual Node

- The Virtual Node schedules pods on Azure Container Instances
- All is managed by Azure



Demo

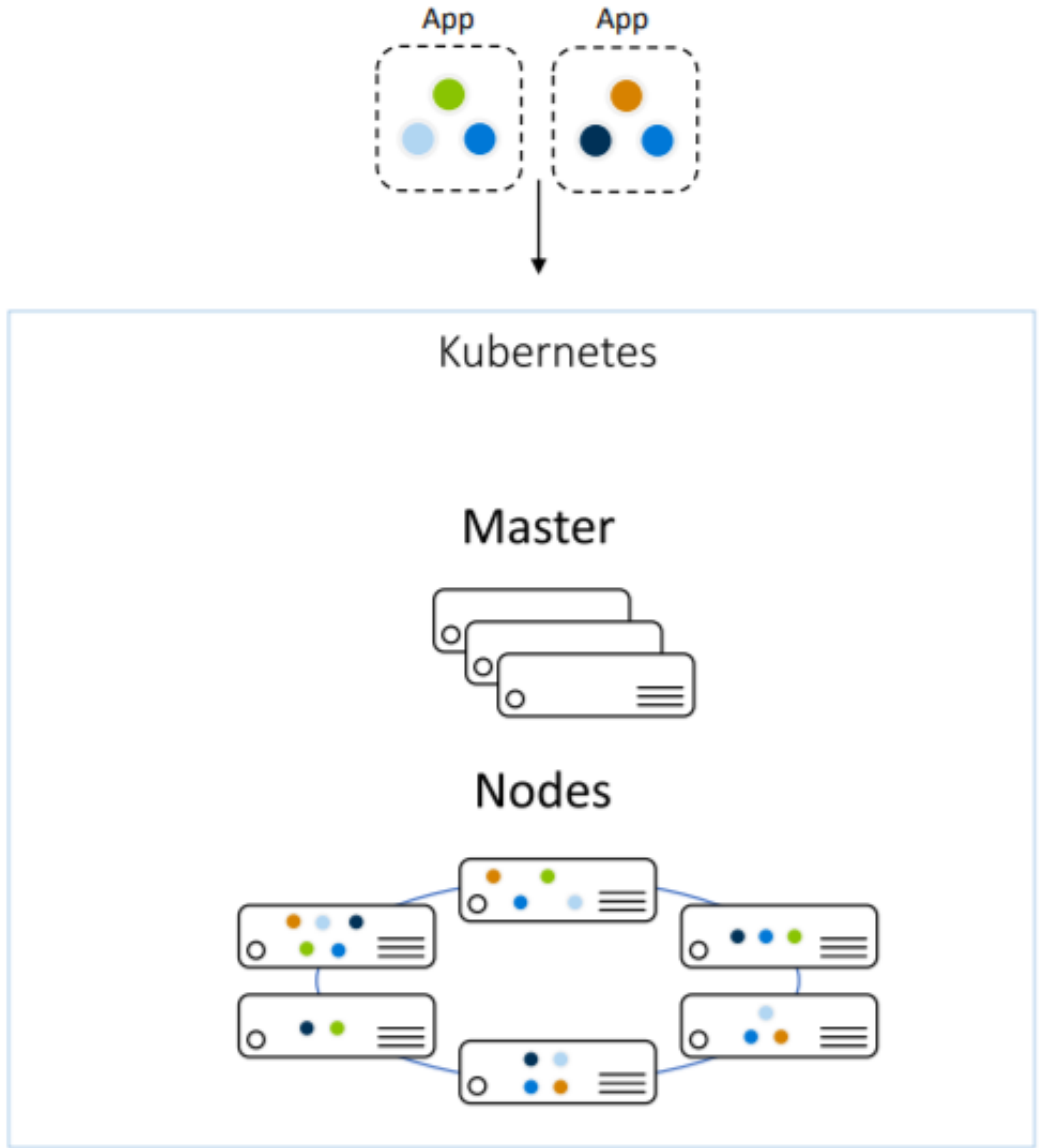
Project KEDA

Kubernetes-based Event Driven Autoscaling

Kubernetes

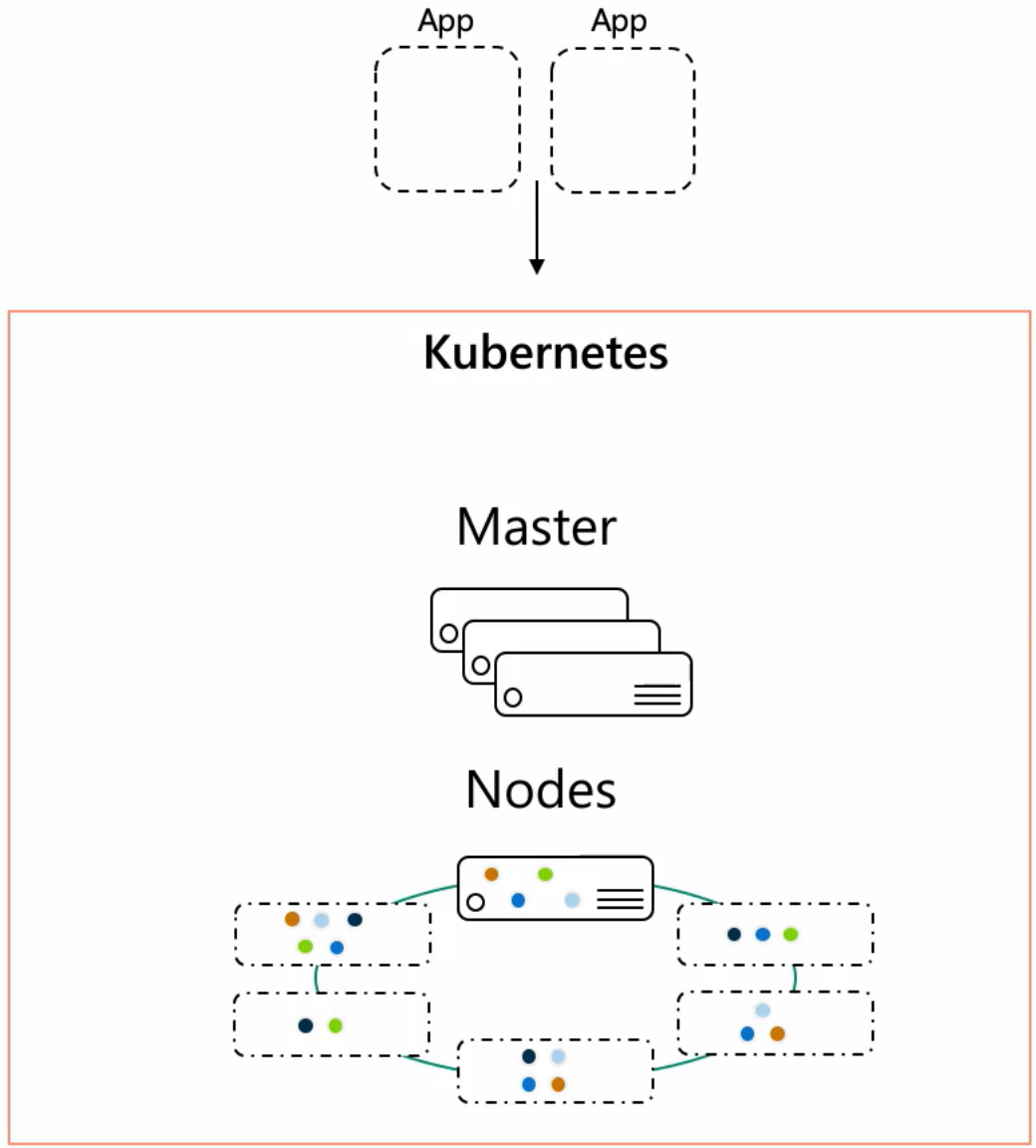
Orchestrates containerized workloads and services.

Provides a clean interface for managing distributed systems across many nodes, including replication, scaling, and state management.



Kubernetes + Serverless Nodes

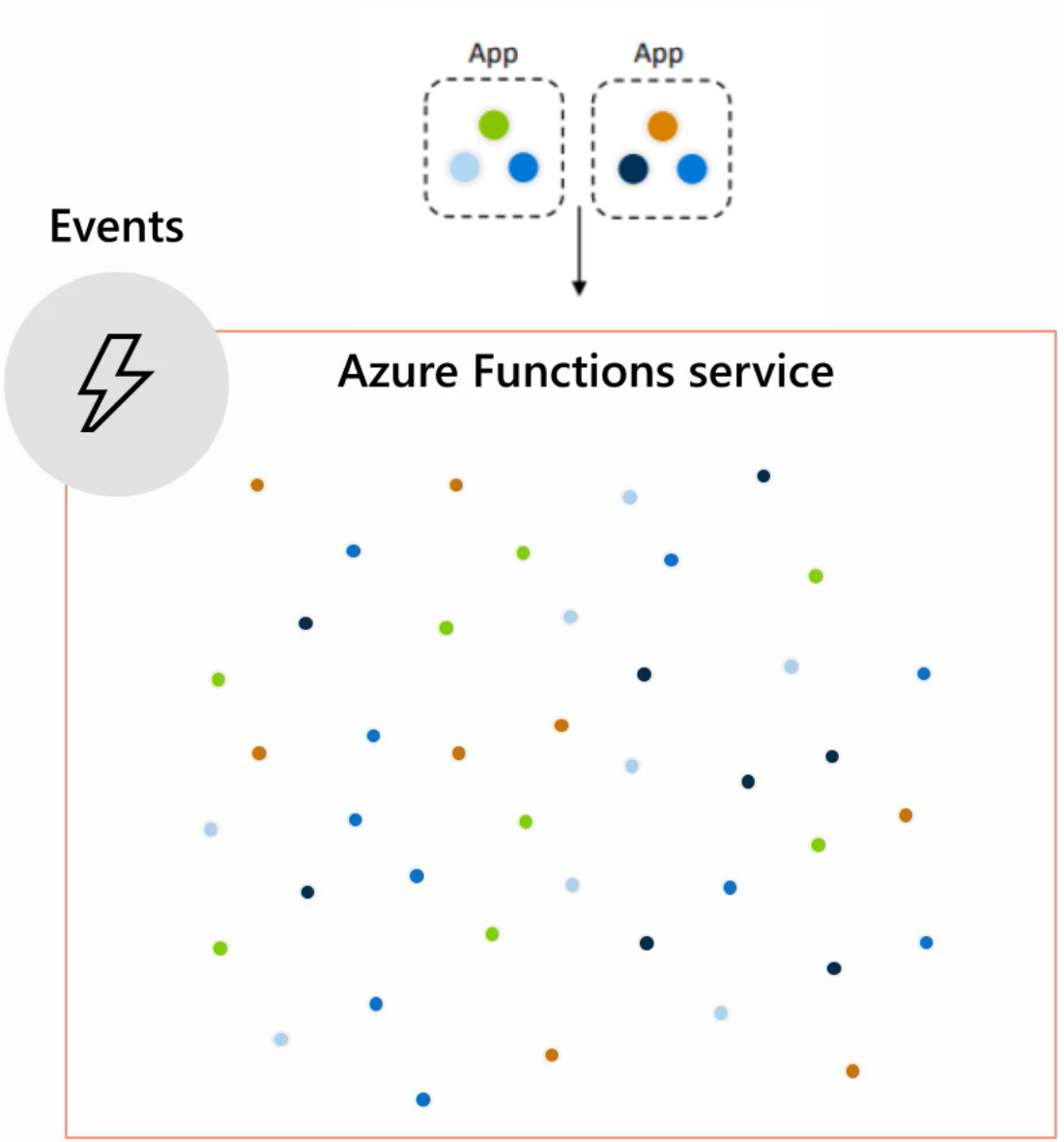
Leverage the Virtual Kubelet to provide “Virtual Nodes” running on serverless containers (ACI)



Azure Functions

Fully serverless offering in Azure that includes

1. Event driven programming model
2. Serverless scale, pricing, and management



KEDA

Kubernetes-based event driven autoscaling

Open source **component to provide function-like scale in Kubernetes**

Azure Functions **native tooling and trigger support**

Scale to zero **or scale to thousands**

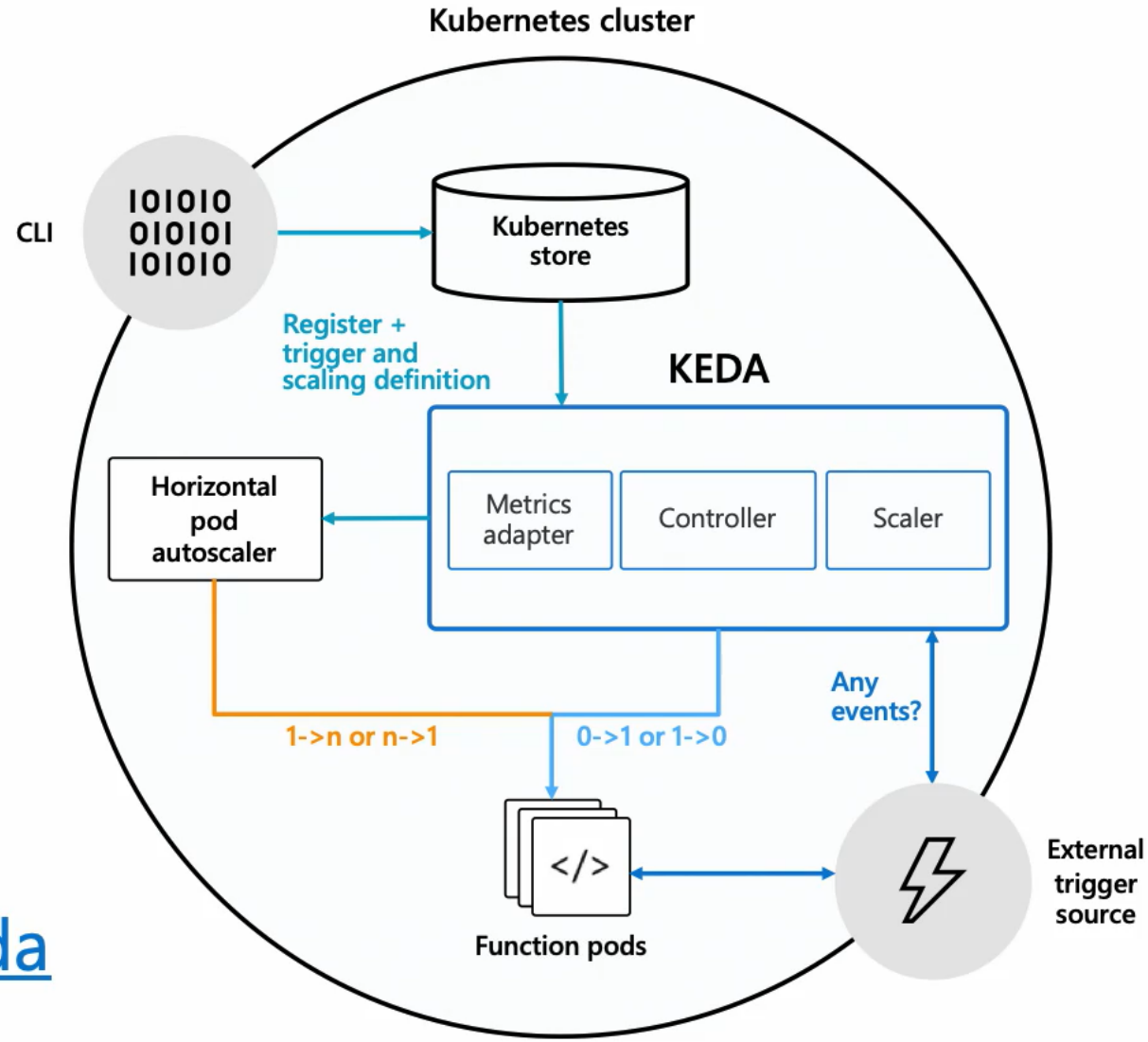
Same app, same tools, flexible hosting

https://github.com/kedacore/keda

KEDA – Kubernetes-based Event-Driven Autoscaling

Open sourced component that provides rich event sources to Kubernetes scaling

Works seamlessly with Azure Function apps



https://github.com/kedacore/keda

KEDA – scalers and sources

Currently supported

- Kafka
- RabbitMQ
- Azure Storage Queues
- Azure Service Bus Queues
- Azure Service Bus Topics
- HTTP / Cloud Events (via side-by-side with Osiris / Knative / or other HTTP scale-to-zero components)

Planned

- Azure Event Hubs
- Prometheus
- Azure Storage Blobs
- Azure Cosmos DB
- Azure Monitor
- Azure Durable Functions

When to consider KEDA for Functions

Run functions on-premises / Intelligent edge

Run functions alongside existing Kubernetes investments or requirements

Run functions on a different platform or cloud

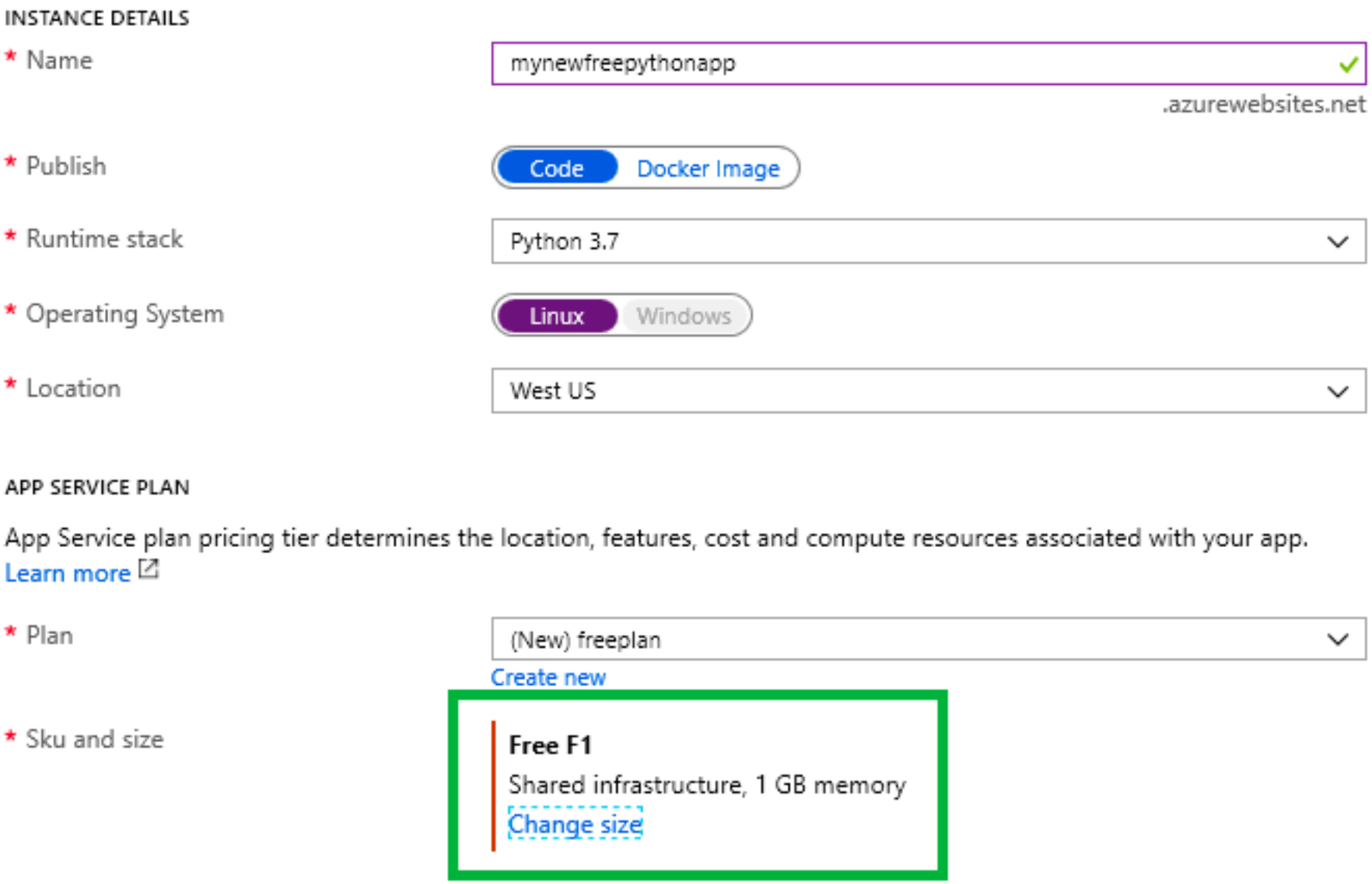
Run functions with full control and management of scale and compute

Demo

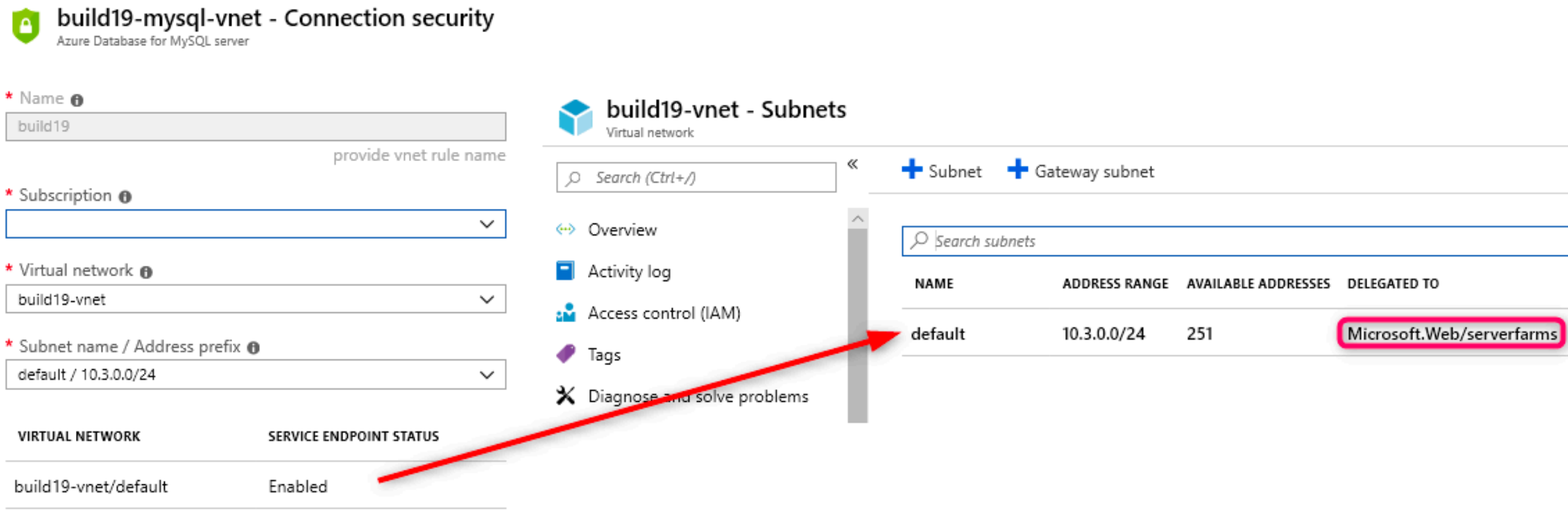
AppService

What's new?

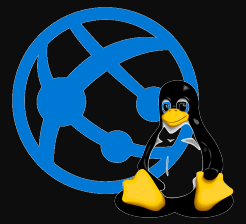
Free Tier


INSTANCE DETAILS
* Name
mynewfreepythonapp
.azurewebsites.net
* Publish
Code
Docker Image
* Runtime stack
Python 3.7
* Operating System
Linux
Windows
* Location
West US
APP SERVICE PLAN
App Service plan pricing tier determines the location, features, cost and compute resources associated with your app.
Learn more
* Plan
(New) freeplan
Create new
* Sku and size
Free F1
Shared infrastructure, 1 GB memory
Change size

Virtual network integration preview for App Service on Linux



Demo

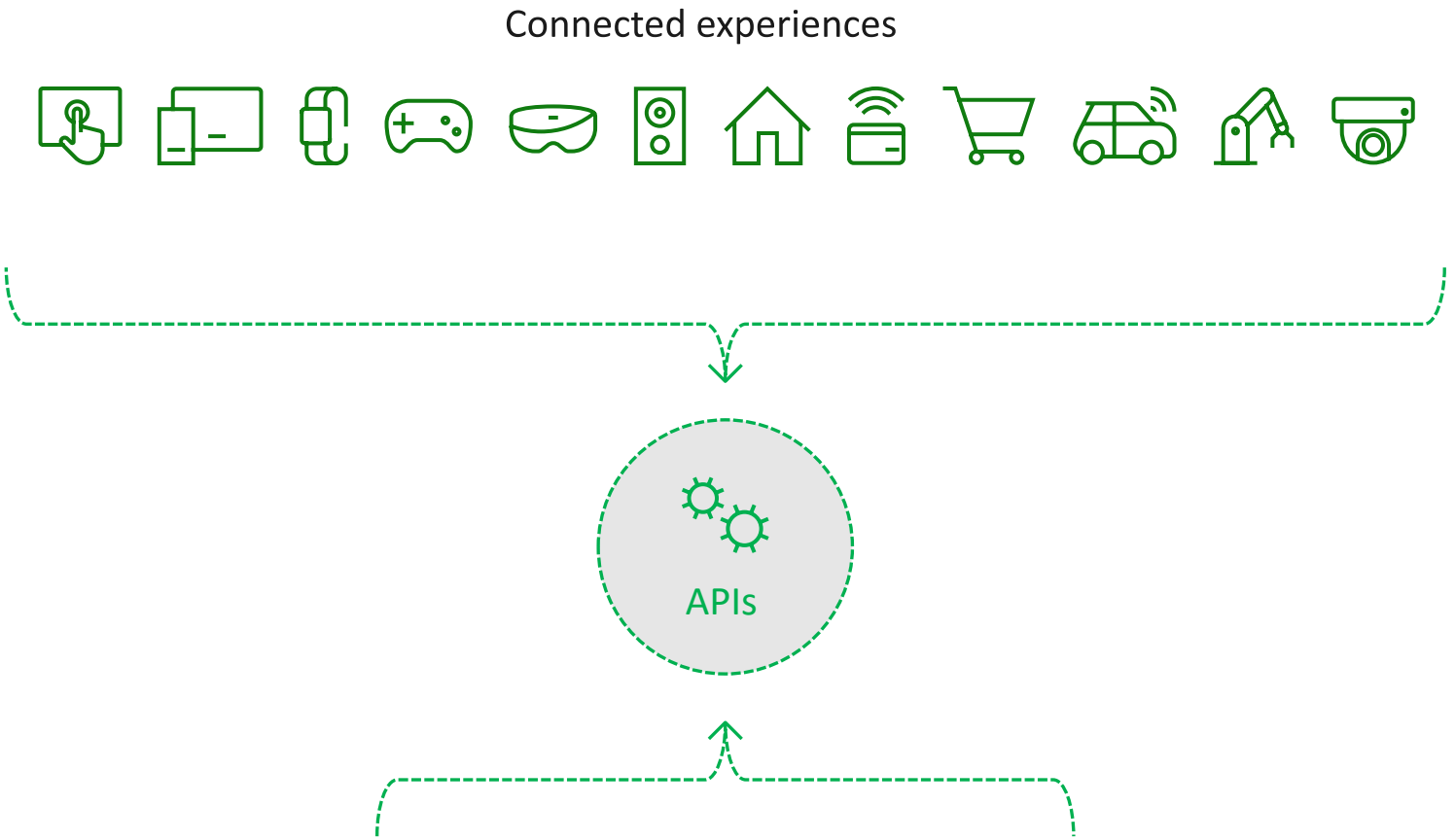


New AppService capabilities

API Management – consumption tier

No idle capacity, high-availability, automatic scaling, and usage-based pricing

Digital Transformation runs on APIs



API management solves API-related challenges

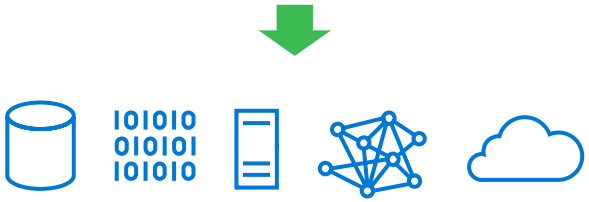
Discover
Learn
Get access
Try
SDKs and samples
Get help

Connected experiences

Consume	Mediate	Publish
Developer portal	Gateway	Azure portal

Developers
(use APIs)

Publishers
(provide APIs)



Services and data

Abstract
Secure and protect
Manage lifecycle
Monitor and measure
Onboard developers
Monetize

Digital transformation with Azure Integration Services

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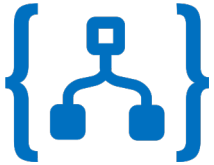


Orchestrations

APIs

Messages

Events

Publishers
(provide APIs)

Services and data

Consumption tier

In preview since December 2018

North Central US, West US, West Europe, North Europe, Southeast Asia, and Australia East

Serverless API Management

On-demand activation, auto-scale out and back to zero, consumption-based micro billing

Façade for serverless endpoints and container-based microservices

Functions, Logic Apps, Kubernetes, Service Bus, Event Hubs, Storage, etc.

Curated set of features and usage limits

E.g. no developer portal or built in cache

Demo

Serverless
API Management

Self-hosted API Management gateway

Hosted in the cloud or on prem

- Packaged as a Docker container image
- Functionally equivalent to the managed gateway

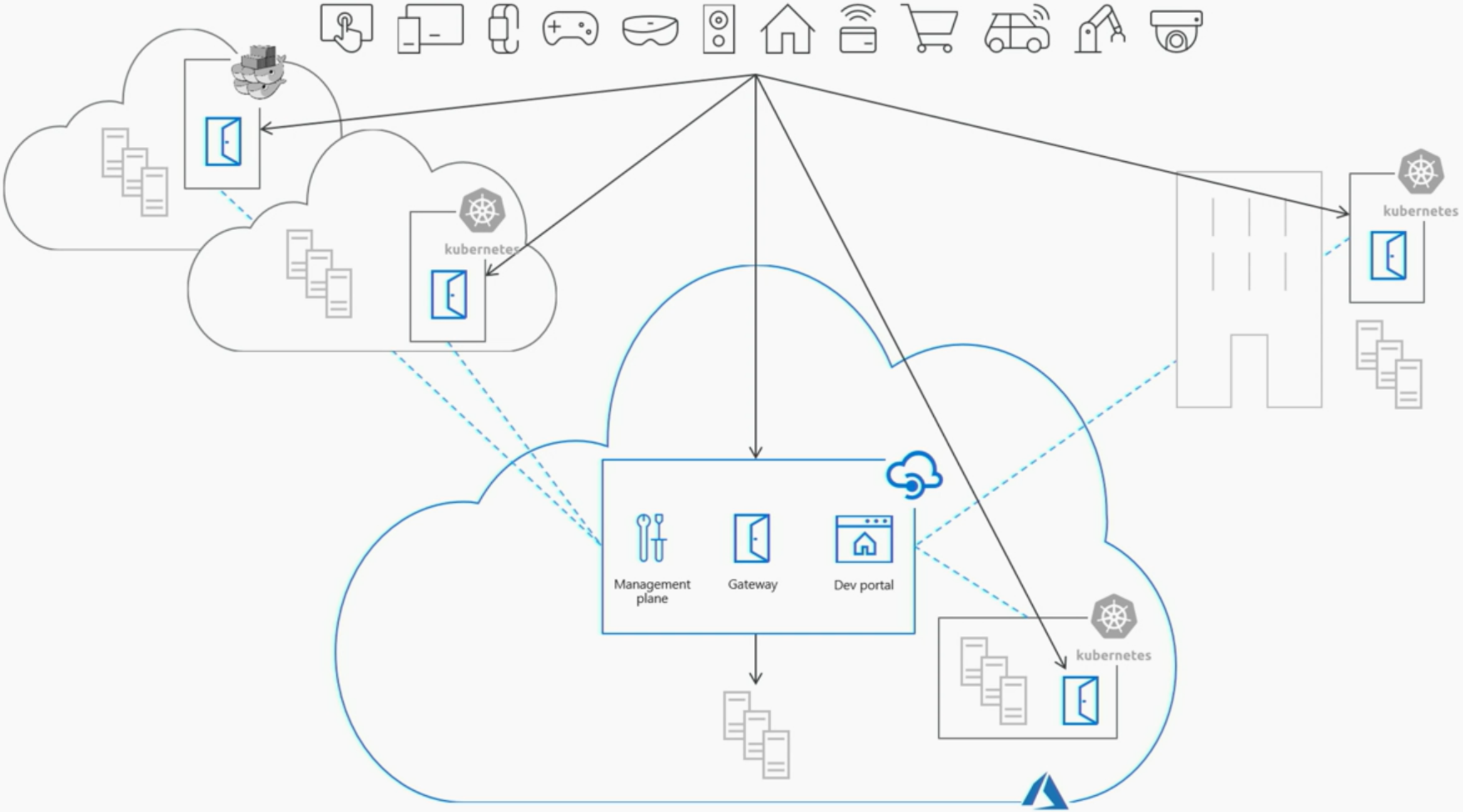
Federated with an API Management service instance

- Gateway pulls down configuration and pushes up telemetry
- Gateway needs only an outgoing connection to Azure

Kubernetes is the recommended hosting environment

- Simplifies deployment, scaling, updates, availability
- Customer is responsible for uptime and configuration

Preview is coming in the late summer or early fall!


kubernetes
kubernetes
kubernetes
Management plane
Gateway
Dev portal

Microsoft

Thank You