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CONTAINER-BASED DOCKER DEPLOYMENTS IN AZURE PLATFORM AS A SERVICE

AGENDA



- Introduction
- Azure Web App for Containers
 - The basics & Architecture
 - Demo & CI/CD Azure DevOps
- Azure Kubernetes service
 - The basics & Architecture
 - Demo AKS & Scaling
- Azure Container Instance
 - The Basics & Architecture
 - Demo ACI
 - Demo AKS scaling with ACI
- Recap

AZURE PLATFORM AS A SERVICE WITH CONTAINERS



AZURE CONTAINER PAAS SOLUTIONS



Azure Web App for
Containers



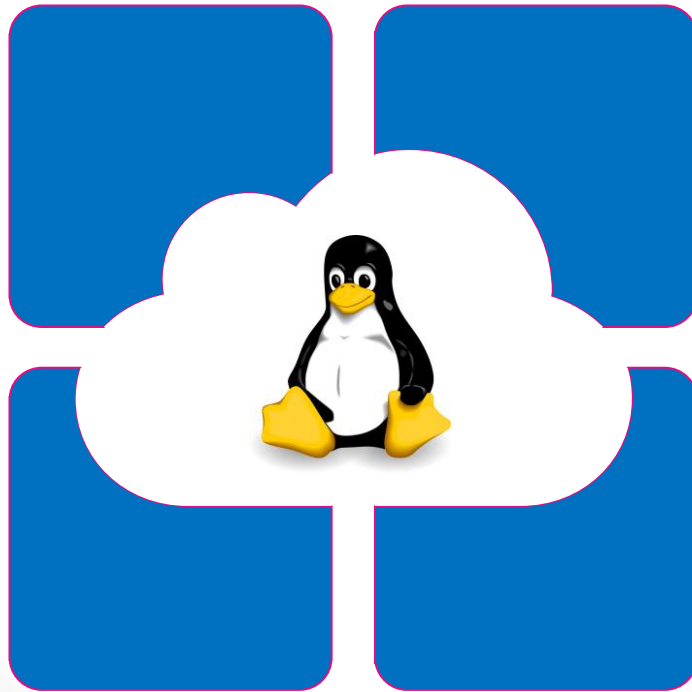
Azure Container Instance



Azure Kubernetes Service

WEB APPS FOR CONTAINERS ON LINUX

Container Apps on Azure App Service
are like peanut butter and chocolate



AZURE WEB APP FOR CONTAINERS (LINUX)



A cloud-app platform for delivering modern apps within the Azure Cloud and services.

Comes as an integrated offering that offers features and capabilities of Azure Web App services



Enterprise
Grade Apps

Fully
Managed
Platform

High
Productivity
Development



WEB APP FOR CONTAINERS

01

High productivity development



Deployment with ease



CI/CD build
Deployment Center



Testing in
production



Staged deployment
with slots

02

Fully managed platform



Built-in auto scale
and load balancing



High availability
with auto-patching



Monitoring
and diagnosis



Backup and
recovery

03

Enterprise-grade apps



Global data
center footprint



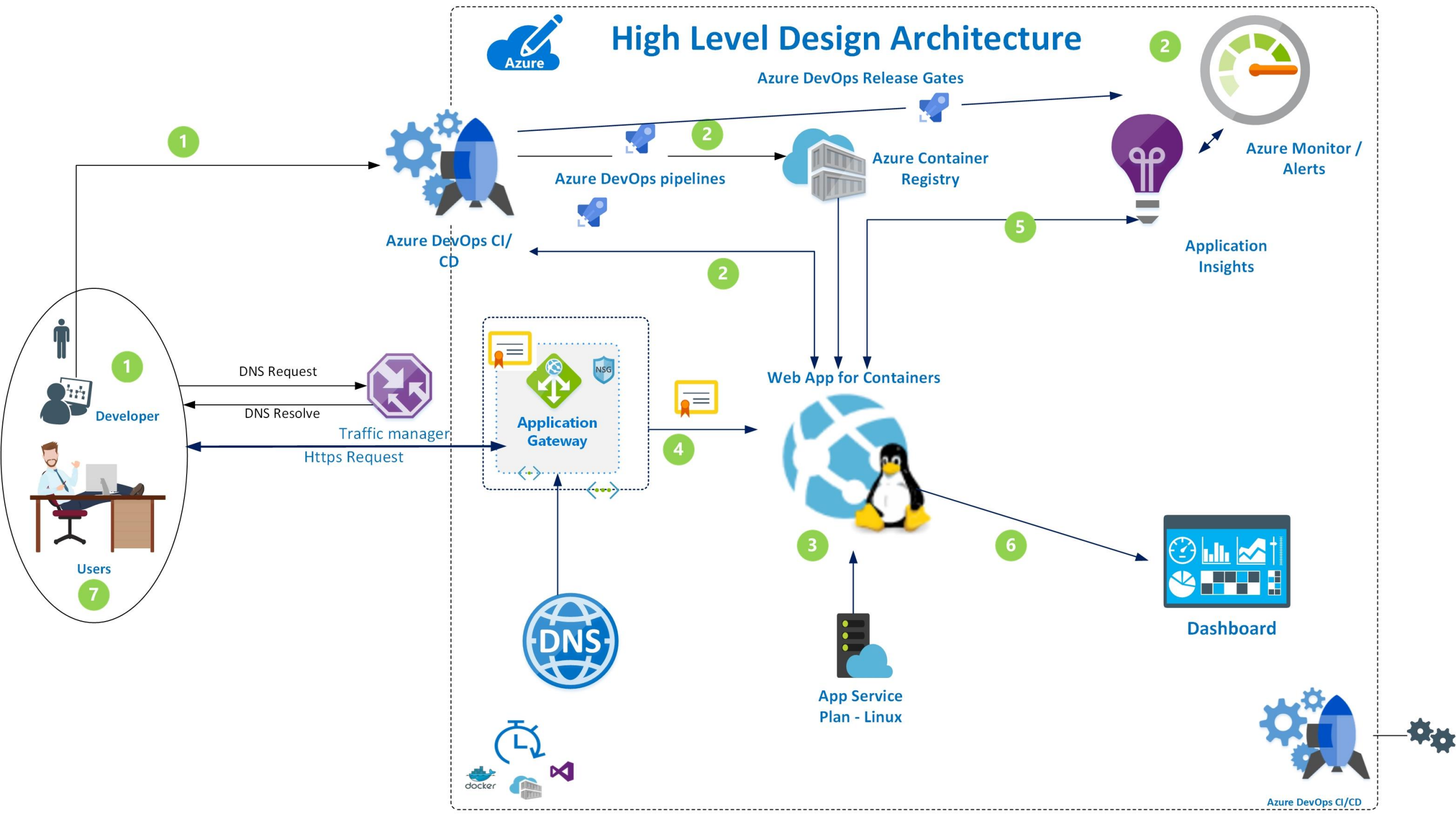
Private registry
Support & docker hub



AAD integrated



Secure + compliant



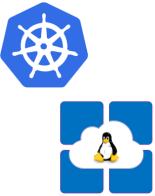
DEPLOYMENT FLOW



Create Docker Image



Push Docker Images to
registry



Apply deployments (CI/CD)



DEMO

WEB APP FOR CONTAINERS WITH AZURE DEVOPS CI/CD INTEGRATION



AZURE KUBERNETES SERVICES



KUBERNETES

- Kubernetes is an open-source (orchestration) framework for automating deployment and management of containerized workloads (microservices).
 - Orchestration:
 - Scheduling
 - Failover
 - Scaling
 - Networking
 - Service discovery
 - Health monitoring

HISTORY OF KUBERNETES

- 2003/2004 - Designed by Google (Borg)
- 2014 - Introduced as Kubernetes as open-source version of Borg
- 2015 - Kubernetes v1.0
- 2016 - Kubernetes goes mainstream
- 2017 - Enterprise adoption & support (Azure, AWS)

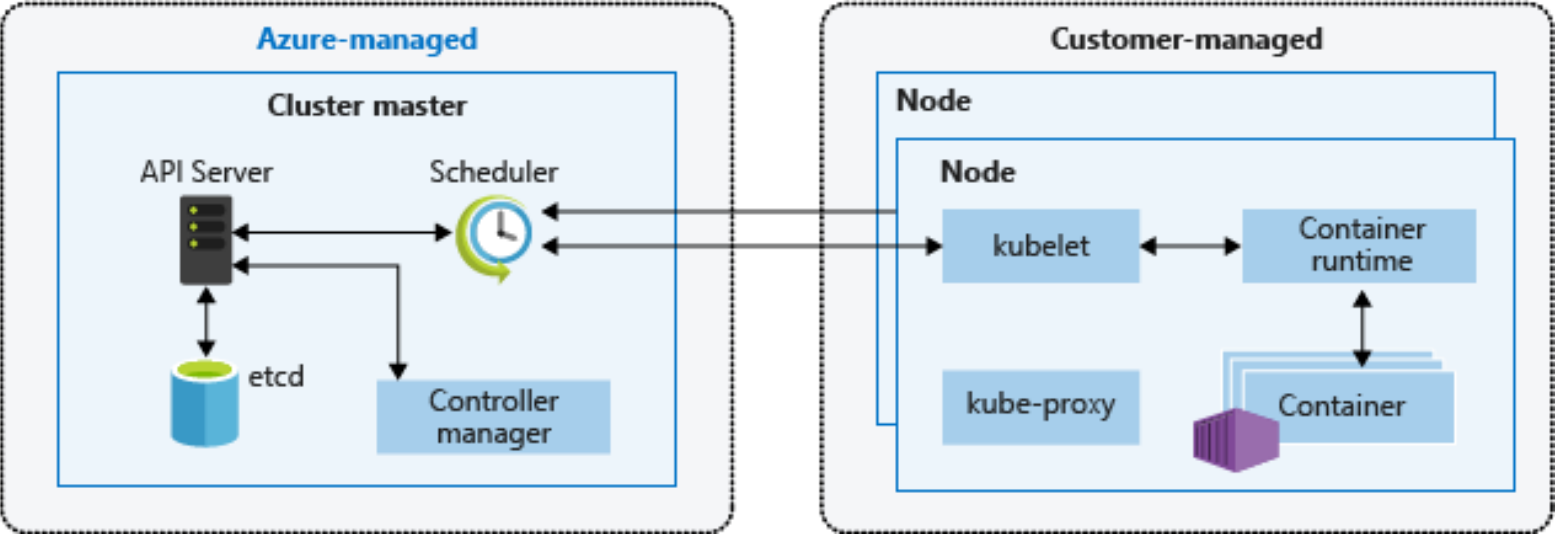
AZURE KUBERNETES SERVICES

- AKS is a Azure Managed Kubernetes Platform
 - Hosted environment
 - Eliminates the burden of maintenance & operations
 - Master nodes are fully managed
 - Worker nodes are almost fully managed
 - “Have” to scale yourself
 - “Have” to reboot yourself (after updates)
 - “Quick” and easy deployment of a cluster
 - az cli, terraform, ansible, arm, pws

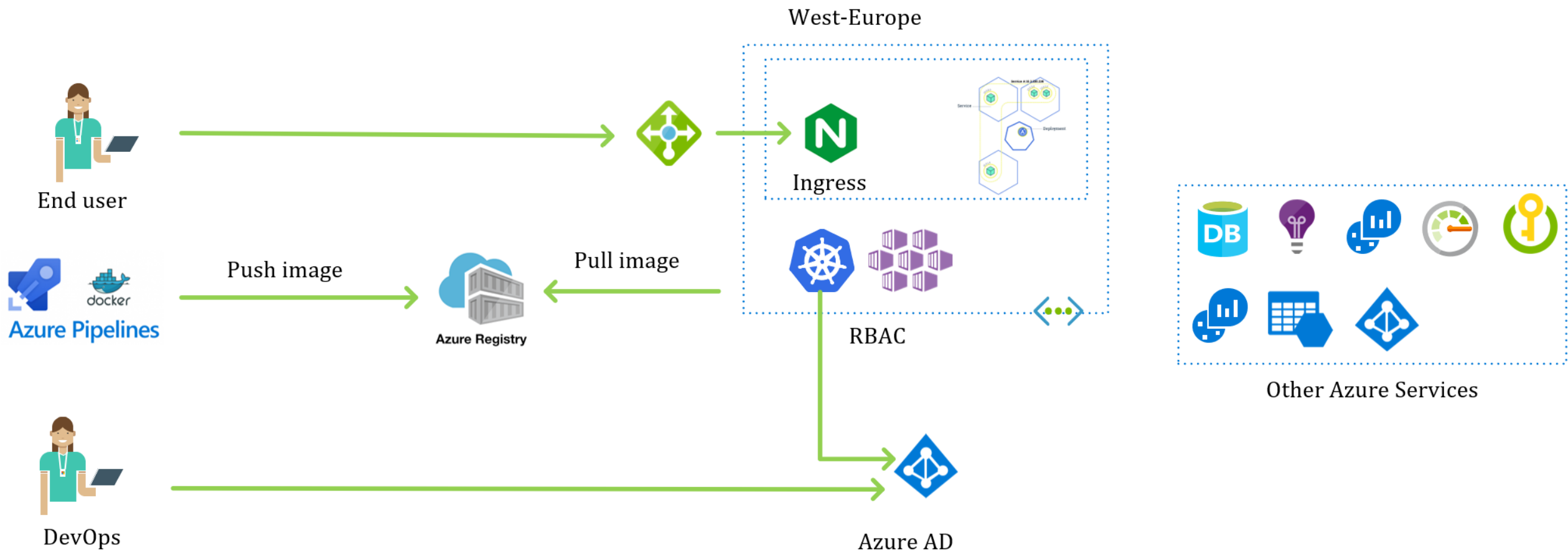
AZURE KUBERNETES SERVICES

- Integration with other Microsoft/ Azure Services, e.g.
 - Azure Container Registry
 - Azure Monitor (Log Analytics, Application Insights)
 - Monitoring cluster and/ or application
 - Key Vault
 - Secrets
 - PaaS db solutions
 - Storage
 - Azure Disks
 - Azure Files
 - Azure DevOps

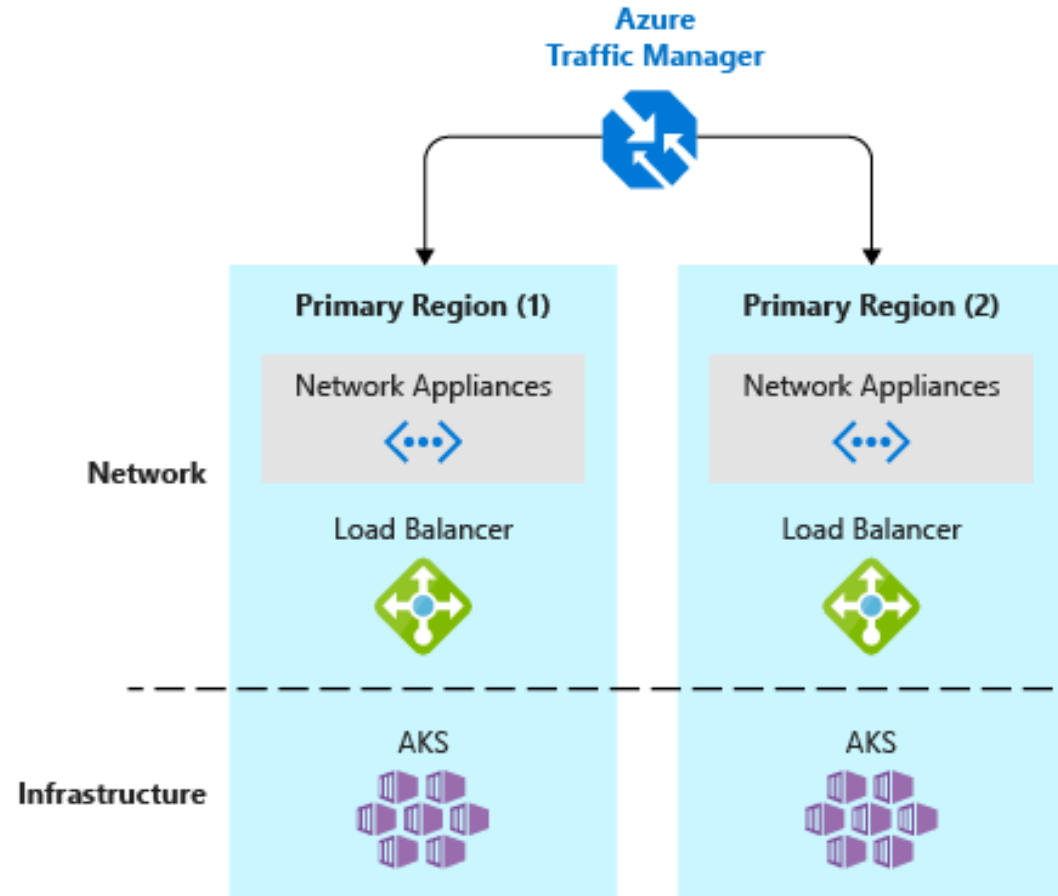
ARCHITECTURE



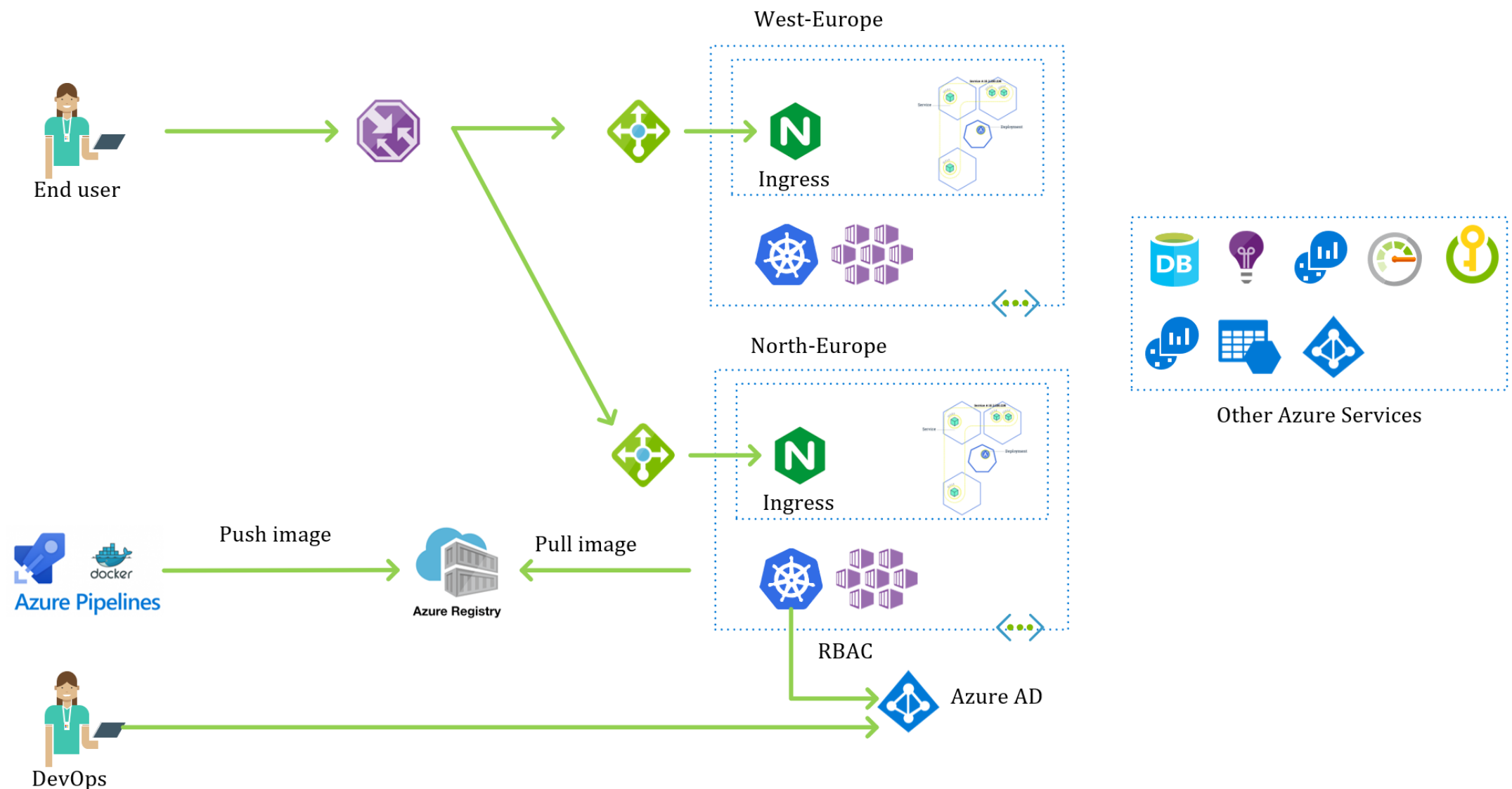
ARCHITECTURE - (POSSIBLE) SOLUTION



ARCHITECTURE - (POSSIBLE) HA SOLUTION



ARCHITECTURE - (POSSIBLE) HA SOLUTION



DEMO

DEPLOYMENT ON AKS AND SCALING OF THE CLUSTER



AZURE CONTAINER INSTANCE



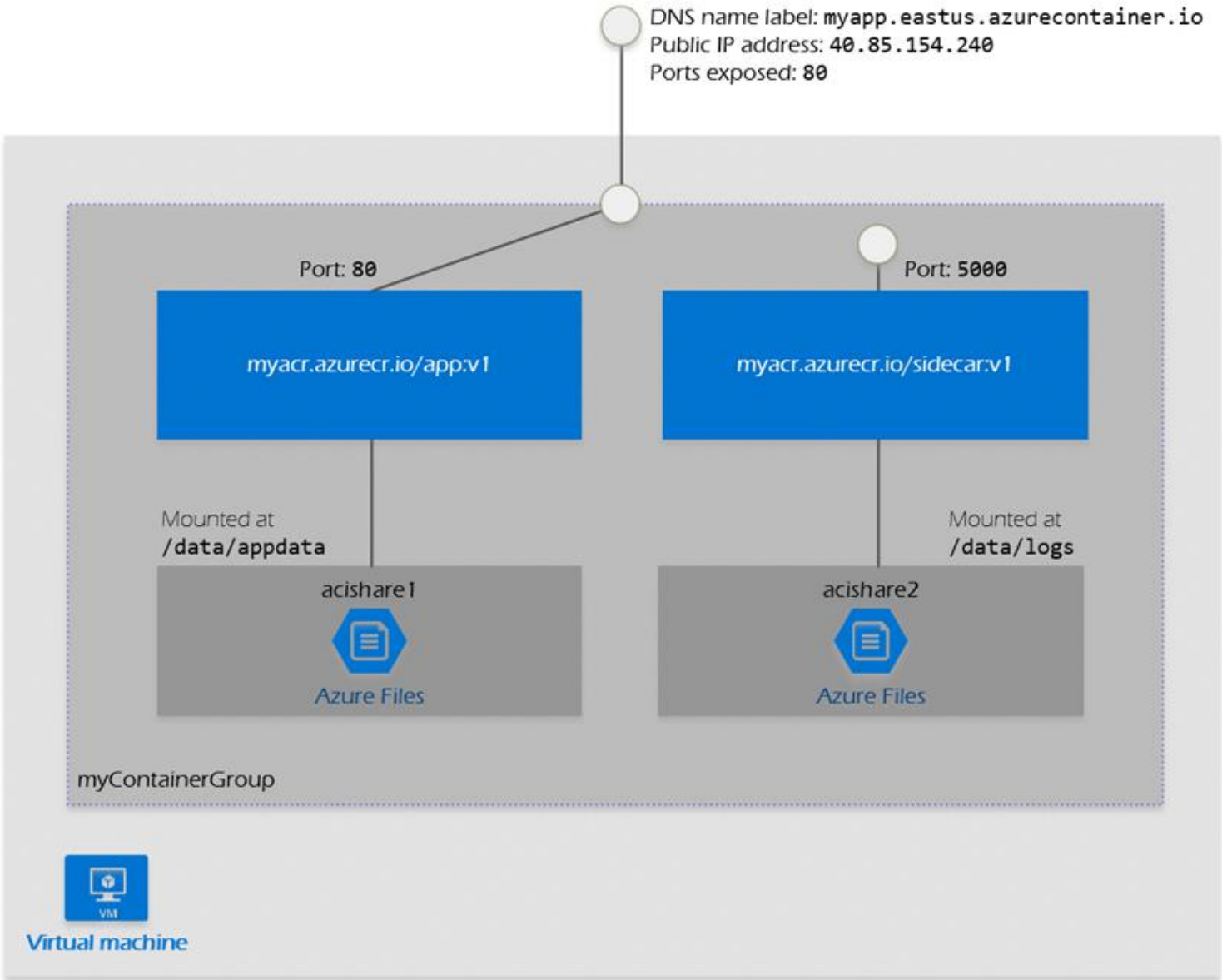
AZURE CONTAINER INSTANCE

- Easy and fast way to deploy containers
 - No infra to deploy/ provision and manage
 - Public endpoint
 - Linux & Windows containers!!
 - Persistent storage (Azure Files)
 - Custom Vnet (Preview)
 - 1 or multiple containers in a container group
 - Pay per second
 - **NOT AN ORCHESTRATOR!!**

AZURE CONTAINER INSTANCE

- Ideal for:
 - Simple applications
 - Task automation
 - Build jobs
 - Complementary to AKS

ARCHITECTURE - MULTI CONTAINER GROUP



DEMO ACI

DEMO AKS AND SCALING WITH ACI



AZURE CONTAINER PAAS - WHEN/ WHAT

	WebApp for containers	AKS	ACI
Complex microservices	--	++	-
Scaling	++	+	++
Ease of use	++	+/-	++
Monitoring	++	++	+
Container management	+	++	+
Managed Identity	-	++	+
Windows containers (next to Linux)	++	+/- (ACI)	++
Persistent storage	++	++	+
Custom Vnet	-	++	++
Fully managed	+	+/-	++

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