

Compute Services

Episode Objective

Skills Learned

- Describe products available for Compute such as
 - Virtual Machines,
 - Virtual Machine Scale Sets,
 - Container Instances (ACI),
 - Kubernetes Service (AKS),
 - App Services,
 - Functions



Azure Compute Services

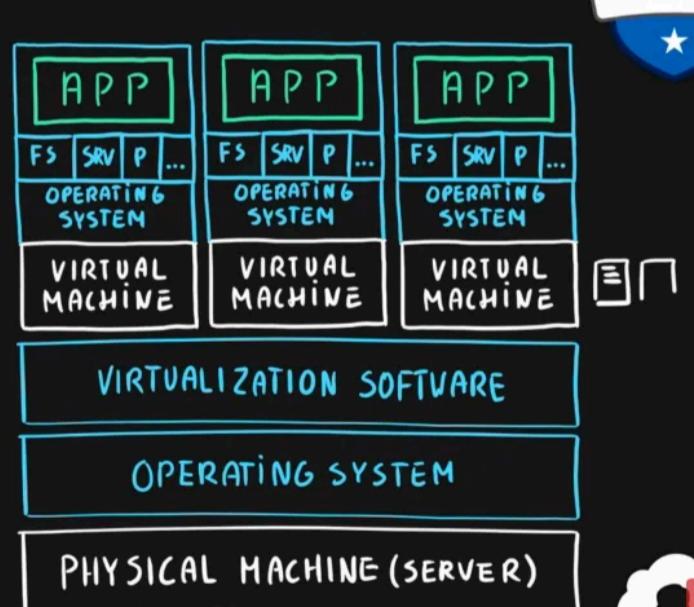
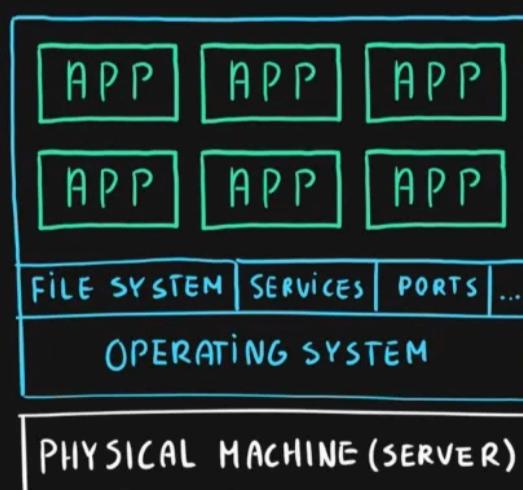
Service Category



Category of on-demand services used to run cloud-based applications.

Virtualization

Overview

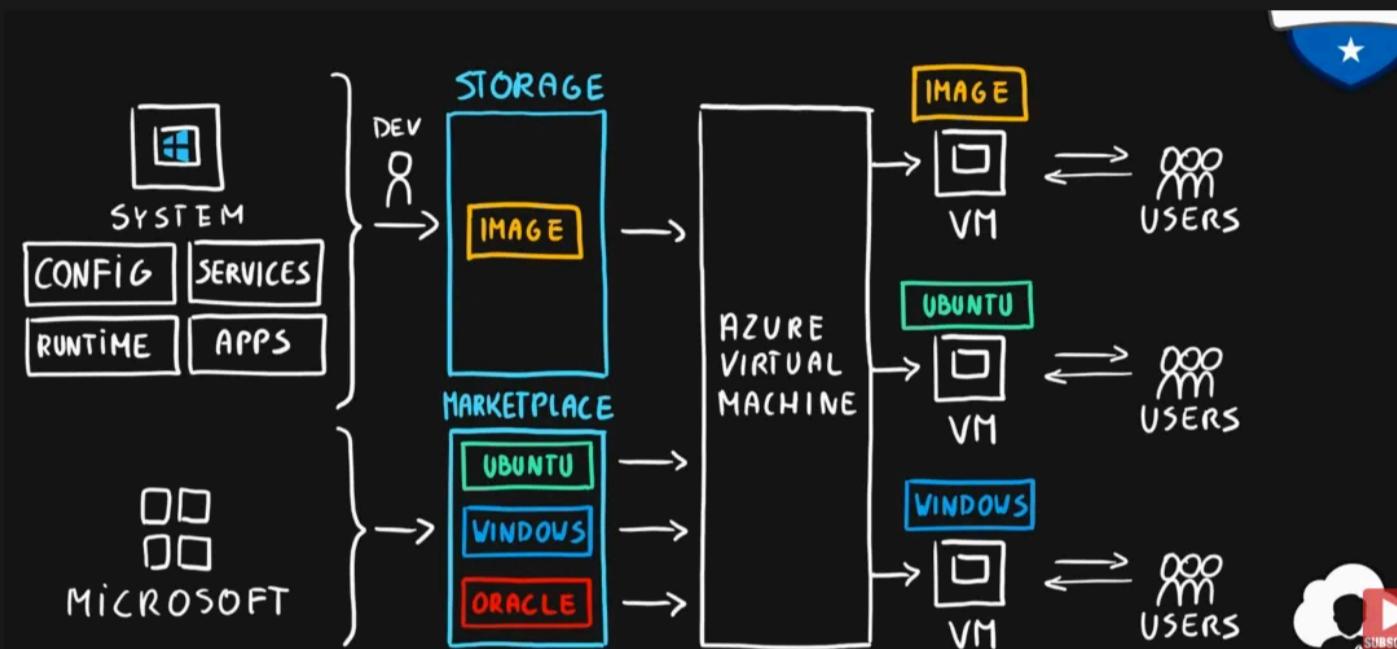


Virtualization



Key Characteristics

- Emulation of physical machines
- Different virtual hardware configuration per machine/app
- Different operating systems per machine/app
- Total separation of environments
 - file systems,
 - services,
 - ports,
 - middleware,
 - configuration



Virtual Machines



Key Characteristics

- Infrastructure as a Service (IaaS)
- Total control over the operating system and the software
- Supports marketplace and custom images
- Best suited for
 - Custom software requiring custom system configuration
 - Lift-and-shift scenarios
- Can run any application/scenario
 - web apps & web services,
 - databases,
 - desktop applications,
 - jumpboxes,
 - gateways, etc.



Basics Disks Networking Management Advanced Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group *

Instance details

Virtual machine name *

Confirm password * ⓘ ✓

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * ⓘ

None Allow selected ports

Select inbound ports *

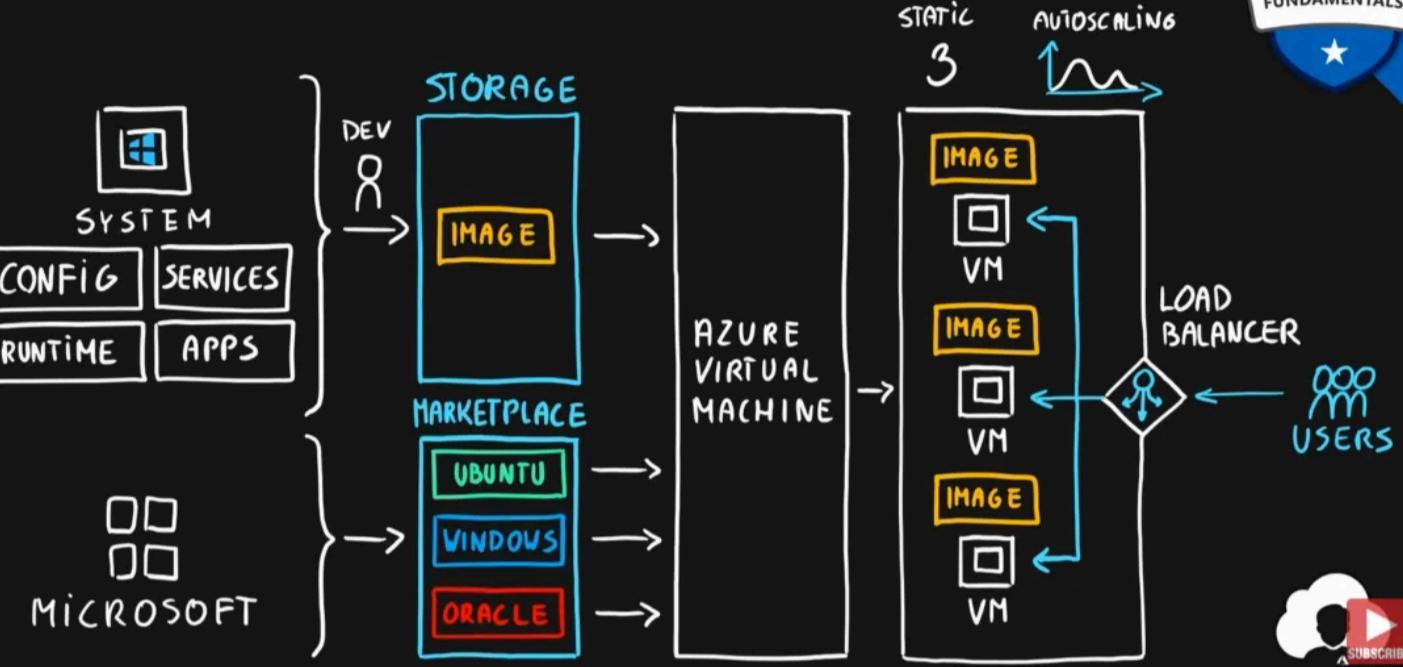
RDP (3389)

HTTP (80)
 HTTPS (443)
 SSH (22)
 RDP (3389)

Licensing

Save up to 49% with a license you already own using Azure Hybrid Benefit. [Learn more](#)

Already have a Windows Server license? * Yes No

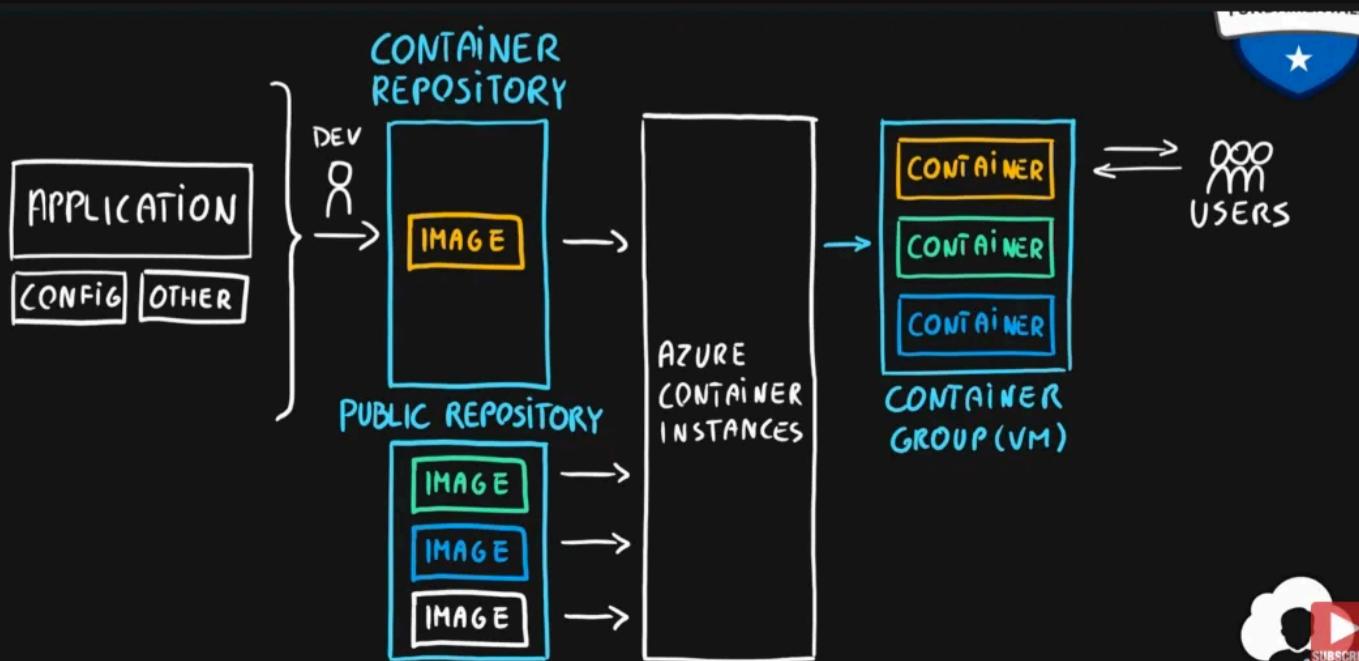


Service	Configuration Control / Maintenance	Autoscaling	Min Nodes	Max Nodes	Scalability
Virtual Machines	☆☆☆☆☆	No	1	1	☆
VM Scale Sets	☆☆☆☆☆	Yes	1	1000/600	☆☆☆☆☆

Containers

Key Characteristics

- Use host's operating system
- Emulate operating system (VMs emulate hardware)
- Lightweight (no O/S)
 - Development Effort
 - Maintenance
 - Compute & storage requirements
- Respond quicker to demand changes
- Designed for almost any scenario



Azure Container Instances



Key Characteristics

- Simplest and fastest way to run a container in Azure
- Platform as a Service
- Serverless Containers
- Designed for
 - Small and simple web apps/services
 - Background jobs
 - Scheduled scripts

ACI

your resources.

Subscription * ⓘ Visual Studio Enterprise

Resource group * ⓘ (New) az-900-aci [Create new](#)

Container details

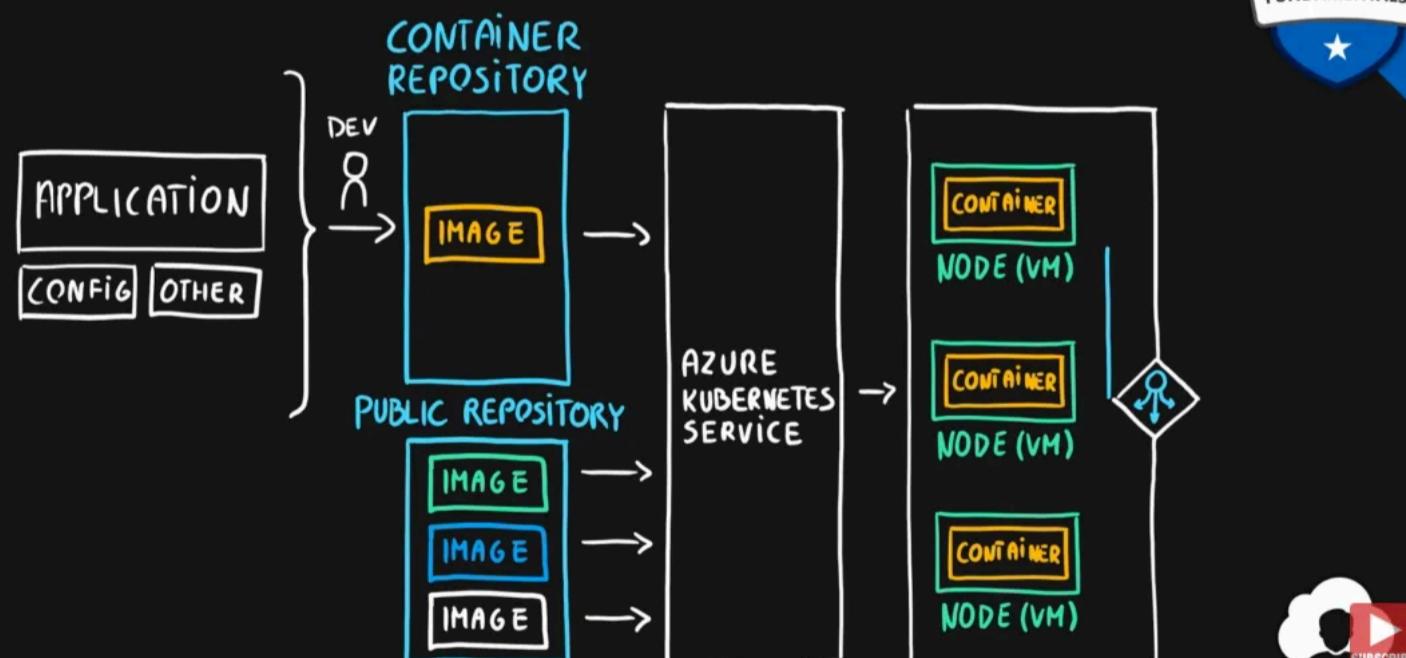
Container name * ⓘ

Region * ⓘ (US) East US

Image source * ⓘ Quickstart images
 Azure Container Registry
 Docker Hub or other registry

Image * ⓘ microsoft/aci-helloworld (Linux) [PLAY](#)

Azure Kubernetes Service (AKS)



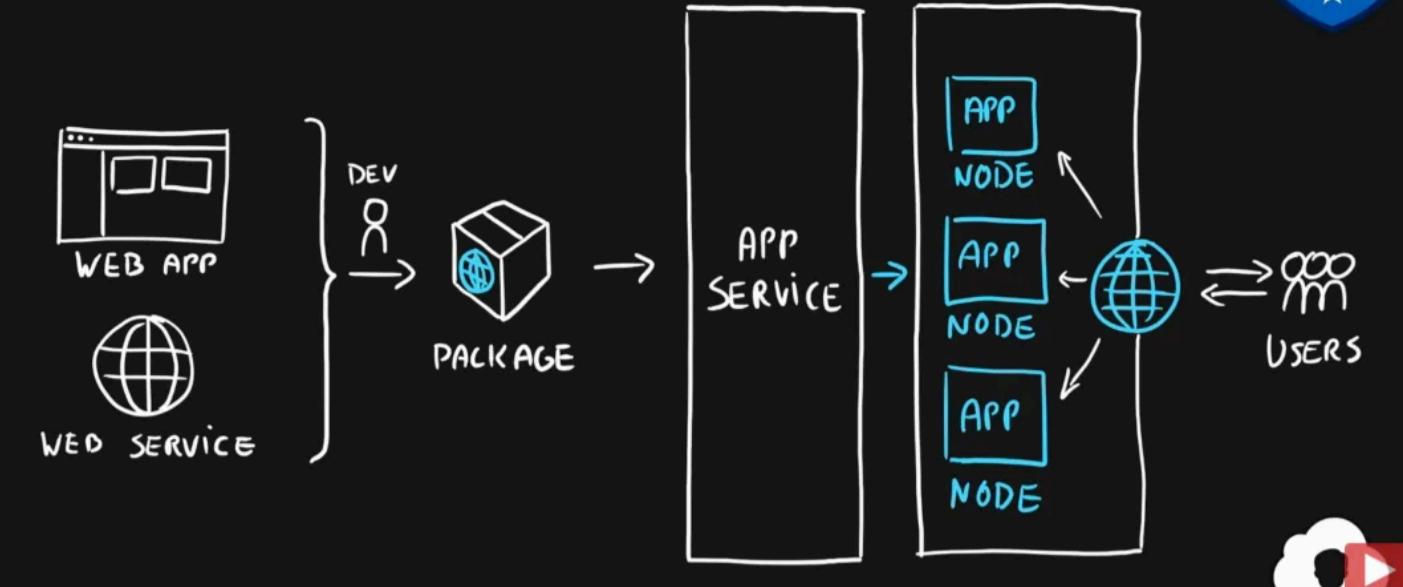
Summary



Service	Configuration Control / Maintenance	Autoscaling	Min Nodes	Max Nodes	Scalability
Virtual Machines	★★★★★	No	1	1	★
VM Scale Sets	★★★★★	Yes	1	1000/600	★★★★★
Container Instances	★☆☆	No	0	20	★☆
Kubernetes Service	★☆☆☆	Yes	3	100	★★★★★



App Service



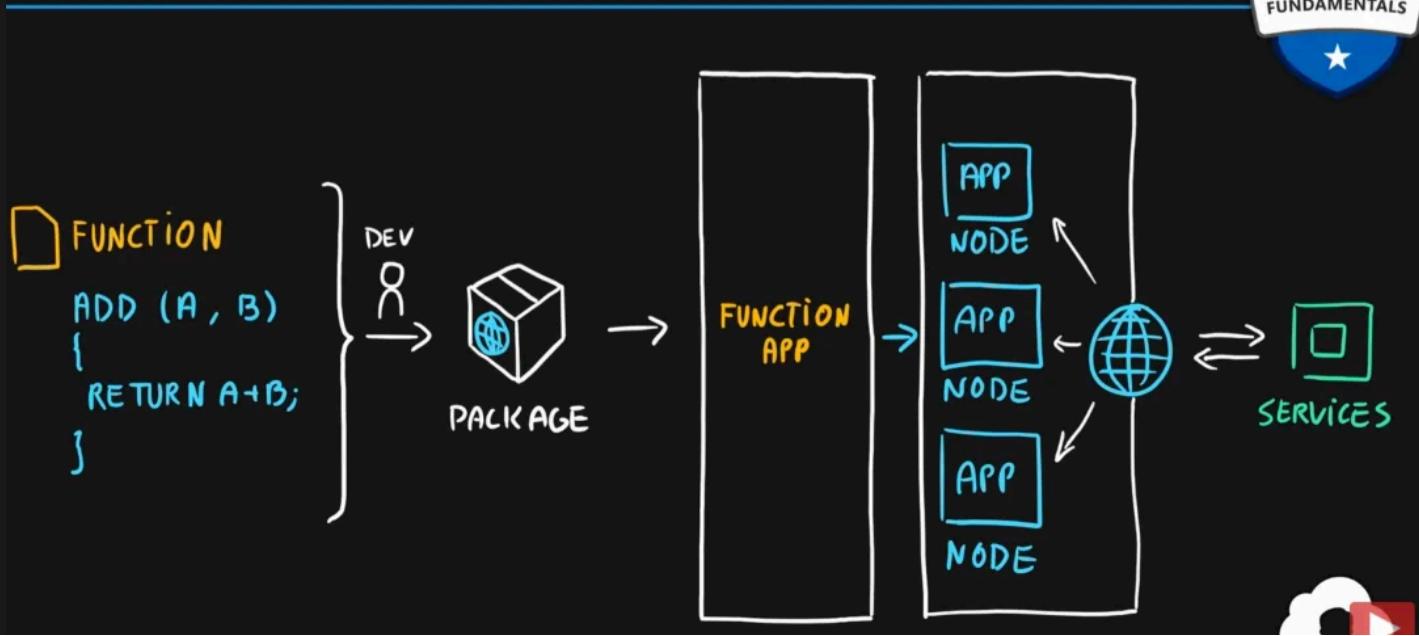
App Service is a simple way to deploy a web application . They have a prebuild templates .So that they can import and then deploy it.

It is very great for simpler apps

The screenshot shows the 'Review + create' step of a form. It includes fields for 'Runtime stack *' (.NET Core 3.1 (LTS)), 'Operating System *' (Windows), 'Region *' (Central US), and 'App Service Plan'. The 'App Service Plan' section is currently loading, with a progress bar showing 'Loading...'. Below this, there's a note: 'Not finding your App Service Plan? Try a different region.' At the bottom, there are buttons for 'Review + create', '< Previous', 'Next : Monitoring >', and a 'SUBSCRIBE' button.

Service	Configuration Control / Maintenance	Autoscaling	Min Nodes	Max Nodes	Scalability
Virtual Machines	★★★★★	No	1	1	★
VM Scale Sets	★★★★★	Yes	1	1000/600	★★★★★
Container Instances	★☆☆	No	0	20	☆☆
Kubernetes Service	★☆☆☆	Yes	3	100	★★★★★
App Service	★☆	Yes	1	20/100	☆☆☆

Azure Functions (Function Apps)



Azure Functions (Function Apps)

Key Characteristics

- Platform as a Service
- Serverless
- Two hosting/pricing models
 - Consumption-based plan
 - Dedicated plan
- Designed for micro/nano-services

Summary

Service	Configuration Control / Maintenance	Autoscaling	Min Nodes	Max Nodes	Scalability
Virtual Machines	☆☆☆☆☆	No	1	1	☆
VM Scale Sets	☆☆☆☆☆	Yes	1	1000/600	☆☆☆☆☆
Container Instances	☆☆☆	No	0	20	☆☆
Kubernetes Service	☆☆☆☆	Yes	3	100	☆☆☆☆
App Service	☆☆	Yes	1	20/100	☆☆☆
Functions	☆	Yes	0	200	☆☆☆☆

Azure Compute Services

Summary

- **Virtual Machines** (IaaS)
Custom software, custom requirements, very specialized, high degree of control
- **VM Scale Sets** (IaaS)
Auto-scaled workloads for VMs
- **Container Instances** (PaaS)
Simple container hosting, easy to start
- **Kubernetes Service** (PaaS)
Highly scalable and customizable container hosting platform
- **App Services** (PaaS)
Web applications, a lot of enterprise web hosting features, easy to start
- **Functions** (PaaS) (Function as a Service) (Serverless)
micro/nano-services, excellent consumption-based pricing , easy to start