Container hosting in Azure | 26.04.2019

SOFECTA

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SOFECTA IN NUTSHELL

COMPANY

A software company specialized in scalable and business-critical systems
The staff consists of industry experts, each with 15+ years of experience
Company founded in 2017, office in Helsinki, staff owned
Partnerships:

elastic Microsoft Telia Particular Software

TOOLS

Microsoft .NET, Microsoft Azure, elastic, NServiceBus in Particular, HTML 5, node js, JavaScript, amazon web services, Microsoft SQL Server, PostgreSQL, MySQL, php

SERVICES

MANAGED INTEGRATIONS

DIGITAL TRANSFORMATION

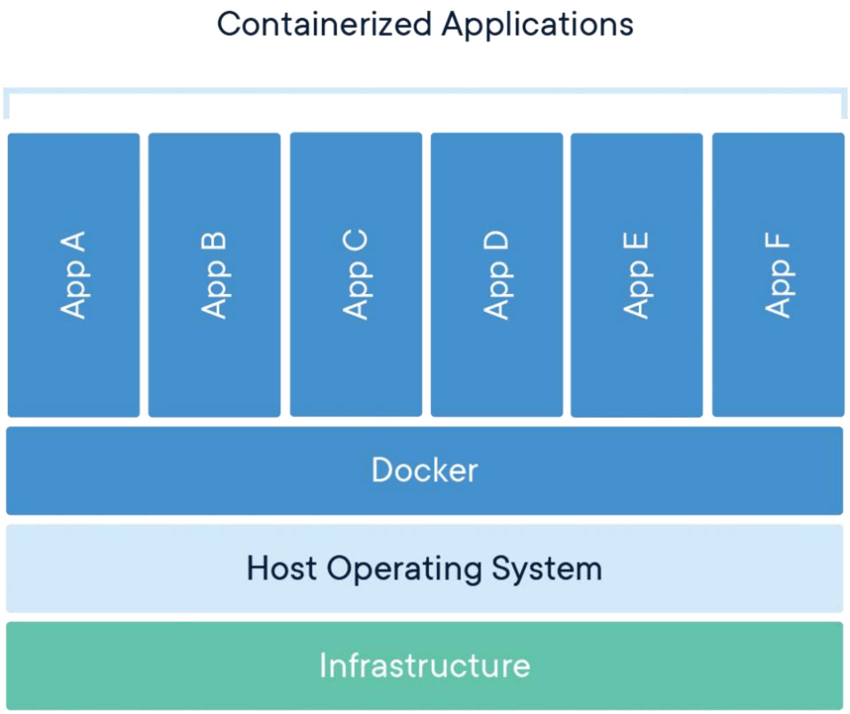
DIGITAL PRODUCTS

SUPPORT SERVICES

SOFECTA

Containers? Refresh my memory!

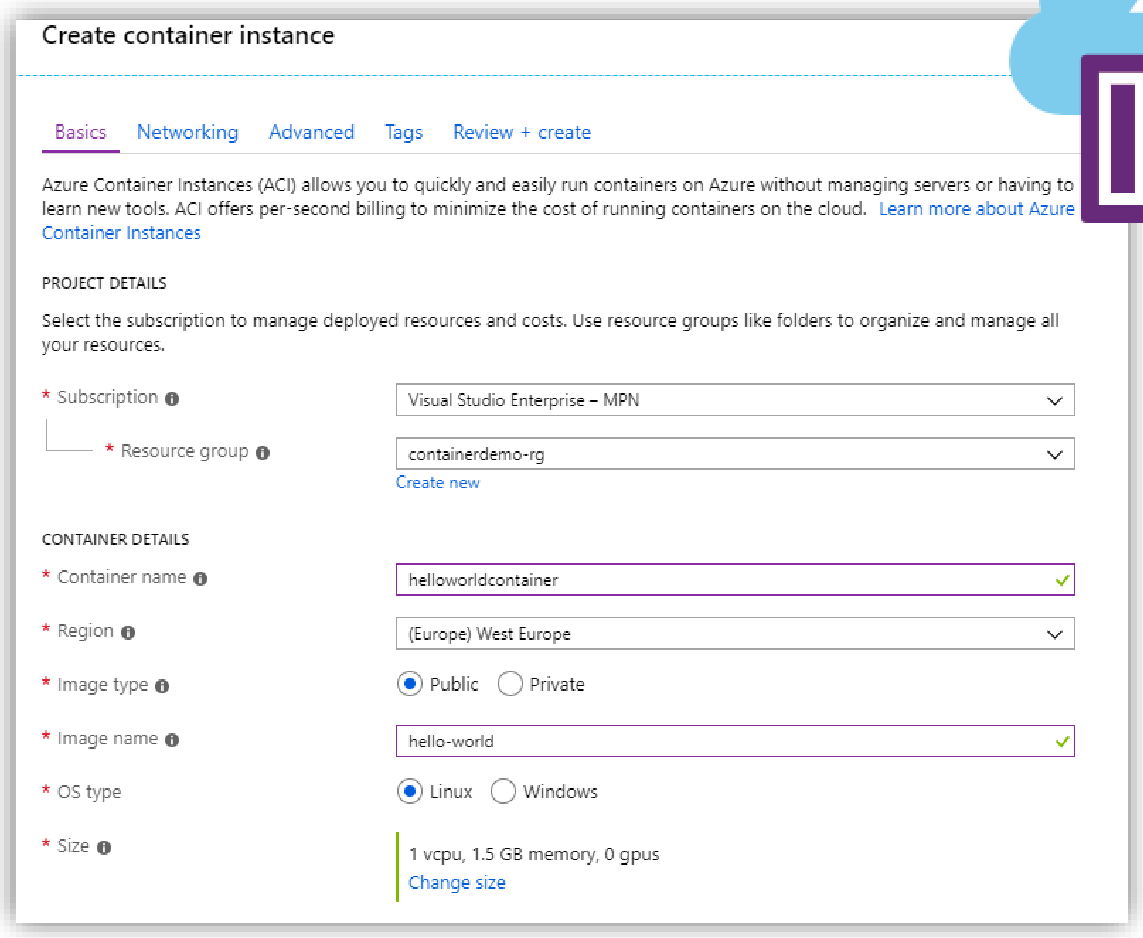
- Standard unit of software
- Operates on an image that holds all necessary system libraries, tools and settings
- Code is packaged along with all of it's dependencies
- Works as a standalone
    - Does not mean it could not reference other external resources
- Transferable from one system to another
- Bring the platform with you
    - Typically running as Linux-based platform



I know my way around containers. How do I host them?

Easiest way to get started is Azure Container Instance. It’s a no-nonsense hosted model for getting your singular containers up and running.

You just need to give it a name and few options to get started.



Create container instance

Azure Container Instances (ACI) allows you to quickly and easily run containers on Azure without managing servers or having to learn new tools. ACI offers per-second billing to minimize the cost of running containers on the cloud. Learn more about Azure Container Instances

PROJECT DETAILS

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

* Subscription: Visual Studio Enterprise – MPN

* Resource group: containerdemo-rg

Create new

CONTAINER DETAILS

* Container name: helloworldcontainer

* Region: (Europe) West Europe

* Image type: ● Public ○ Private

* Image name: hello-world

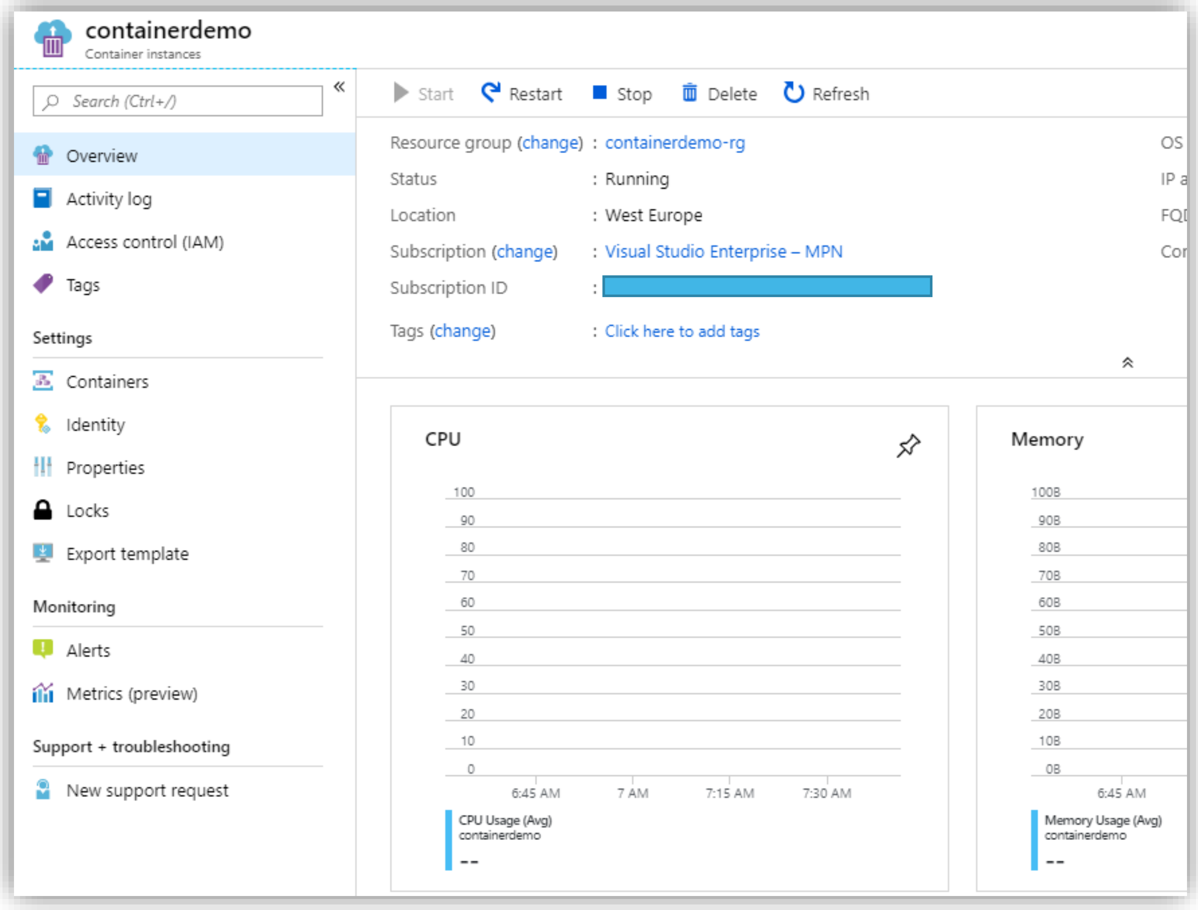
* OS type: ● Linux ○ Windows

* Size: 1 vcpu, 1.5 GB memory, 0 gpus

Change size

I know my way around containers. How do I host them?

You get a straightforward container with metrics, alerts and monitoring.



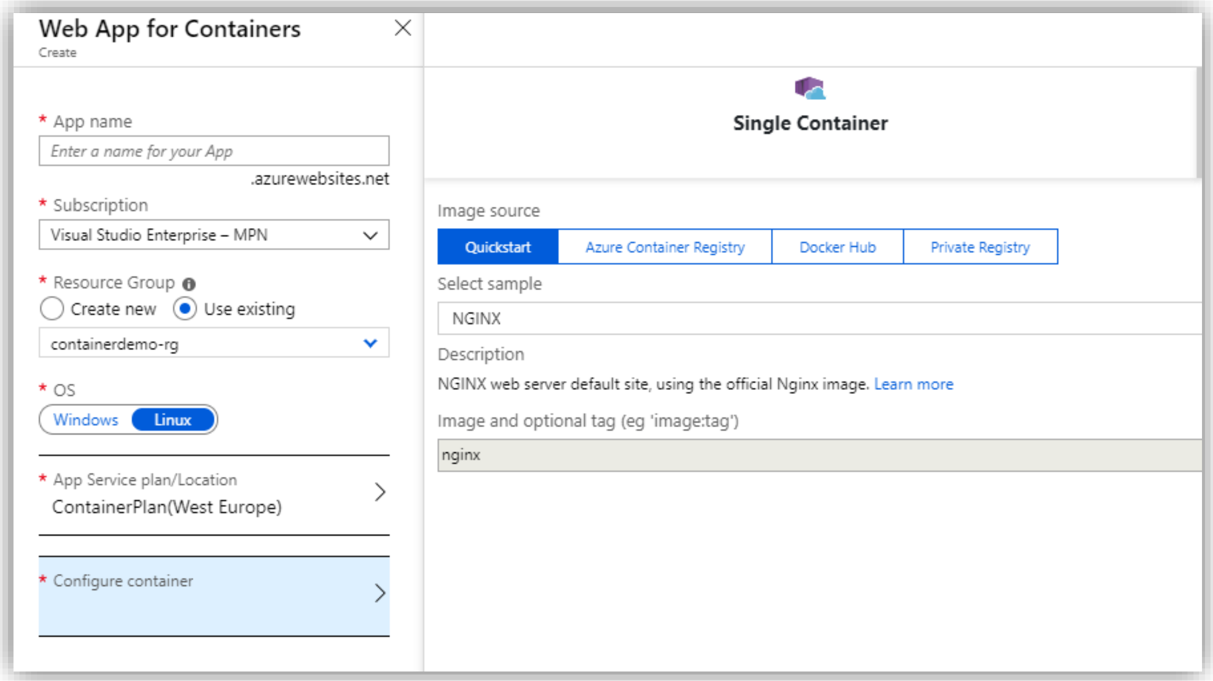
containerdemo
Container instances

Resource group (change) : containerdemo-rg
Status : Running
Location : West Europe
Subscription (change) : Visual Studio Enterprise – MPN
Subscription ID : [redacted]
Tags (change) : Click here to add tags

But what if I wanted more?

Well, that is a start. What if you need more? Web app for containers gives you more options

Custom domain? Integrated CI/CD-pipelines? Integrated AAD authentication? SSL Certificates?



Web App for Containers
Create

* App name
Enter a name for your App
.azurewebsites.net

* Subscription
Visual Studio Enterprise – MPN

* Resource Group
○ Create new ● Use existing
containerdemo-rg

* OS
Windows [✓ Linux]

* App Service plan/Location
ContainerPlan(West Europe)

* Configure container

Single Container

Image source
[✓ Quickstart] Azure Container Registry Docker Hub Private Registry

Select sample
NGINX

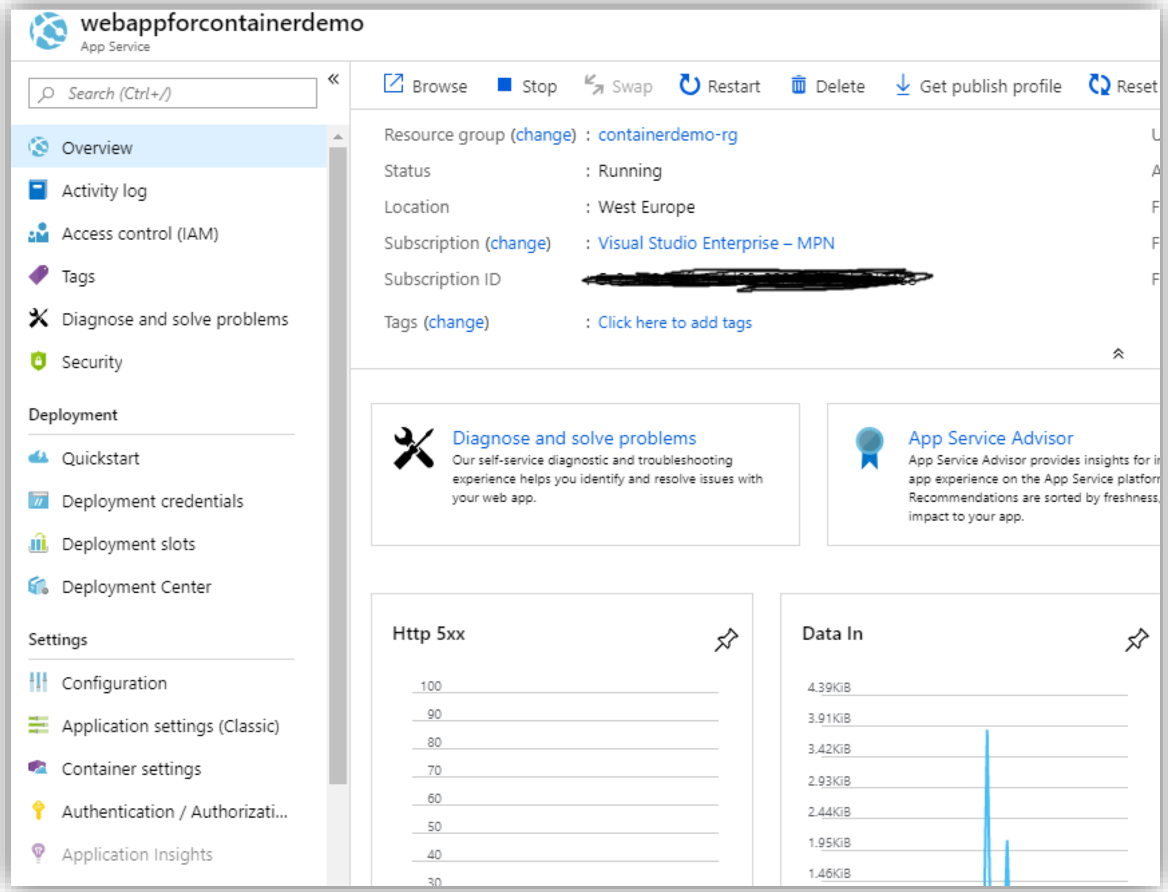
Description
NGINX web server default site, using the official Nginx image. Learn more

Image and optional tag (eg 'image:tag')
nginx

But what if I wanted more?

With Web App for Containers, you get all that and more.

Most of the functionality provided for regular app services is available for you.



Resource group (change) : containerdemo-rg

Status : Running

Location : West Europe

Subscription (change) : Visual Studio Enterprise – MPN

Subscription ID [redacted]

Tags (change) : Click here to add tags

Diagnose and solve problems
Our self-service diagnostic and troubleshooting experience helps you identify and resolve issues with your web app.

App Service Advisor
App Service Advisor provides insights for i
app experience on the App Service platforr
Recommendations are sorted by freshness,
impact to your app.

But what about background logic in the containers?

For dynamic invocation and on-demand workloads you can use Azure Functions to host your containers

For running large-scale cpu-intensive processes. Such as financial modeling, rendering, image processing and more you can run your containers on Azure Batch.

Container orchestration

Container lifecycle management is commonly referenced to as orchestration.

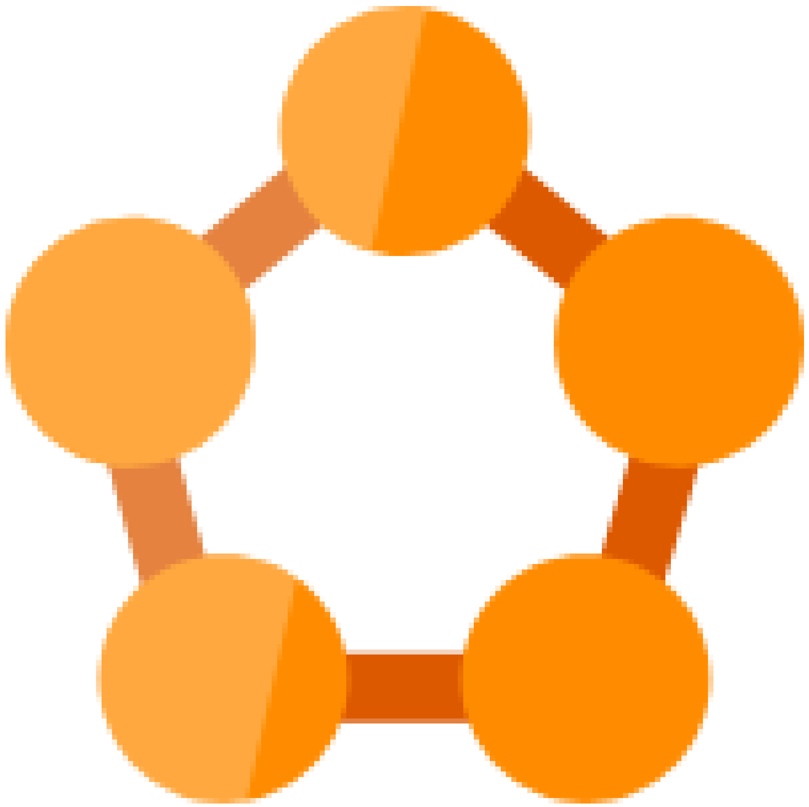
It’s used to control and automate tasks, while providing redundancy and monitoring.

Some typical features for orchestrator include:

- Provisioning and deployment
- Scaling and redundancy
- Monitoring
- Isolation
- Compared to previous solutions, these are usually used to run larger environments consisting of multiple containers and more intricate network topologies.

Service Fabric

- Besides the basic orchestration capabilities, it also provides it’s own paradigms for scalable software
- Optimized for microservices
- Microsoft originally developed it as internal tooling for powering many of Azure’s core services.
- Use the same tooling and UI to operate on both applications and containers
- Linux version is open source. Windows-version work in progress.
- If you want to utilize it’s Actor-models, you should be looking into it. But AKS is better option for purely container-based software.



AKS

- Provides a managed Kubernetes environment
  - Kubernetes is world’s most widely known and used orchestration service.
- Neatly integrates to Azure IaaS offerings.
- Large community, and shared knowledge is plentiful.
- Production-grade
- Logical isolation allows multiple teams to utilize the same clusters for operations.
- Dev Spaces is a feature of AKS which allows developers to quickly provision their own namespace within AKS and have a complex microservices running within moments.

Azure Container Registry

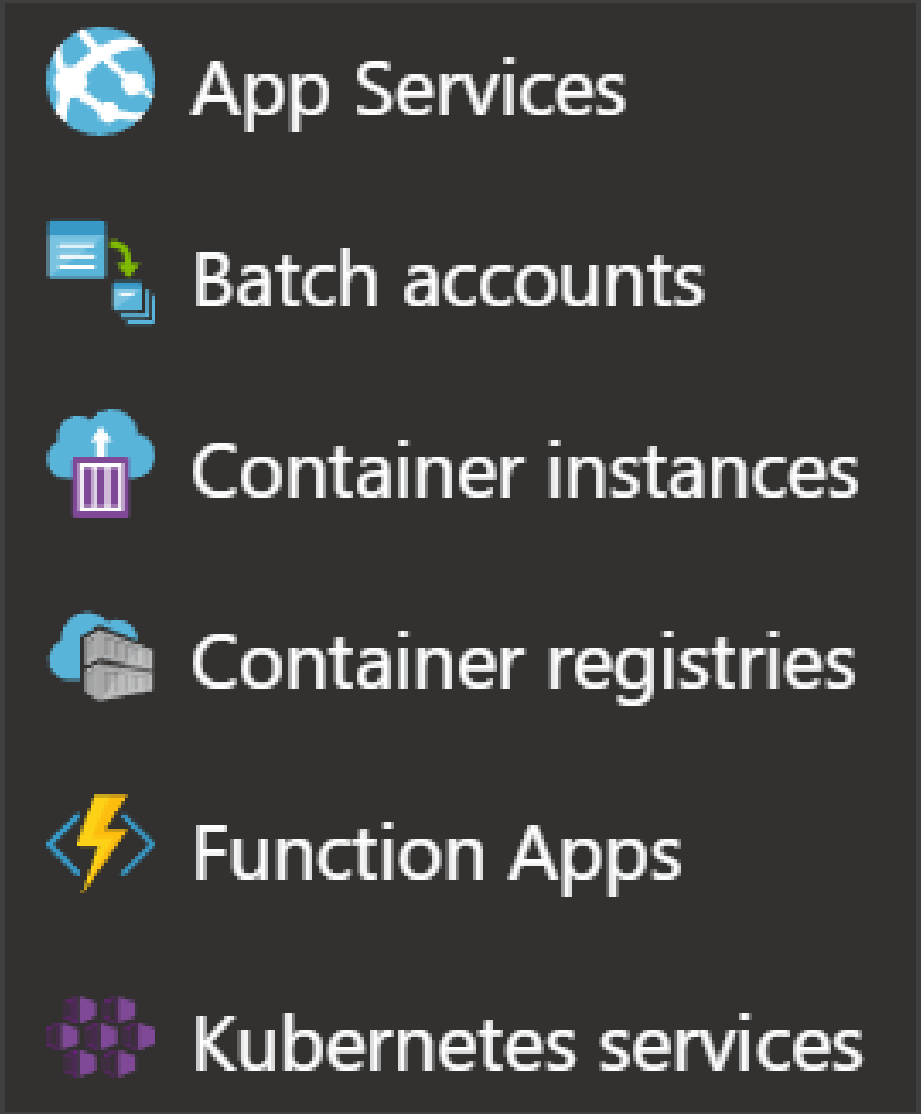
Provides a private hosted registry of container images in your own subscription and control.

If you don’t have paid subscription to Docker Hub and want to keep the images private

Well supported by most of Azure’s services.

Recap

- Many ways to host your containers.
- Choose the ones fitting your use cases



App Services

Batch accounts

Container instances

Container registries

Function Apps

Kubernetes services

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