

# What is Container/Containerization and Azure Container

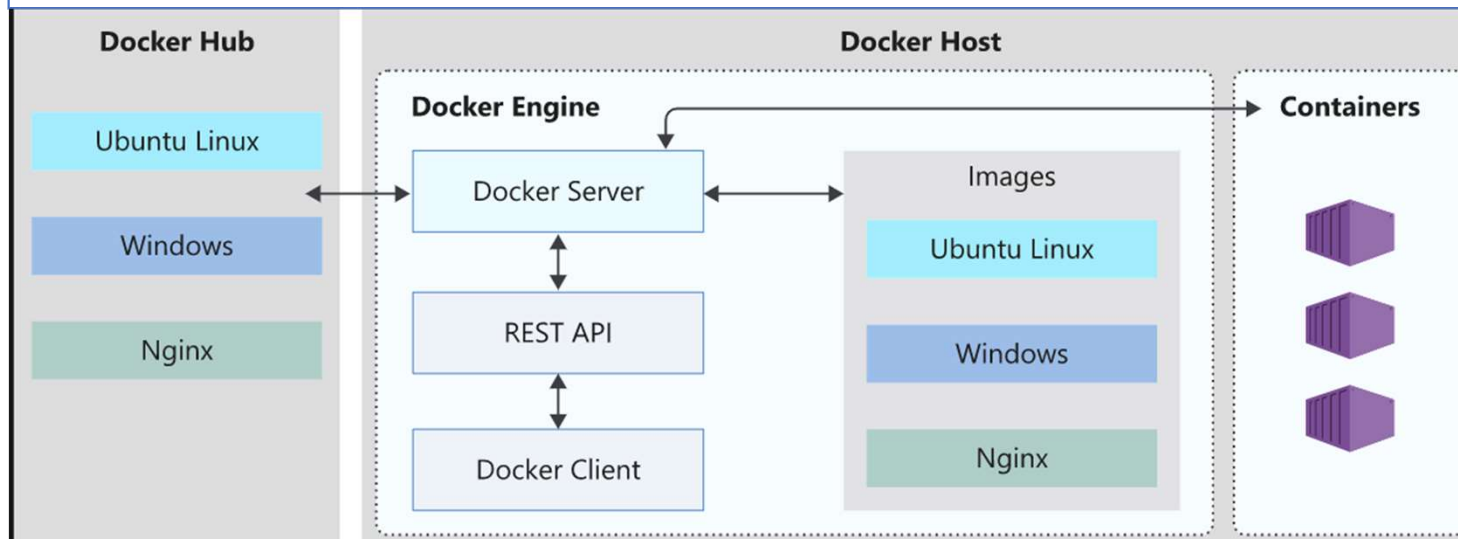
- **What is Container :** Just as shipping industries use physical containers to isolate different cargos—for example, to transport in ships and trains—software development technologies increasingly use an approach **called containerization.**
- A **standard package of software—known as a container**—bundles an application's code together with the related configuration files and libraries, and with the dependencies required for the app to run. This allows developers and IT pros to deploy applications seamlessly across environments.
- Link : <https://azure.microsoft.com/en-us/overview/what-is-a-container/#overview>

# Administer Container and Azure Docker Container

- Link : <https://docs.microsoft.com/en-us/learn/paths/administer-containers-in-azure/>
- Link : <https://docs.microsoft.com/en-us/learn/modules/intro-to-docker-containers/>
- Link : <https://docs.microsoft.com/en-us/learn/modules/intro-to-docker-containers/2-what-is-docker>
- **What is a container :** A container is a loosely isolated environment that allows us to build and run software packages. These software packages include the code and all dependencies to run applications quickly and reliably on any computing environment. We call these packages **container images**.
- **What is software containerization :** Software containerization is an OS virtualization method that is used to deploy and run containers without using a virtual machine (VM). Containers can run on physical hardware, in the cloud, VMs, and across multiple OSs.
- **What is Docker :** Docker is a containerization platform used to develop, ship, and run containers. Docker doesn't use a hypervisor, and you can run Docker on your desktop or laptop if you're developing and testing applications. The desktop version of Docker supports Linux, Windows, and macOS. For production systems, Docker is available for server environments, including many variants of Linux and Microsoft Windows Server 2016 and above. Many clouds, including Azure, support Docker.

## Docker architecture

- The Docker platform consists of several components that we use to build, run, and manage our containerized applications.
- **Docker Engine** : The Docker Engine consists of several components configured as a client-server implementation where the client and server run simultaneously on the same host. The client communicates with the server using a REST API, which enables the client to also communicate with a remote server instance.



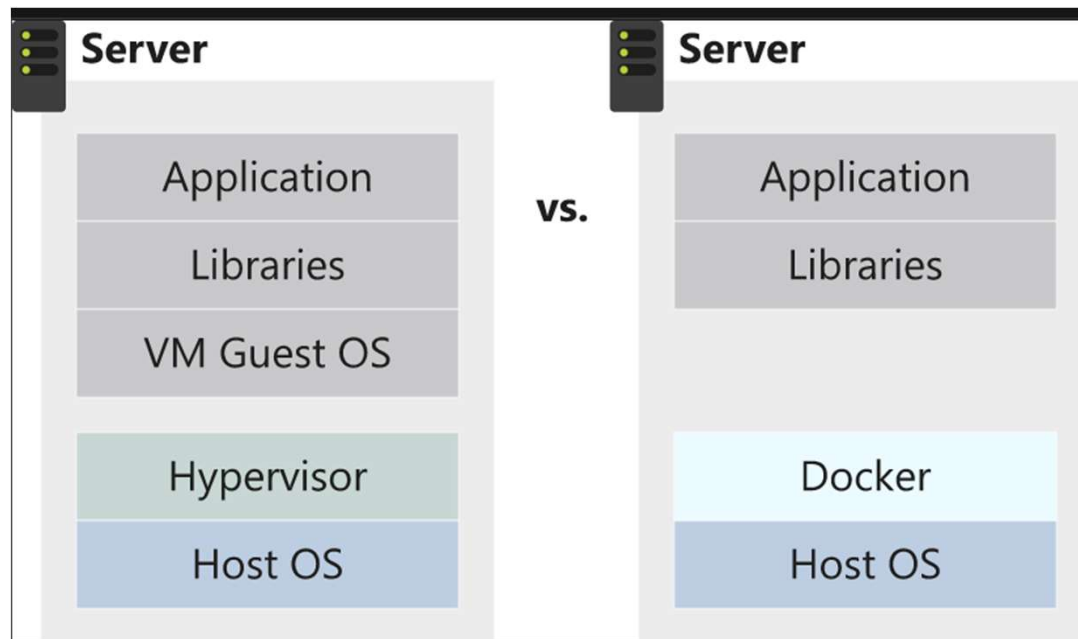
## What is Azure Container Instance Service?

- Use **Azure Container Instances** to run serverless Docker containers in Azure with simplicity and speed. Deploy an application to a container instance on-demand when you don't need a full container orchestration platform like Azure Kubernetes Service.
- Link : <https://docs.microsoft.com/en-us/azure/container-instances/container-instances-quickstart-portal>

# When to use Docker containers

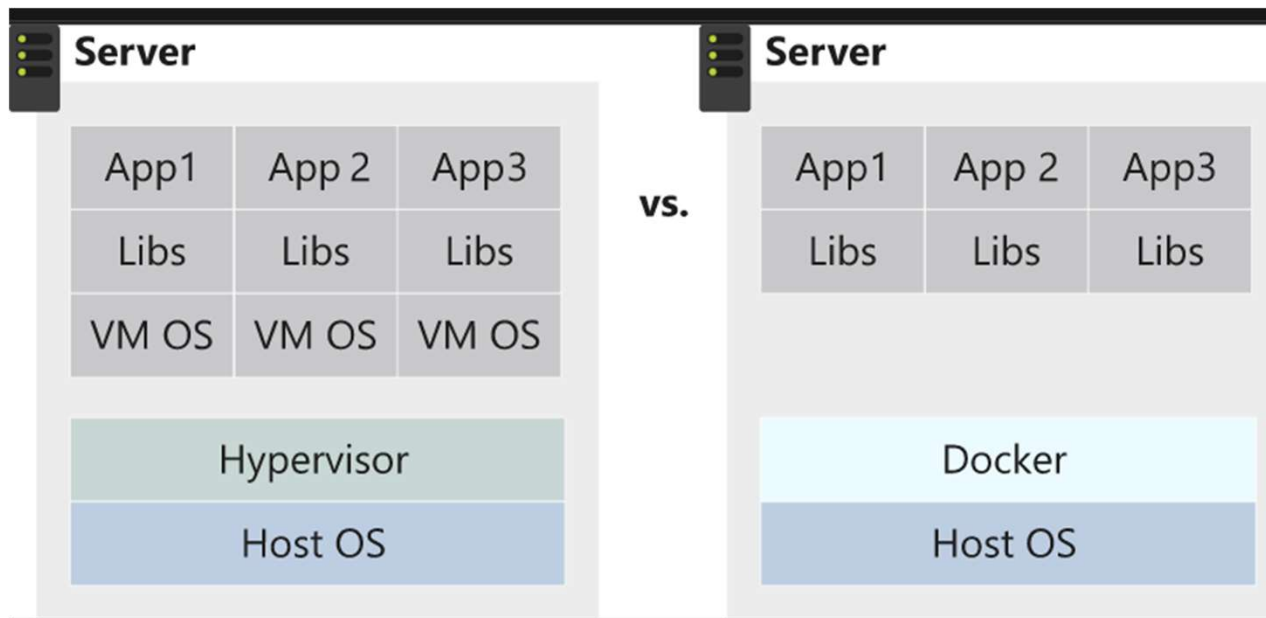
- As we've seen, Docker has several features for us to use. Here, we'll look at the benefits that Docker provides to our development and operations teams. We'll also look at a few scenarios where Docker may not be the best choice.
- These aspects will help you decide if Docker is a good fit for your containerization strategy.
- Recall from earlier, there were a number of challenges our team faced as they develop and publish our order tracking portal. They were looking for a solution to:
  - Manage our hosting environments with ease
  - Guarantee continuity in how we deliver our software
  - Ensure we make efficient use of server hardware
  - Allow for the portability of our applications
- Docker is a solution to these challenges. Let's have a look at all the benefits we've covered so far.
- Link : <https://docs.microsoft.com/en-us/learn/modules/intro-to-docker-containers/5-when-use-docker-containers>

# Docker benefits



- **1) Efficient use of hardware**

## 2) Container isolation:





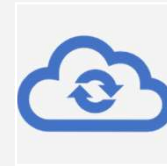
**3) Application portability**



**4) Application delivery**



**5) Management of hosting environments**



**6) Cloud deployments**

# Azure Container vs. virtual machine

Link : <https://azure.microsoft.com/en-us/overview/what-is-a-container/#overview>



# What is hypervisor

- Link : <https://www.serverwatch.com/virtualization/hypervisor-server/>