

Running Worker Services in Production



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Overview

Running workers in containers

Running workers as Windows services

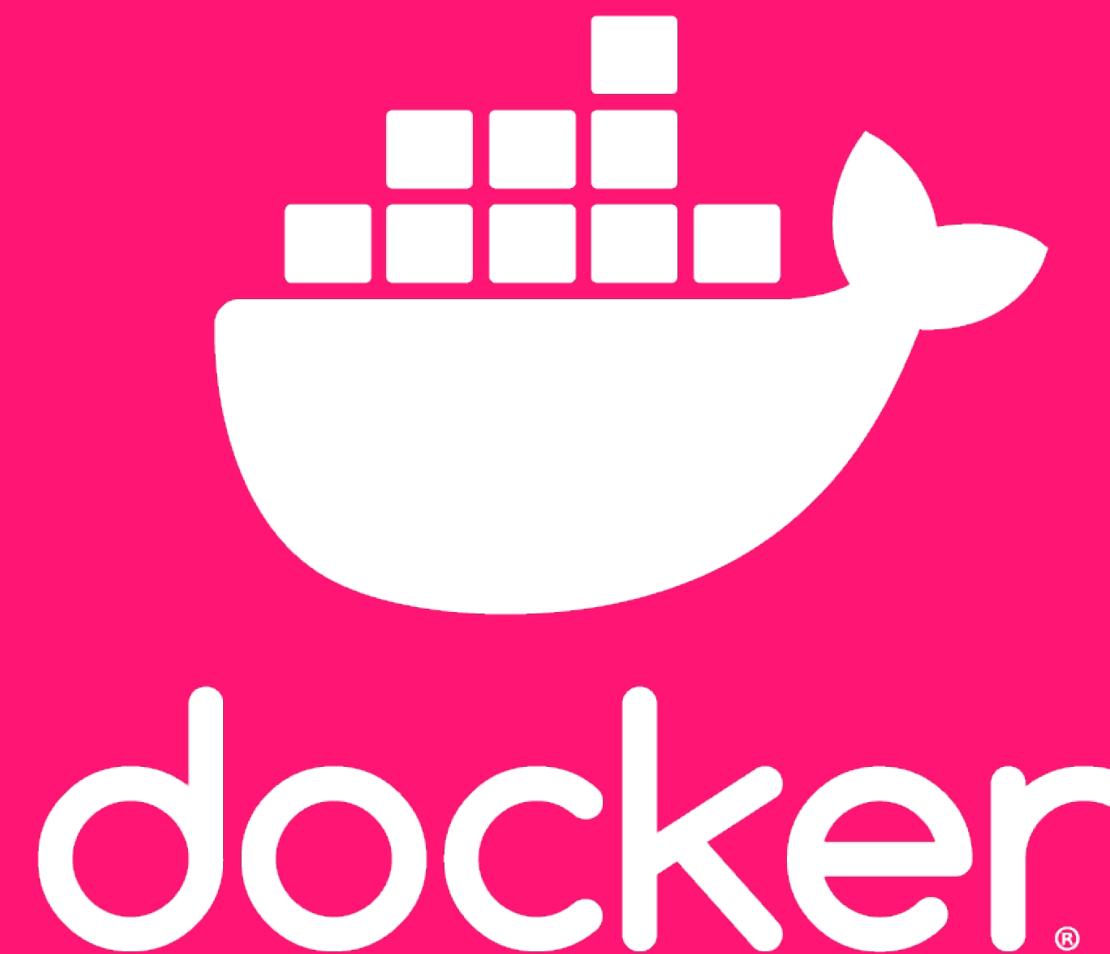
Running workers as Linux daemons

Running workers on Azure App Service



Docker Primer





Containers

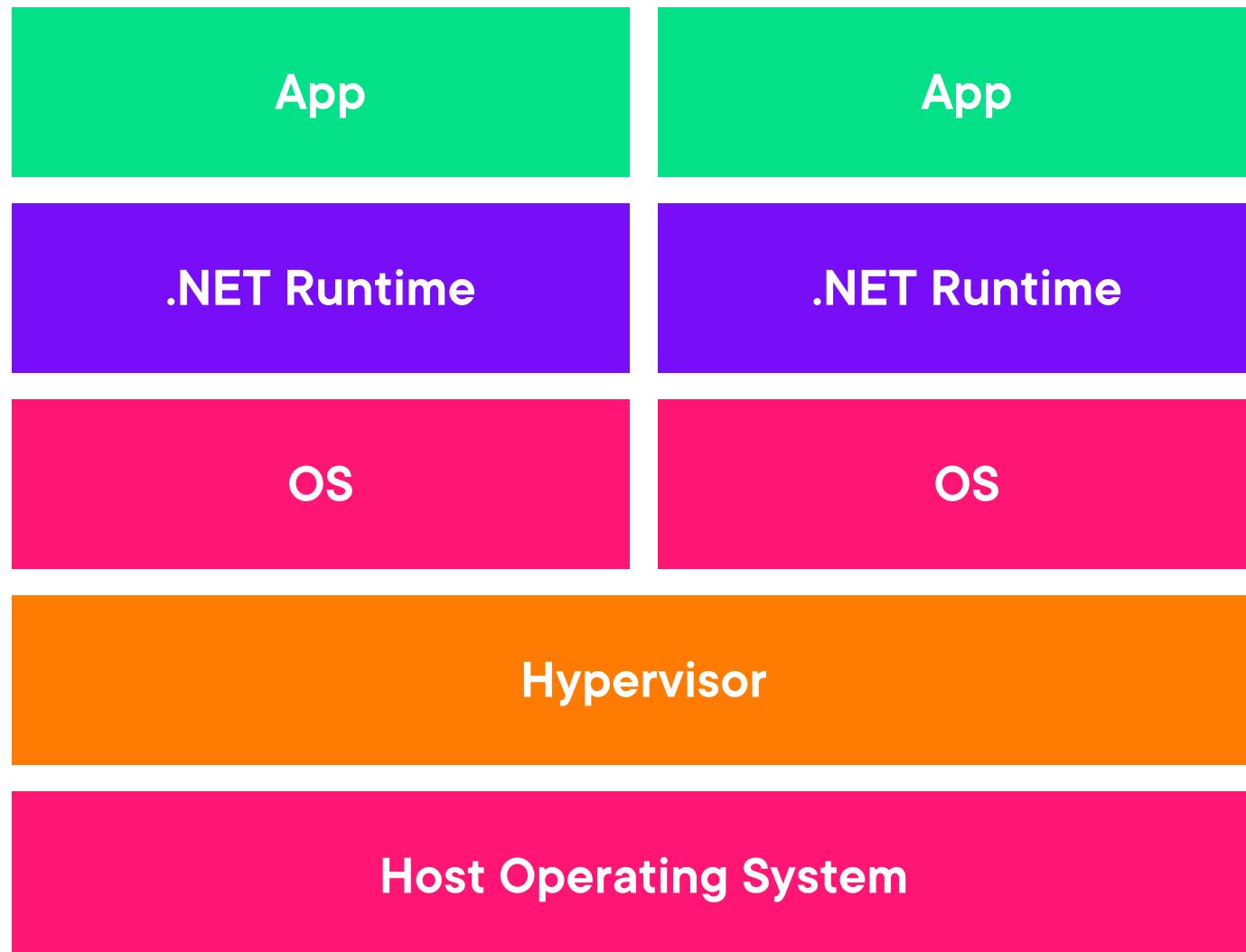
Containers are a popular choice for deploying microservices to production. Worker services can easily be deployed in containers.



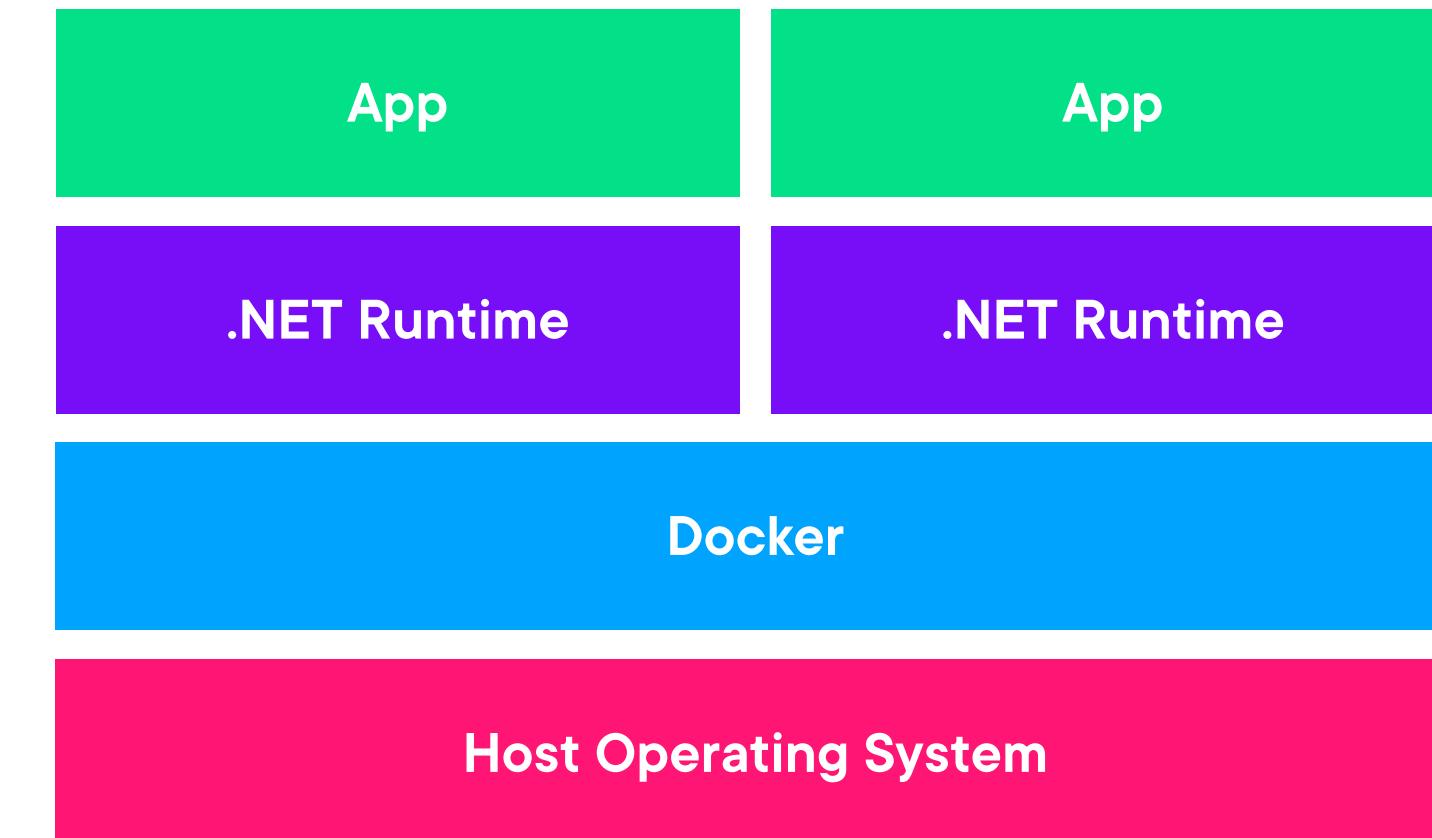
Key principles and terminology



VMs vs. Containers



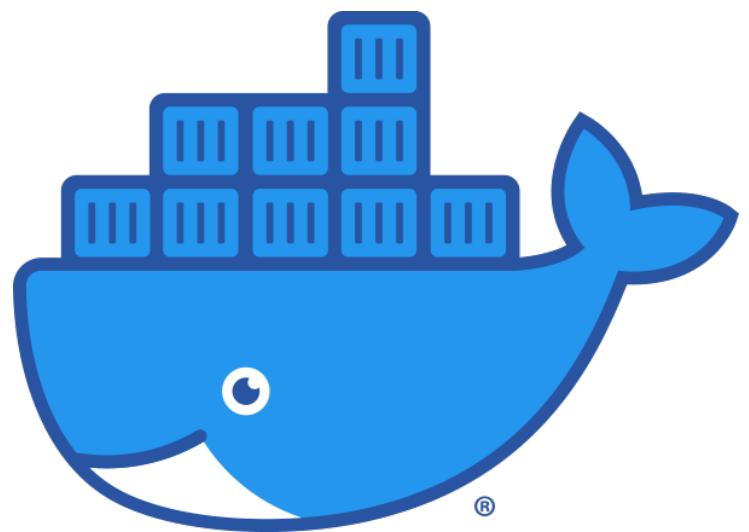
**Virtual Machine
Stack**



Docker Stack



Docker and .NET



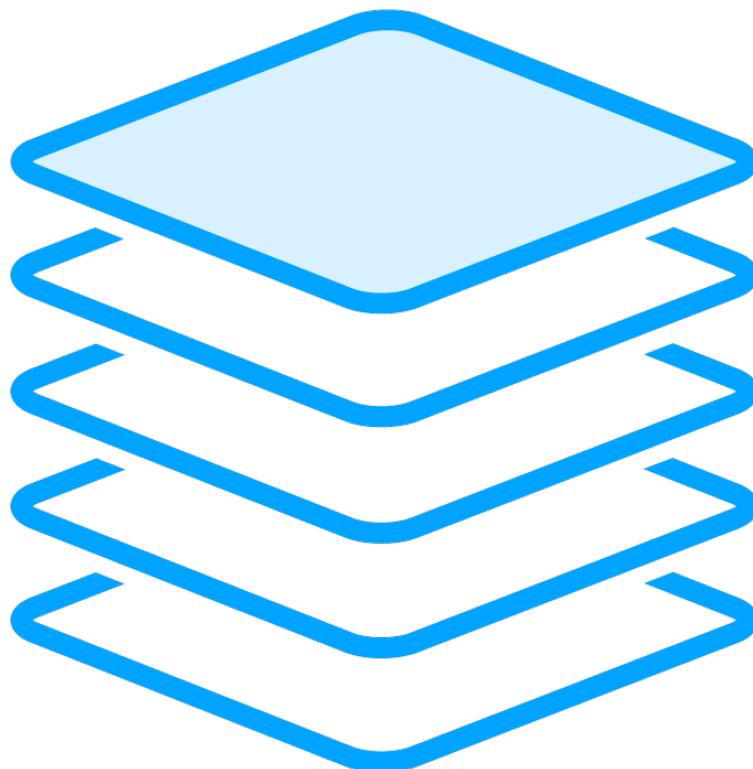
Windows

Linux

Mac



Docker Images



Include the dependencies needed to run an executable

Built from several immutable layers

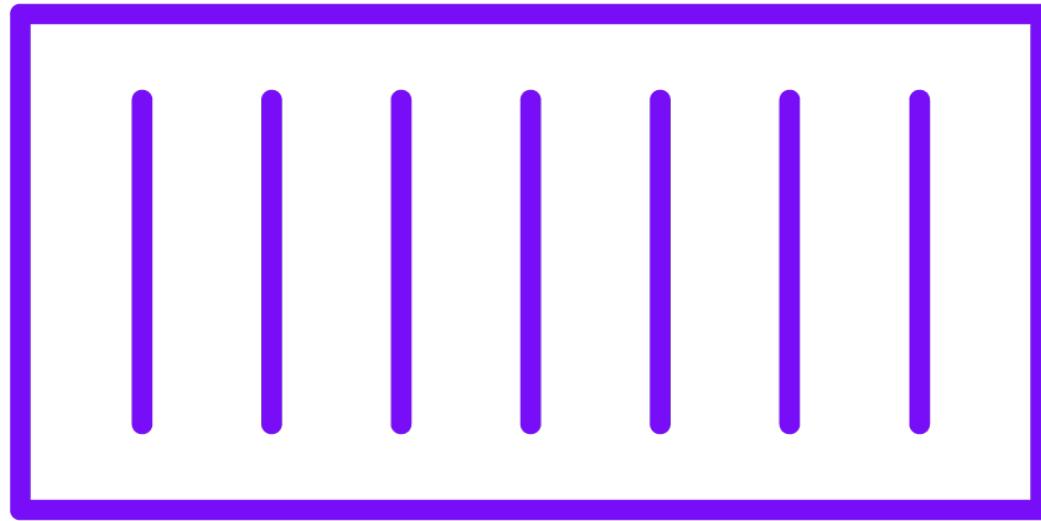
Immutability provides consistency

New images can be based on existing ones

A unit of distribution and deployment



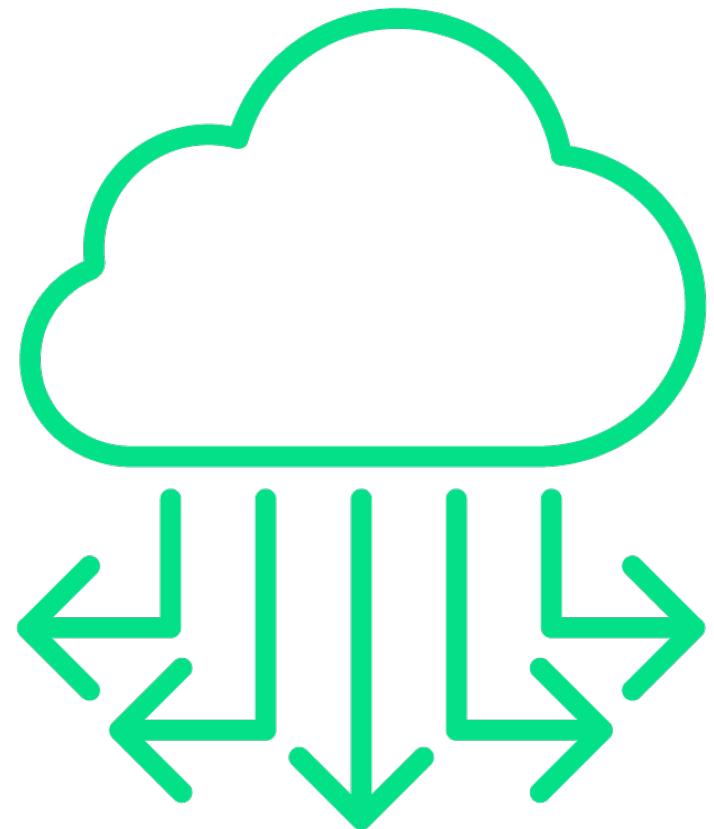
Docker Containers



- Runnable instance of an image**
- Smaller footprint than virtual machines**
- Many containers can be run on a host**
- Run in isolation**



Orchestrators



Manage, schedule and deploy containers

Health monitoring

Scaling

Load balancing

Service discovery



Run a worker service in a Docker container

- Create a Dockerfile
- Build a Docker image
- Run the worker service container



You'll need Docker installed
to follow along.

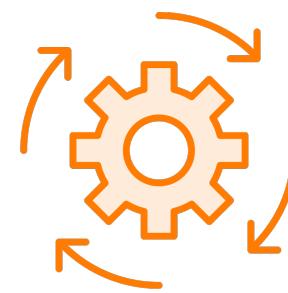


Run a worker service as a Windows service

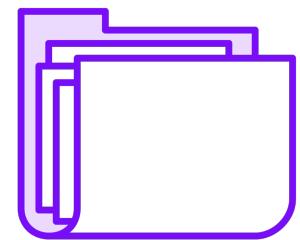
- Adapt the worker service code
- Build an executable
- Register the Windows service



UseWindowsService Method



Configures the host to use a WindowsServiceLifetime



Sets the ContentRootPath to ApplicationContext.BaseDirectory



Enables logging to the Windows event log



AWS credentials should be registered securely.



Run a worker service as a Linux daemon

- Modify code to support Systemd
- Publish a Linux executable
- Transfer files to a Linux VM
- Load and start the Systemd service



Run a worker service on Azure App Service

- Publish to Azure
- Configure the App Service
- Review application logs



Summary

- Created a Docker image for the worker service**
- Ran the Docker image as a container**
- Converted for use as a Windows service**
- Registered and ran the Windows service**
- Converted for use as a Linux daemon**
- Created a unit file and ran the daemon**
- Published to Azure App Service**



Course Summary

Added hosted services to an ASP.NET Core application

Transferred data between requests and hosted services

Learned about .NET worker services

Built a worker service for processing messages from AWS SQS

Learned about advanced concepts

Deployed a worker service to production



Congratulations!





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