

# Creating Docker Images

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# Overview



## Dockerfile basics

## Building images

- docker build

## Tagging images

- docker tag

## Pushing images to a registry

- docker push

## Azure CLI

- create an Azure Container Registry



# Creating Docker Images with Dockerfiles

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# Dockerfile

Contains instructions for how to create a Docker image

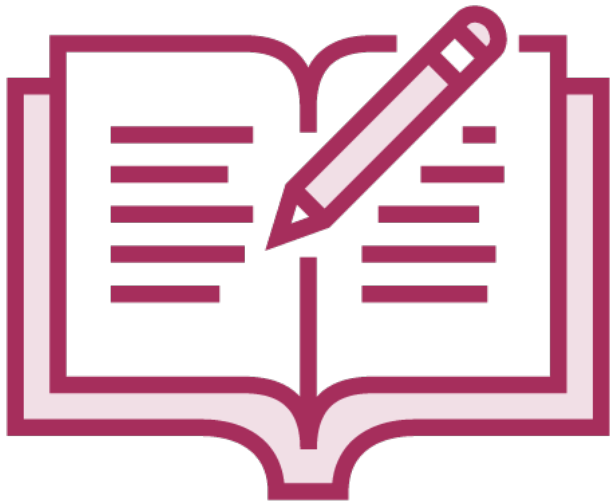


```
FROM microsoft/dotnet:aspnetcore-runtime  
WORKDIR /app  
COPY ./out .  
ENTRYPOINT ["dotnet", "samplewebapp.dll"]
```

```
docker build -t samplewebapp .
```



# Creating Dockerfiles



## Copy example dockerfiles

- e.g. ASP.NET Core

## Visual Studio 2017

- Right-click project > Add Docker support

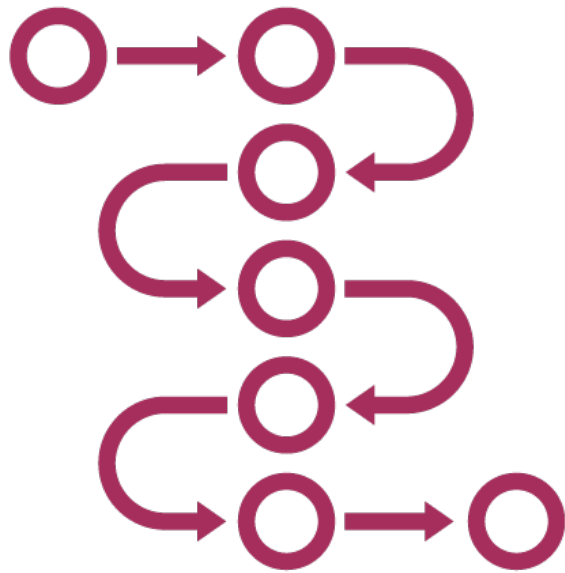
## Yeoman

- yo docker

## Azure Functions CLI

- func init --docker

# Multi-stage Dockerfiles



## Single stage dockerfile

- Copies in a pre-built application

## Use Docker to build your application

- No developer SDKs needed locally

## Multi-stage dockerfile

- Stage 1: build the application in a container with the SDKs
- Stage 2: copy the published application into a container with the runtime

```
FROM microsoft/dotnet:sdk AS build-env
WORKDIR /app
```

```
# Copy csproj and restore as distinct layers
COPY *.csproj ./
RUN dotnet restore
```

```
# Copy everything else and build
COPY . ./
RUN dotnet publish -c Release -o out
```

```
# Build runtime image
FROM microsoft/dotnet:aspnetcore-runtime
WORKDIR /app
COPY --from=build-env /app/out .
ENTRYPOINT ["dotnet", "samplewebapp.dll"]
```





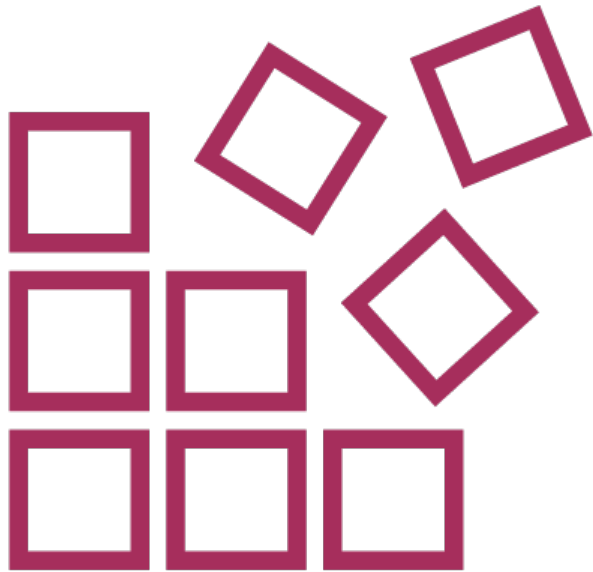
# Demo



**Build an image with a multi-stage  
dockerfile**



# Container Registries



**Docker images can be stored locally**

**Use container registries to share images**

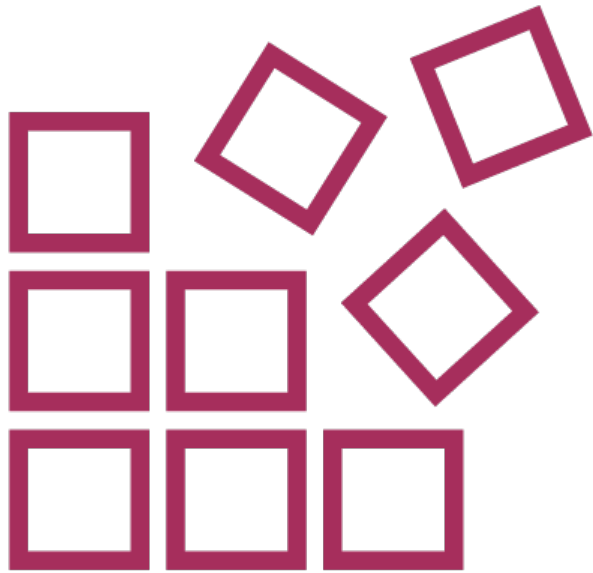
**Docker Hub hosts public images**

- <https://hub.docker.com/>
- Also supports private image hosting

**Azure Container Registry (ACR)**

- Store containers in Azure
- Can build images automatically

# Creating Azure Container Registries



**Azure portal**

**PowerShell**

**Azure CLI**

- Free
- Cross-platform
- Install locally
- Use a “cloud shell” in the Azure portal

# Demo



## Create an Azure Container Registry

- Azure CLI



# Container Registry Security



**Images not accessible to the public**

**Can restrict access rights**

**Only allow trusted images**

**Automatically update to use latest security updates**

# Demo



**Push a local Docker image to an Azure Container Registry**



# Summary



## Dockerfile syntax

- FROM, WORKINGDIR, COPY, RUN & ENTRYPOINT

## Multi-stage builds

## Build a Docker image

- docker build

## Private container registries

- Azure Container Registry

## Azure CLI

- az acr create
- az acr login
- docker tag
- docker push



Up next:  
Running Containers on  
Azure Container Instances

