Getting Started With Docker!

http://bit.ly/2ErpzDa

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Who am I?

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Who likes?

- .Net Core
- Command Line commands
- Visual Studio Code
- Linux environments in general
- This demo is full of these things!

What is Docker?

- It’s a container platform to **build**, secure, and maintain applications on premise or in the cloud.
- It’s made of up layered containers that run in the kernel of the host OS.
- Starts with a base OS system such as Windows Nano Server, Windows Server Core, or some flavor of Linux.

*Everything in this demo will run a linux base image.

Why should I use docker?

- Scalability, Scalability, Scalability!!!
- Easier/Faster deployments
- Cost Savings(?)
- Platform Agnostic
- Greater Separation of Concerns
- Containerized Applications
- Faster on-boarding
- And finally Scalability

Who Doesn’t love Microservices!?!?!

Who should use docker?

- Software Developers/Engineers
- System Admins
- DevOps Engineers
- DBAs?

Why I use Docker!

- Developing .Net Core apps across several platforms (MacOS, Windows 10, Ubuntu, Debian, and CentOS)
- Evaluating software
- Proof of concept apps
- Avoid installing applications

So what do I need to know?

Docker lingo

Docker Lingo

Image:

What you build to run in a container (think VM). Can but pulled from a public repo or custom built.

Docker Lingo

Container:

The thing that runs your image. Kind of like a VM but runs in the host OS Kernal not in a Virtualizer.

Docker Lingo

Repository:

A collection of images. Can but public or private and hosted on premise or in a cloud solution.

Docker Lingo

Registry:

A service that contains repositories. Can be public or private.

Docker Lingo

Dockerfile:

File that containers information on how to build your image.

Docker Lingo

Tags:

A way to name and version your images.

Docker Lingo

Orchestrator:

VERY simply put, it's what controls and monitors your running containers.

(WTH is Kubernetes?)

So what do I need to know? Cont...

Command line commands

So what do I need to know? Cont...

Build:

```
docker build -t webapp-dev:demo1 .
```

So what do I need to know? Cont...

Run:

```
docker run --rm -p 5001:80 --name web-dev-demo
    web-dev:demo1
```

So what do I need to know? Cont...

Container start/stop:

docker container stop web-dev-demo

So what do I need to know? Cont...

Tag:

docker tag webapp-dev:demo1 bmccoy04/coreDemo:part2

(docker tag "appname/image" "username"/"repo":"tag used for versioning")

So what do I need to know? Cont...

Push:

```
docker push bmmcoy04/coreDemo:part2
```

So what do I need to know? Cont...

Prune:

docker image prune -a

So what do I need to know? Cont...

```
docker run -e 'ACCEPT_EULA=Y' -e \
'MSSQL_SA_PASSWORD=YourStrong!Passw0rd' \
-p 1433:1433 --name sql1 \
-d microsoft/mssql-server-linux:2017-latest
```

Example Dockerfile

```
FROM microsoft/aspnetcore-build:2.0 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/aspnetcore:2.0
WORKDIR /app
COPY --from=build-env /app/out .
ENTRYPOINT ["dotnet", "WebApp.dll"]
```

Docker-Compose

- Run multi-tenant apps. (include webapps, webapis, caching servers, dbs?)
- Can actually start scaling stuff.
- Can be used for debugging in Visual Studio

DEMO

What Next?

Volumes / Mounts

- Used for persistent storage.
- Can be created separately from containers.
- Can mount a volume to a container when a container is started.

Orchestrators

- Docker Swarm.
- Kubernetes.
- Azure Service Fabric. (Not App Fabric)

Helpful links

- https://hub.docker.com/explore/
- https://www.docker.com/get-docker
- https://docs.docker.com/
- https://stackoverflow.com/questions/tagged/docker
- https://twitter.com/BMcCoy04
- http://bit.ly/2ErpzDa (These slides)

BR .Net, Sql Server, and Bi User groups!

- Meet 2nd wednesday of every month.
- Free Tech Talks.
- Free Food and prizes!
- Get to meet/talk to fellow developers in the area.

Meet up link: https://bit.ly/brusergroups

Questions?

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