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Docker and Visual Studio

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Overview

- Using the Docker tools in Visual Studio 2017
- Building your images with Docker files
- Building a group of containers using Docker compose files
- Debugging your cross-container solutions with visual Studio 2017

Using the Docker Tools in Visual Studio 2017

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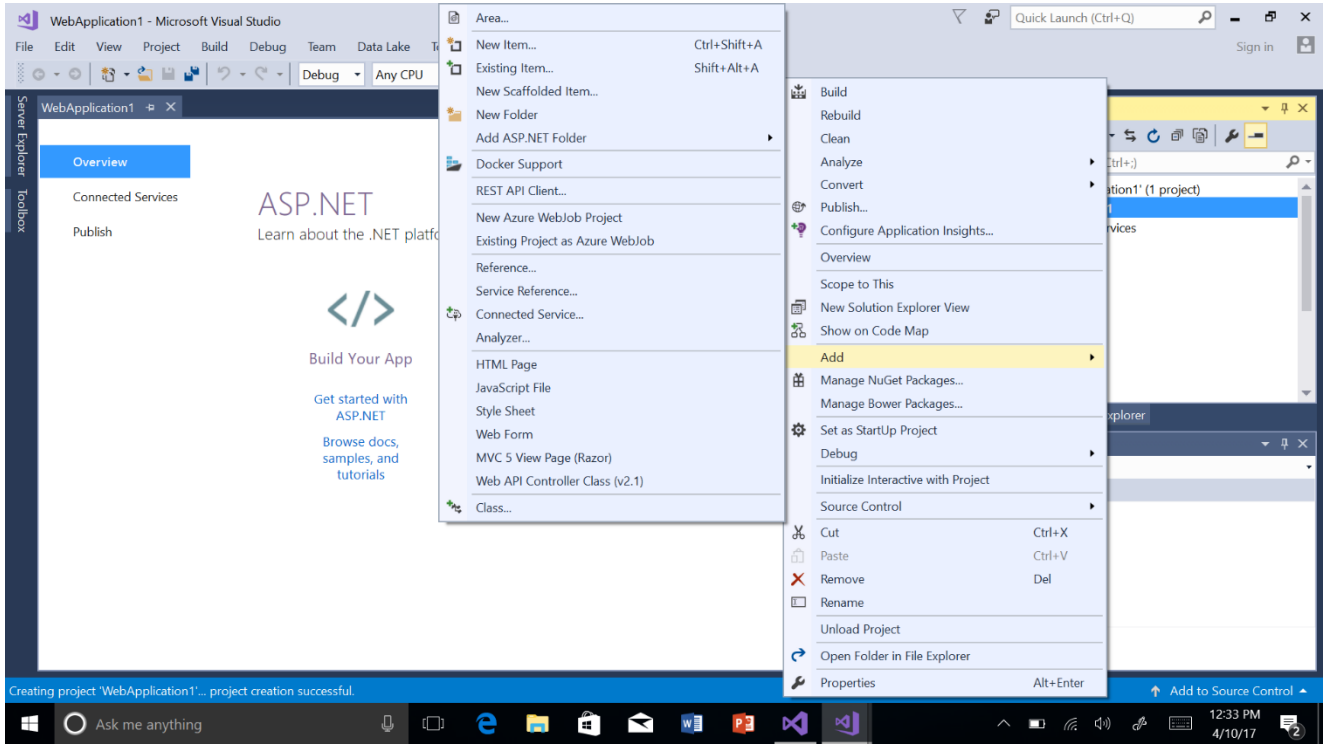
Docker Tools in Visual Studio 2017

- Add Docker support to your project
- Understands ASP.NET vs. .NET Core
- Adds required Docker files to the projects
- Adds required Docker-compose Yaml files



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Docker Files Added

The Docker files added

```
FROM microsoft/aspnetcore:1.1
ARG source
WORKDIR /app
EXPOSE 80
COPY ${source:-obj/Docker/publish} .
ENTRYPOINT ["dotnet", "dotnetcore.dll"]
```

```
FROM microsoft/aspnet
ARG source
WORKDIR /inetpub/wwwroot
COPY ${source:-obj/Docker/publish} .
```

```
FROM microsoft/aspnet
ARG source
WORKDIR /inetpub/wwwroot
COPY ${source:-obj/Docker/publish} .
```

The Dockerfile Debug/release Trick

Pass in argument at build

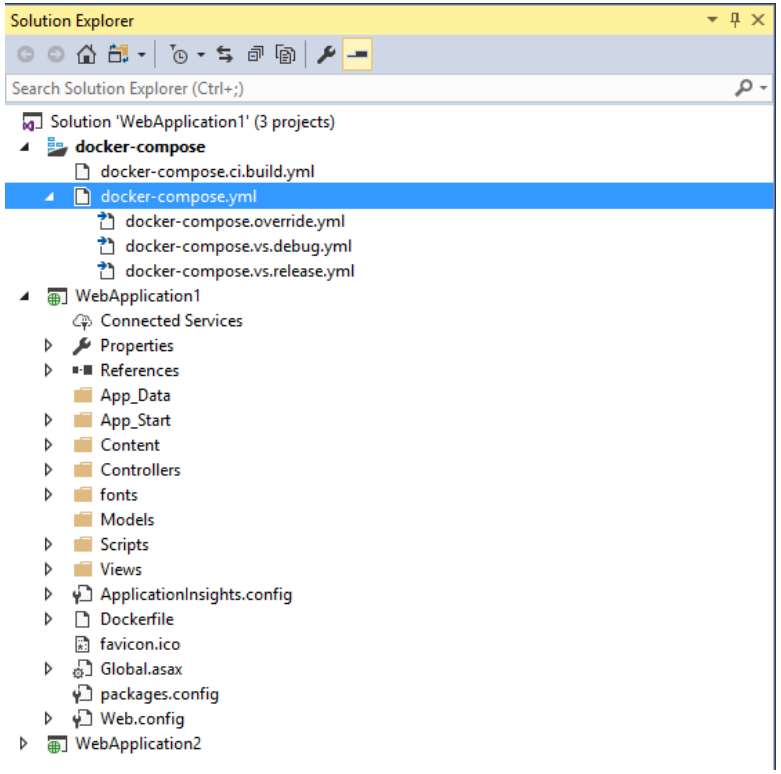
Debug -> obj/docker/empty

Release -> obj/docker/publish

Demo

Building Containers from the Command-line

Yaml Files Added



Used to run container compositions

Build

Run

Are a superset of json

You can pass multiple files on the command-line that get merged

Provide additional run information to build or start the containers

```
services:
  webapplication1:
    image: webapplication1
    build:
      context: .\WebApplication1
      dockerfile: Dockerfile
```

The Yaml File Trick

The docker-compose file defines the services

Defines what to build

{override}

```
services:
  webapplication1:
    ports:
      - "80“
networks:
  default:
    external:
      name: nat
```

The Yaml File Trick

The override file defines the ports and networking

Demo

Building Containers from the Command-line
Using Docker-compose

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{Debug}

```
services:
   webapplication1:
          image: webapplication1:dev
          build:
              args:
                  source: ${DOCKER_BUILD_SOURCE}
          volumes:
                  - .\WebApplication1:C:\inetpub\wwwroot
                  - ~\msvsmon:C:\msvsmon:ro
          labels:
              -
"com.microsoft.visualstudio.targetoperatingsystem=windows"
```

The Yaml File Trick

Source arg dockerfile get's the DOCKER_BUILD_SOURCE value == obj\docker\empty

Volume mapping to c:\inetpub\wwwroot

Volume mapping to local user folder (~) on host to remote debugger

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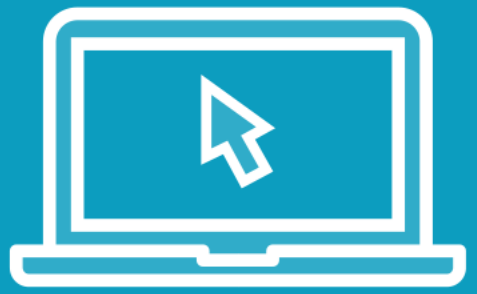
Demo



Show the Volume Maps on the Containers

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{Release}

```
services:
   webapplication1:
           image: webapplication1:dev
           build:
               args:
                   source: ${DOCKER_BUILD_SOURCE}
           volumes:
                   - ~\msvsmon:C:\msvsmon:ro
           labels:
               -
"com.microsoft.visualstudio.targetoperatingsystem=windows"
```

The Yaml File Trick

Source arg dockerfile get's the DOCKER_BUILD_SOURCE value == obj\docker\publish

Volume mapping to local user folder (~) on host to remote debugger

```
services:
  ci-build:
    image: microsoft/aspnetcore-build:1.0-1.1
    volumes:
      - .:/src
    working_dir: /src
    command: /bin/bash -c "dotnet restore ./dotnetcore.sln && dotnet
\
             publish ./dotnetcore.sln -c Release -o
./obj/Docker/publish"
```

The Compose File to Build The Source

Docker-compose.ci.build

Container image used to build the sources

Enables you to switch build environments in a very easy way

Demo

Use the Visual Studio 2017 IDE to Build Containers

Debugging Your Cross-container Solutions with Visual Studio 2017

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Debugging Containers

This uses the remote debugger capabilities of Visual Studio better known under the name msvsmon

Can be found on your local machine [osdisk]:\Users\<username>\msvsmon

Is mapped in the yaml file as volume mount on your container

Demo

Show How to Debug Cross Containers

Summary

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