Publish a Visual Studio Project Using Docker

Daniel Dotson

2/8/2023

Below is a step by step guide to creating and publishing a new project Visual Studio Project. This tutorial will be using C#, although the process should be similar for other languages. I have not tested other IDE's. Although, if they have the ability to work with a docker project, I would imagine that they would provide a way to publish a docker image.

If you are not too familiar with Docker, here are some definitions:

1. Image: A docker image holds all the dependencies, libraries, and code required to run an application independent of its operating system.
2. Container: A container is an instance of a docker image.
3. Dockerfile: A Dockerfile (named like that) defines the layers, and contains the commands required to assemble a container.
4. .dockerignore: This file, similar to a .gitignore, tells docker which system files and directories to ignore when building a docker image.

1. Creating a Docker Enabled Web App.

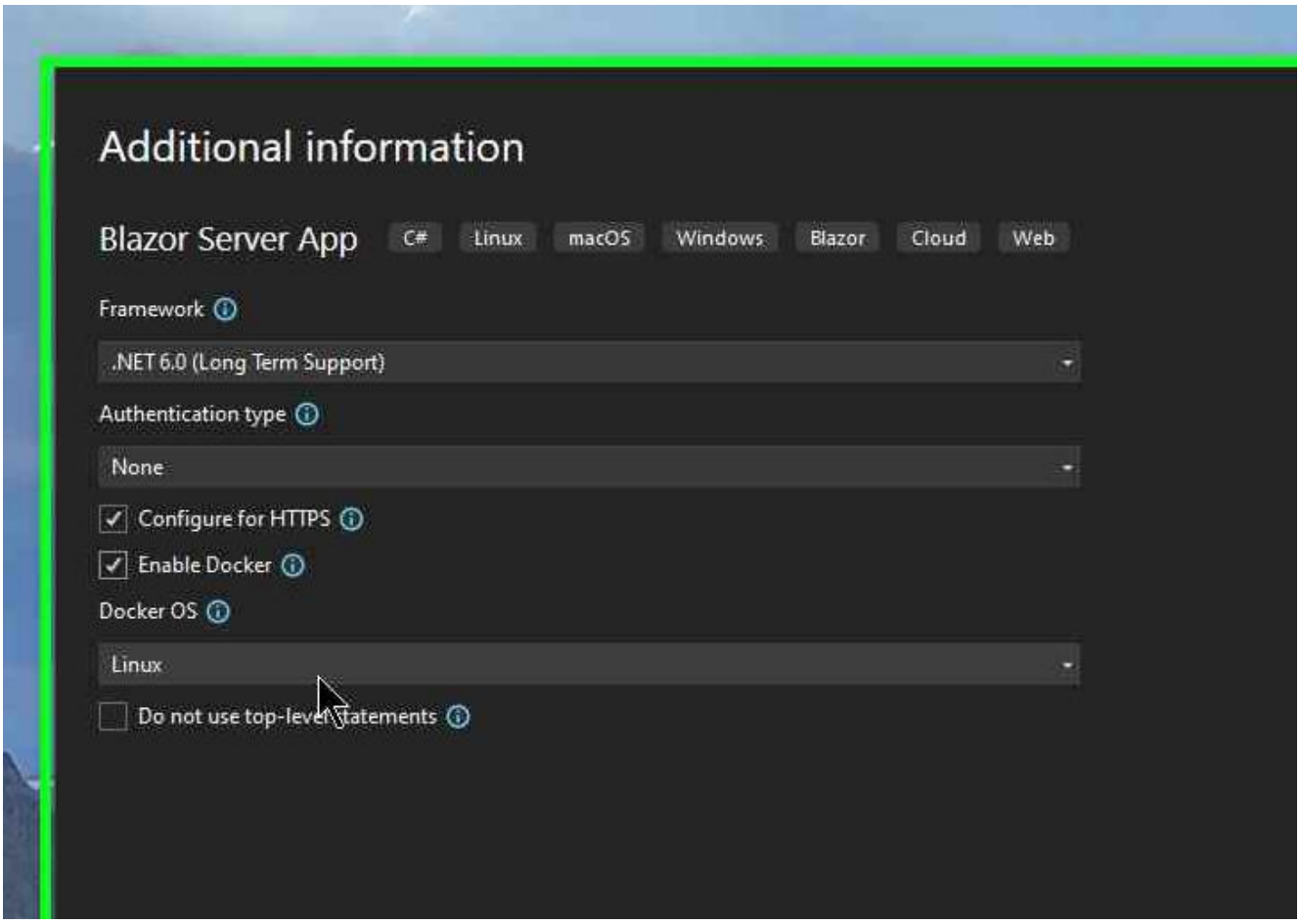
I will be creating an example Blazor App named "DockerTutorial" to show how to do this.

Step 1: Click on "Create a New Project" in "Microsoft Visual Studio."

Step 2: Select Blazor Server App. Click next.

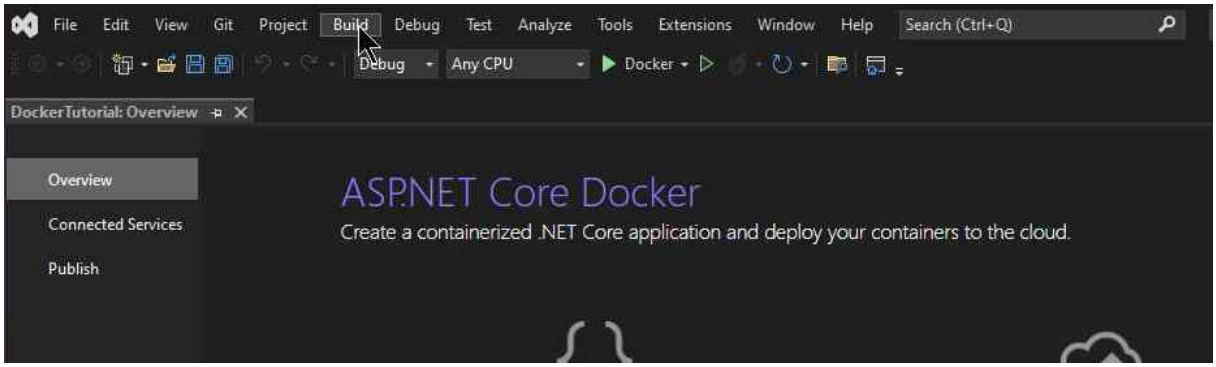
Step 3: Give your Project a name and accept the defaults for the solution and solution name. Click next.

Step 4: Check enable docker. Select Docker OS to Linux unless you have a windows server configured to run docker.

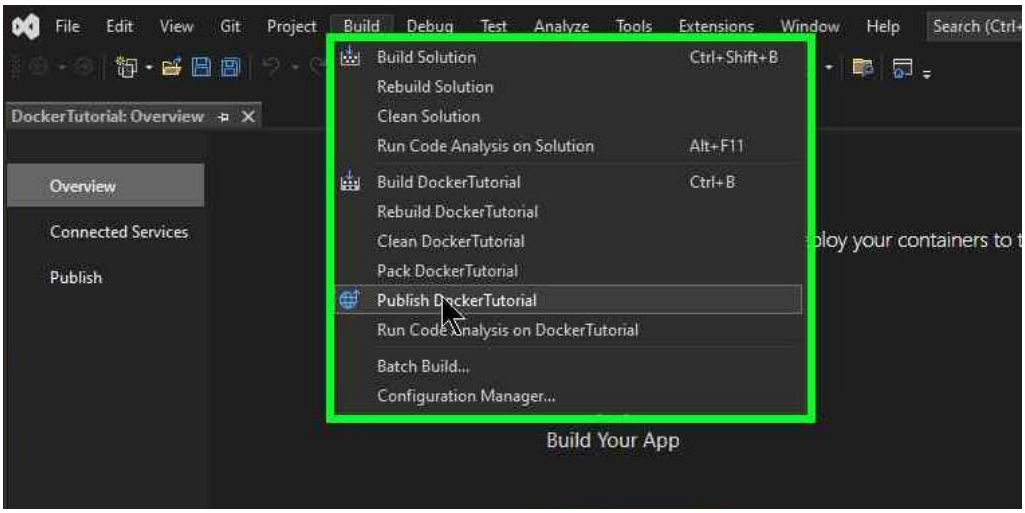


Step 5: Click "Create" in "Microsoft Visual Studio." Wait till the project is loaded.

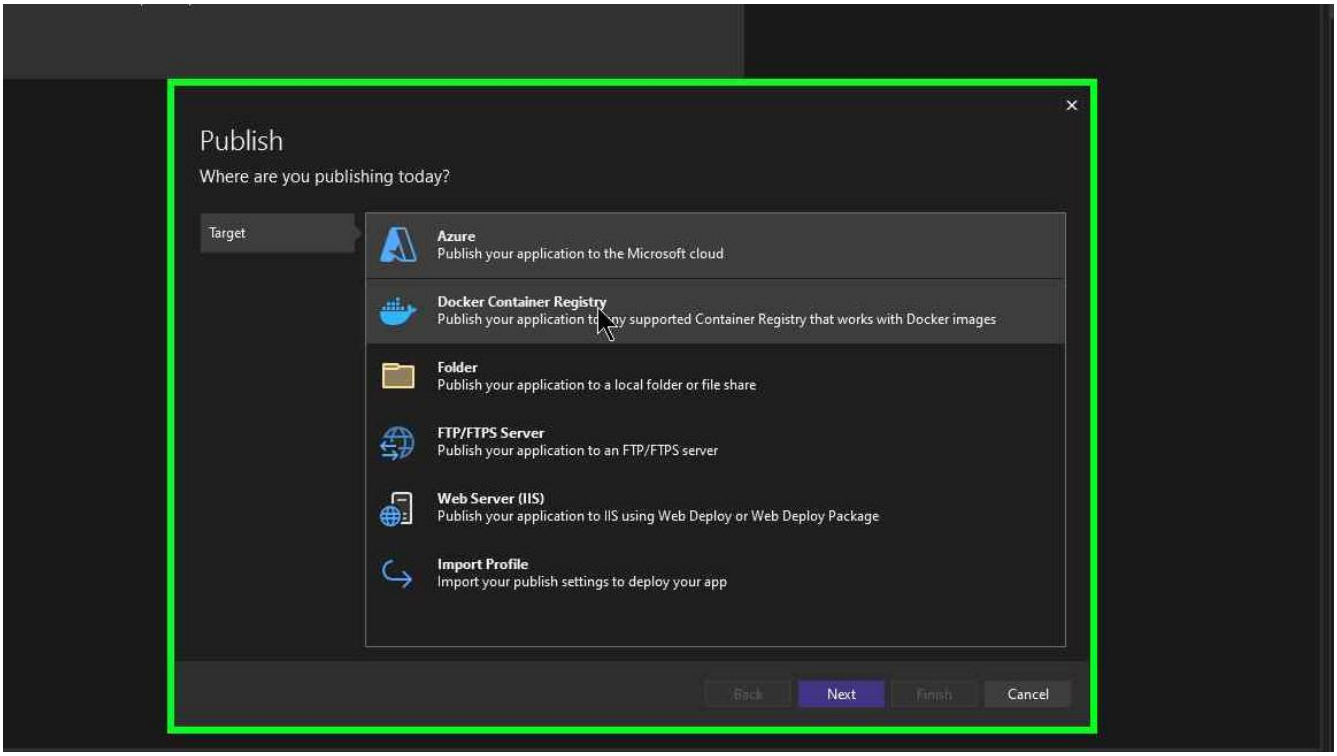
Step 6: Click “Build” on the top ribbon.



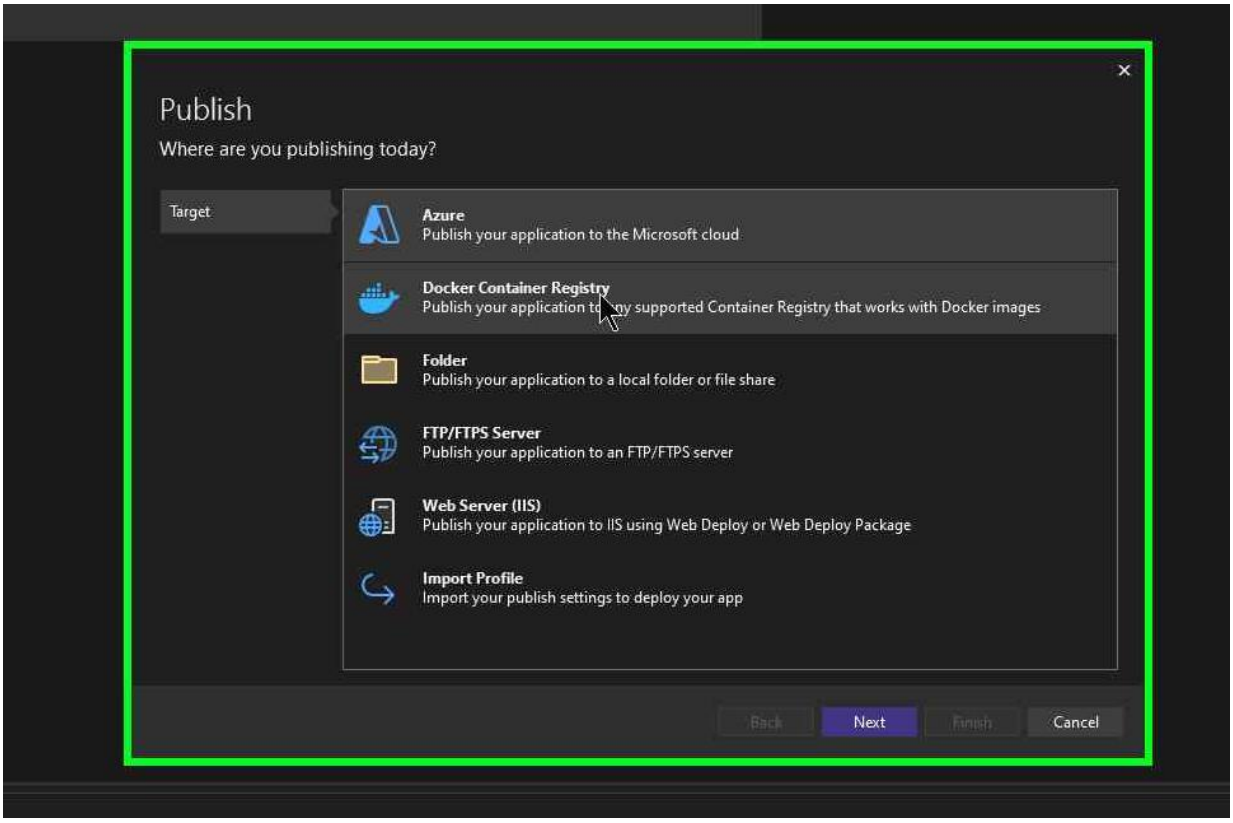
Step 7: Click on "Publish DockerTutorial” (Note “DockerTutorial” is the name of your project)"



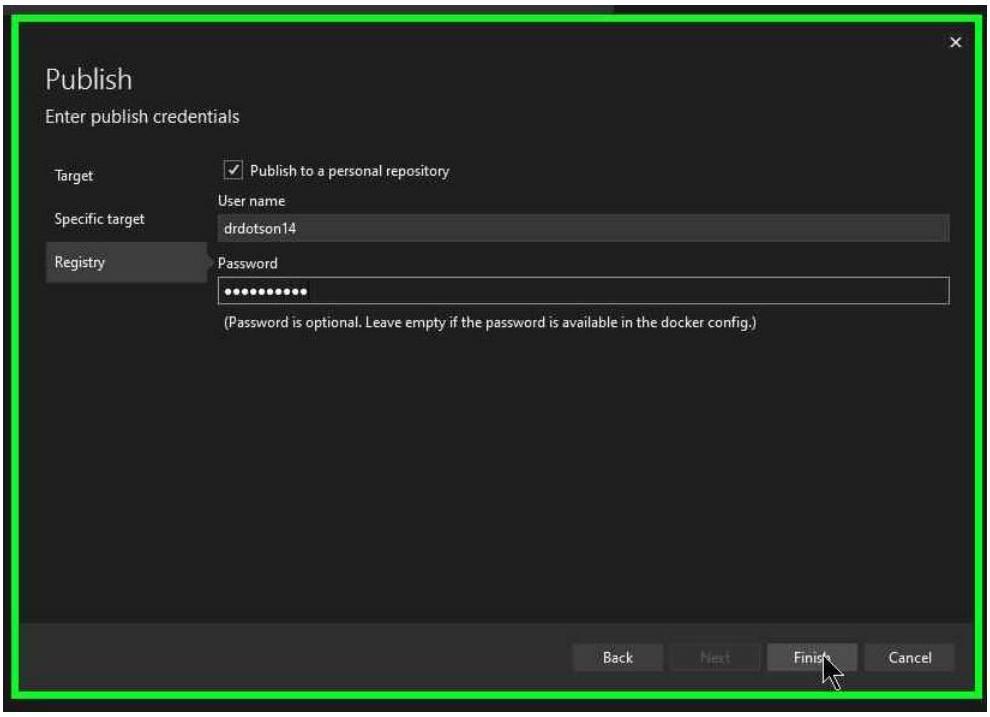
Step 8: Click "Docker Container Registry" in the "Publish Window." Click Next.



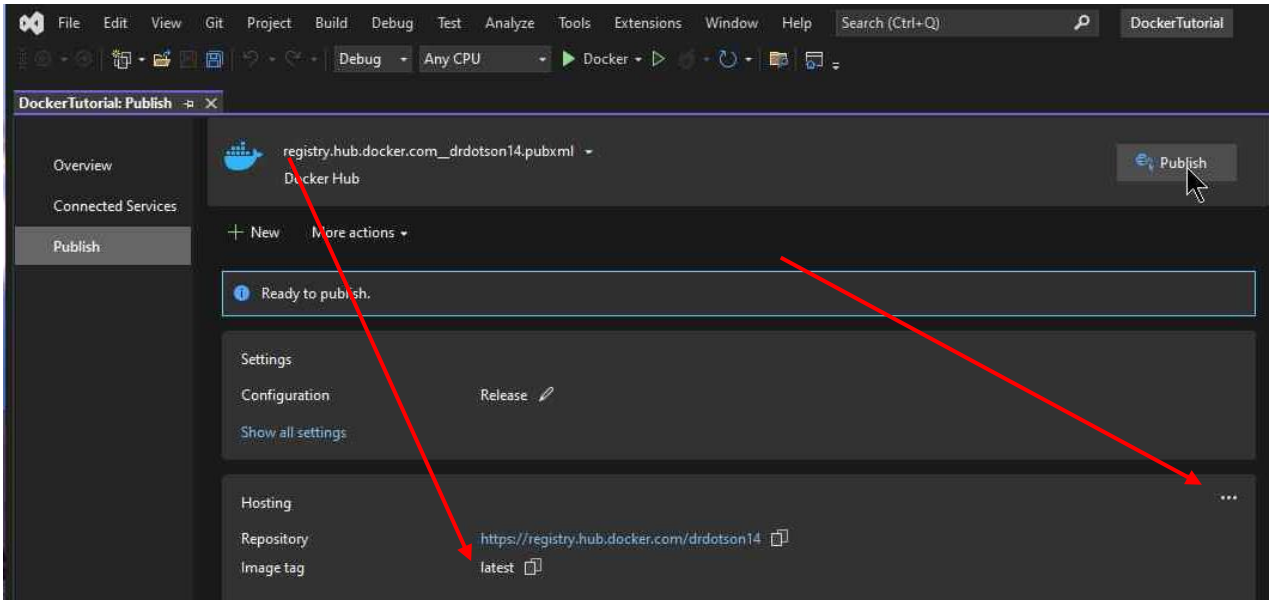
Step 9: Select "Docker Container Registry." To complete the next step, you will need to have credentials at https://hub.docker.com/ Create a free account at this link.



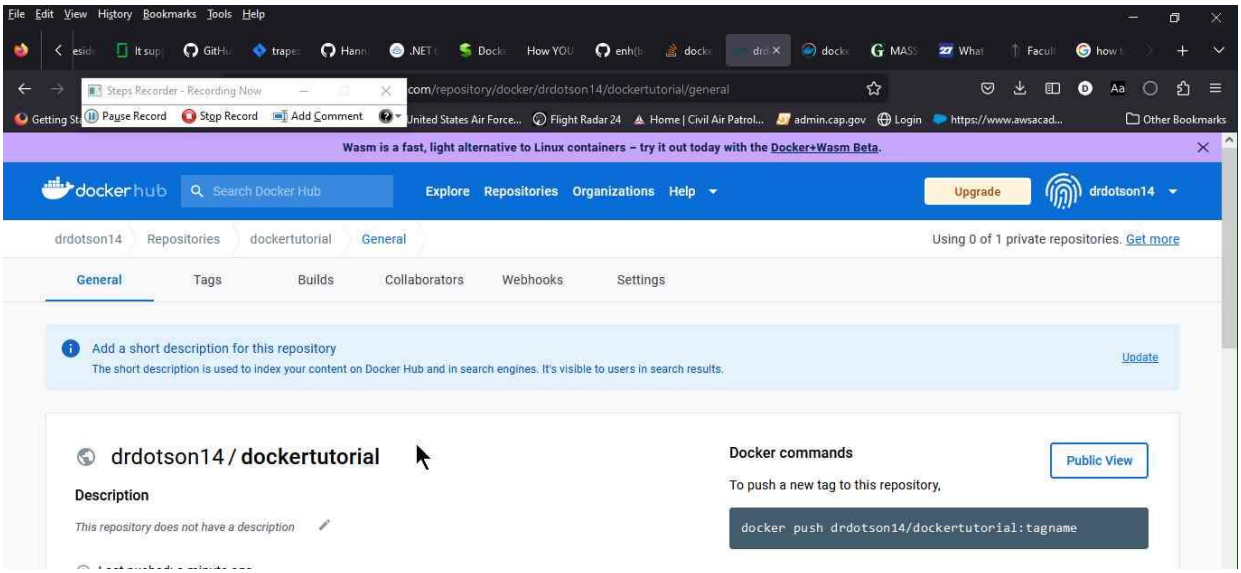
Step 10: Enter your Docker Hub credentials and click Finish.



Step 11: Click “Publish”. Note that you can edit the Image tag by clicking the three dots in the “Hosting” box. The default tag is “latest.” If you would like to save multiple versions of the image in the repository, edit the tag so that the image won’t be overwritten.



Step 12: View the image in your docker repository. If you go to your Docker Hub account, you should be able to see the new image that has been uploaded to the hub.



2. Installing Docker image on Linux server.

In a Linux Virtual Machine or server, make sure to install docker if you have not already. If you are working on a fresh install of Linux, run the following commands to install the docker images. If you don't know what Linux version to use, I suggest Ubuntu 18.04 or 20.04.

sudo apt install docker.io	This command installs the docker software.
sudo usermod -aG docker <yourusername>	This will add your user account to the docker group so you don't have to run every docker command with "Sudo."
docker pull drdotson14/blazordockertest:latest	This will pull the image from my repository with the tag of latest. You can specify any tag that exists in the repository. If none is specified, latest is assumed.
docker images	Show the downloaded images
docker run --rm -d -p8080:80 drdotson14/blazordockertest:latest	1. This will run the docker image in (-d) detached mode. 2. The "--rm" tag will remove the container when the image is removed. 3. The -p8080:80 option maps the docker port 80 to port 8080 on the host. 4. :latest this will run the docker image tag