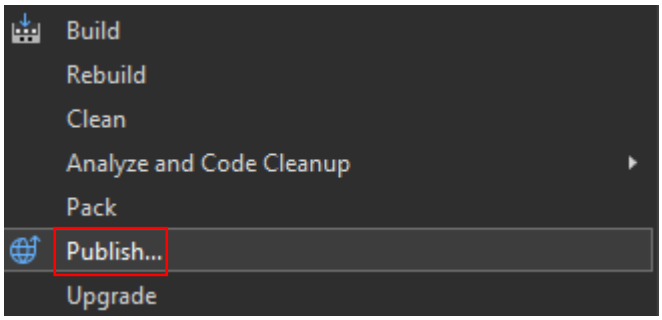
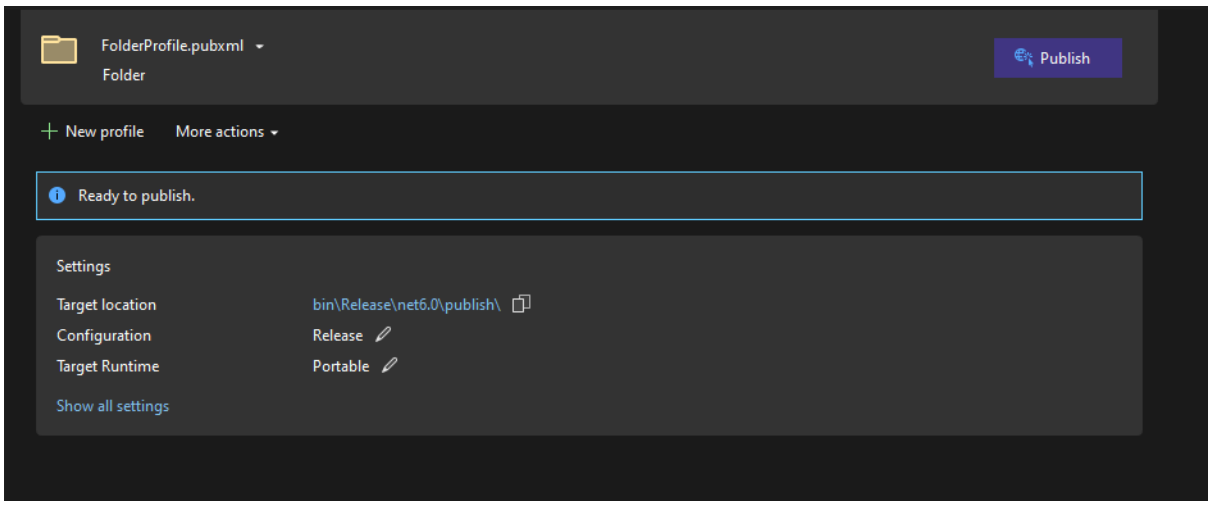
😊 Deploying Docker

1. For this lab you are required to down two files from GitHub, first is Docker file and other one is Send Messages zip file.
2. After downloading them go to AWS Console and start building the setup.
3. First you need to navigate to EC2 and create an instance based on Ubuntu OS.
4. And you also have a SQS queue ready in order to send and receive messages.
5. Once you have both in place, then you need to extract the Send messages zip file and then open it in visual studio.
6. In visual studio from the top right corner, you need to right click on your project, then click on publish.

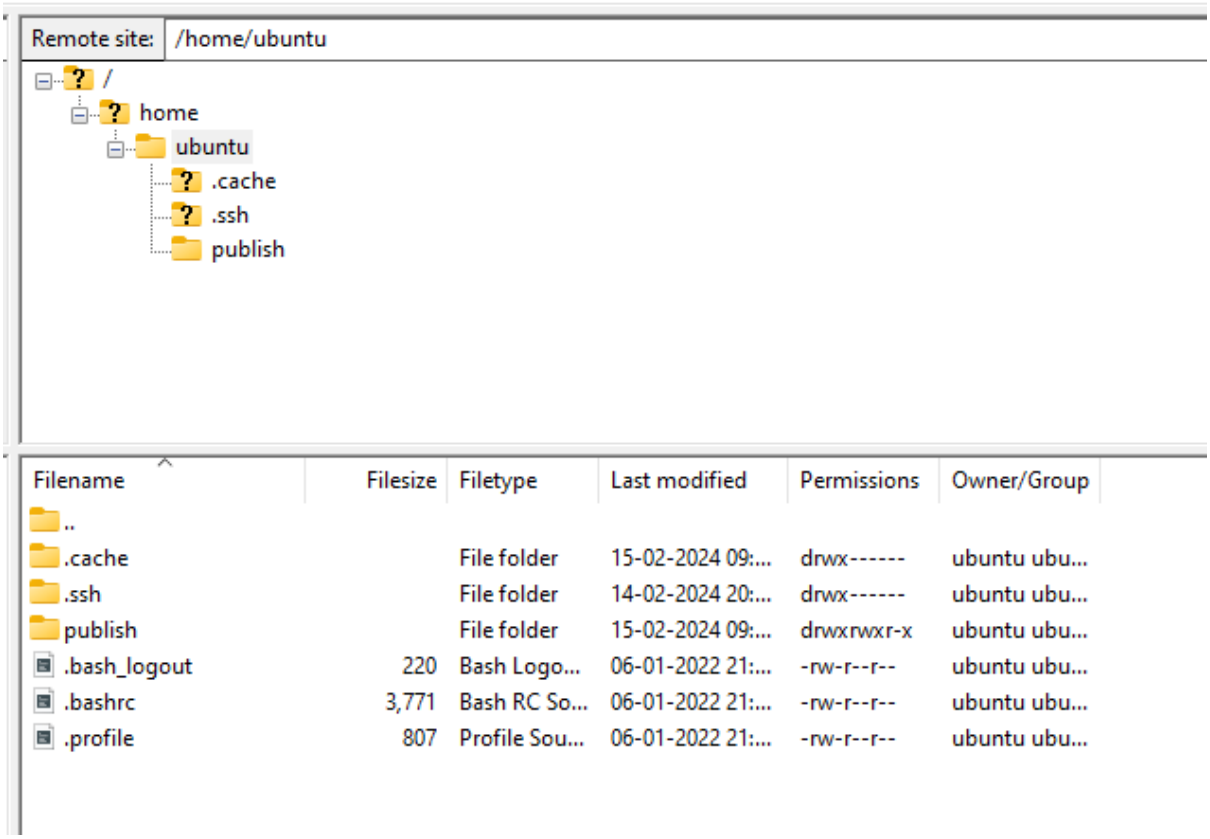


7. Then it will ask you where you want to store it just click on folder then you need to select the folder.
8. After that you will be on this screen shown below, here just need to click on publish it will create something known as publish profile.
9. What this does is it's going to make a runnable copy of your program that can be run on a machine that has .net in place.



10. Now you need to connect to your instance either with FileZilla or WinSCP and then you need to transfer files from your local machine to your instance.
11. In FileZilla or WinSCP whatever you are using, I am using FileZilla, so in there you need to go to the location where your Publish folder is stored.

12. You need to drag this publish folder and drop it into the instance which will be copied directly to your instance.



13. Once this is done SSH to your instance, and there you need to install Docker on your machine. You can visit to this website mentioned below, this will take you to the documentation page to install docker.
14. Use this particular website because the steps to install docker keeps changing as they are pushing updates time to time.

    https://docs.docker.com/engine/install/ubuntu/

15. Now use this documentation page to install docker on your Instance. So, below are the commands which I used to install docker. You should cross check these commands on the docker documentation page they keep changing those.

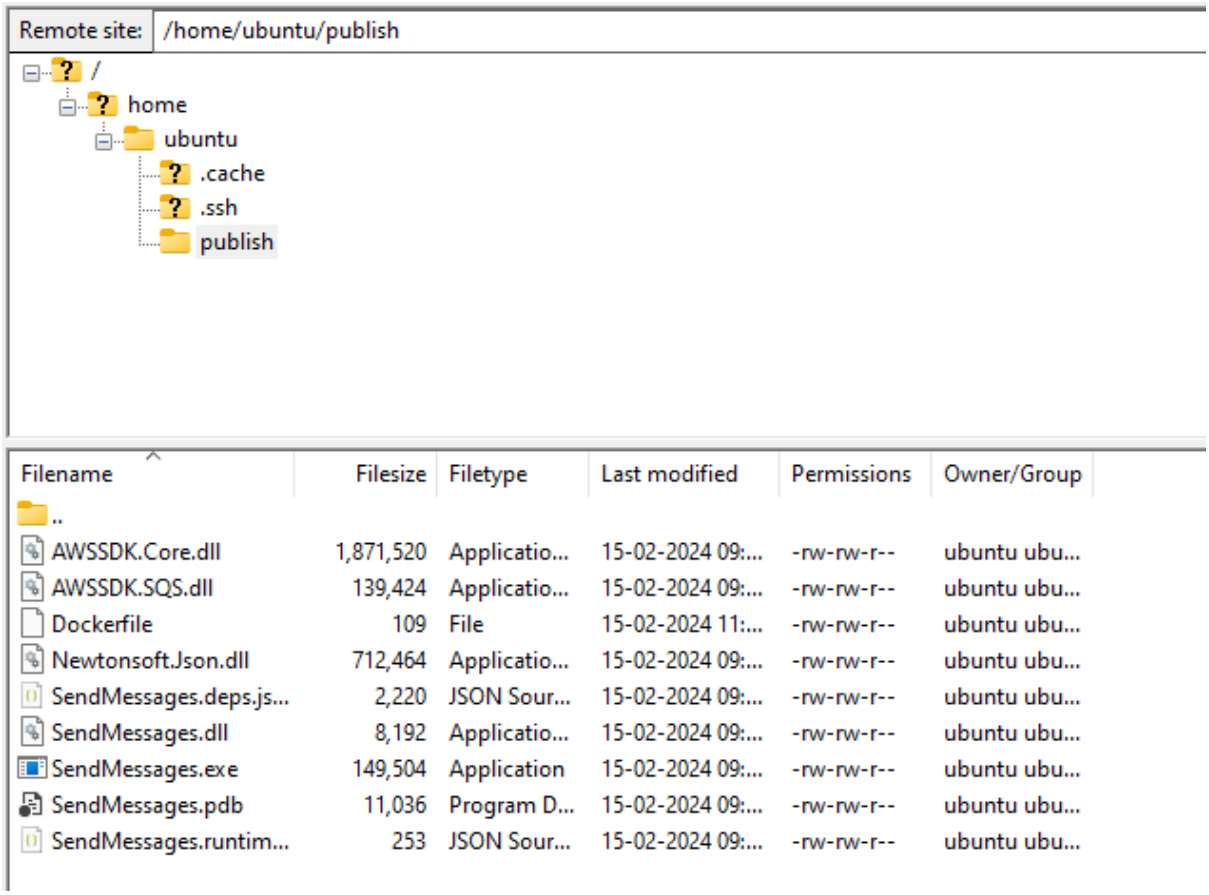
    # Add Docker's official GPG key:
    sudo apt-get update
    sudo apt-get install ca-certificates curl
    sudo install -m 0755 -d /etc/apt/keyrings
    sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o /etc/apt/keyrings/docker.asc
    sudo chmod a+r /etc/apt/keyrings/docker.asc

    # Add the repository to Apt sources:

**echo **
**"deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc] https://download.docker.com/linux/ubuntu **
**$(. /etc/os-release && echo "$VERSION_CODENAME") stable" | **
sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
sudo apt-get update

#Installing Docker
sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin

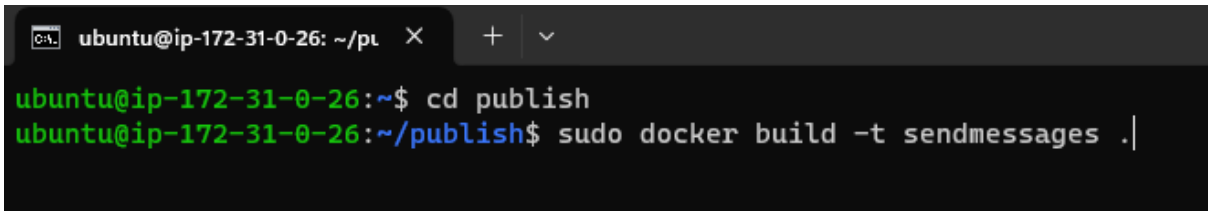
16. Once you docker is installed. Similarly, we have to create something known as a Docker image. That Docker image should have everything that would be required to run an application along with the binary, you know the binary files for the application. Everything should be bundled as this image and then we create or run basically a container out of this image. You will have your application running within the container.
17. Now in the start I told you to download a File named Dockerfile. Now you need to copy that file in the publish folder with in the instance.



18. And then we're going to run some commands to go ahead and create that Docker image.

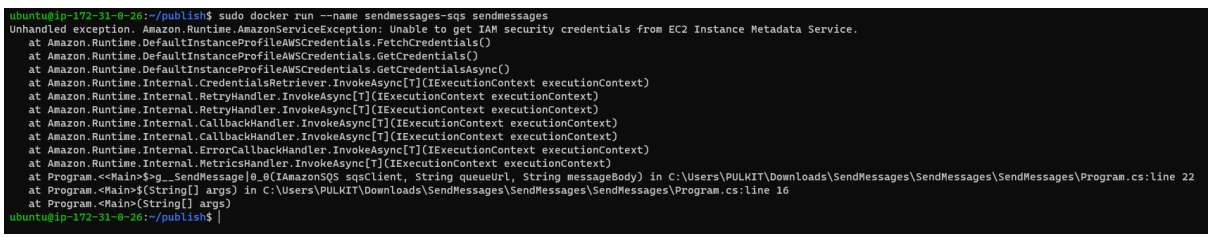
19. Inside your instance first go to the publish folder then run the below command to build the image out of that docker file.
20. The Dot indicates that the Docker file, along with all of the contents for that image, is available in the current publish folder.

    sudo docker build -t sendmessages .

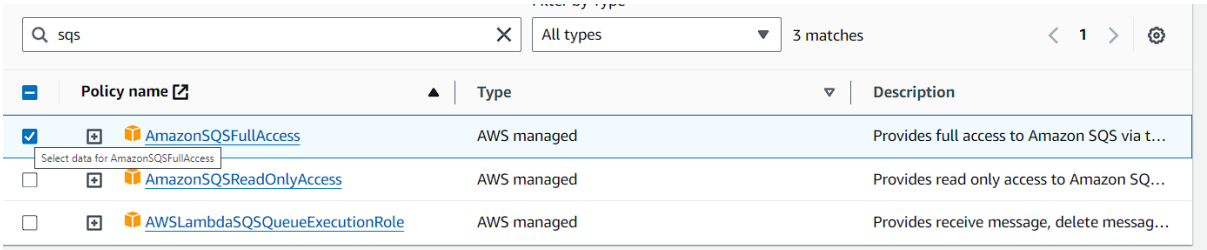


21. Out of this image now you can run a container.
22. Now if you will run this command, you will face an error because the EC2 instance don't have the required permission.

    sudo docker run --name sendmessages-sqs sendmessages

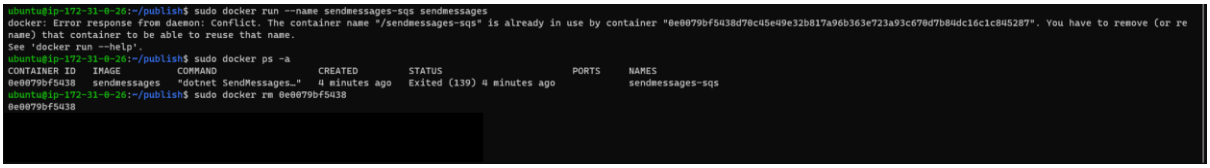


23. Now you have to go to IAM roles and create a role for EC2 instance. Add this permission to your role.
24. Then you need to attach this role with your EC2 instance.

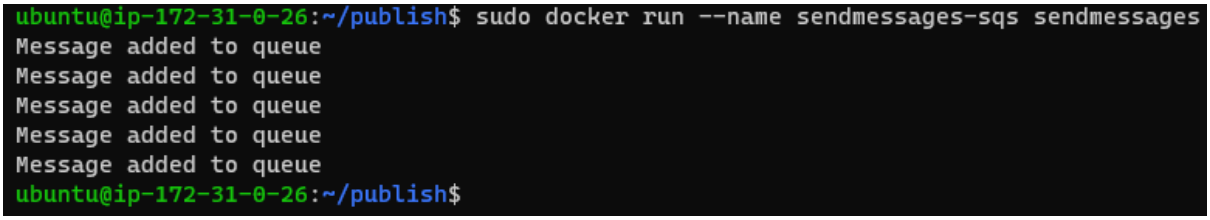


25. Once you have attached your role with EC2 then rerun the command.
26. But you will face an error and it will say that the container name is already in use.
27. For that you will need to remove the container ID only.

    sudo docker ps -a
    sudo docker rm CONATINER ID



28. Once the container ID is removed now you need to run the docker command to send messages.



29. Then you need to come to SQS queue and click on start poll.
30. You will see the pending messages there which have been send through the container.