Managed Cloud Services

When you don’t want to run it yourself

Managed Docker Repository

Elastic Container Service Repository (ECS Repository)

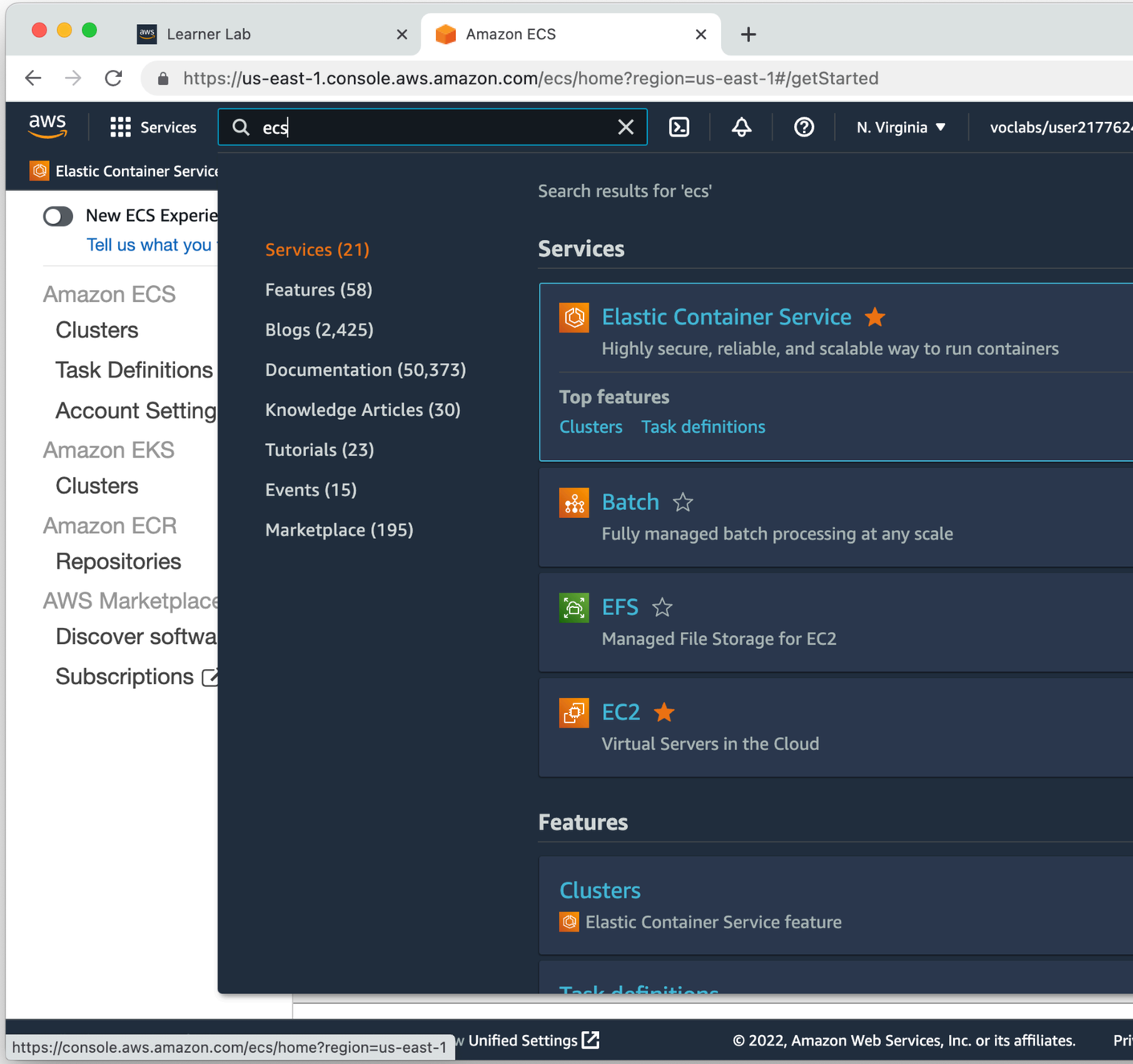
ECS Repository

Store our Docker Images in the Cloud

- What if we want to store our built docker image somewhere other than our laptop?
- What if we don’t want our image to be “public” on hub.docker.com?
- AWS has a managed Docker Image Repository: ECS Repository

ECS Repository

- Get into your AWS account
- Search for “ECS”



ECS Repository

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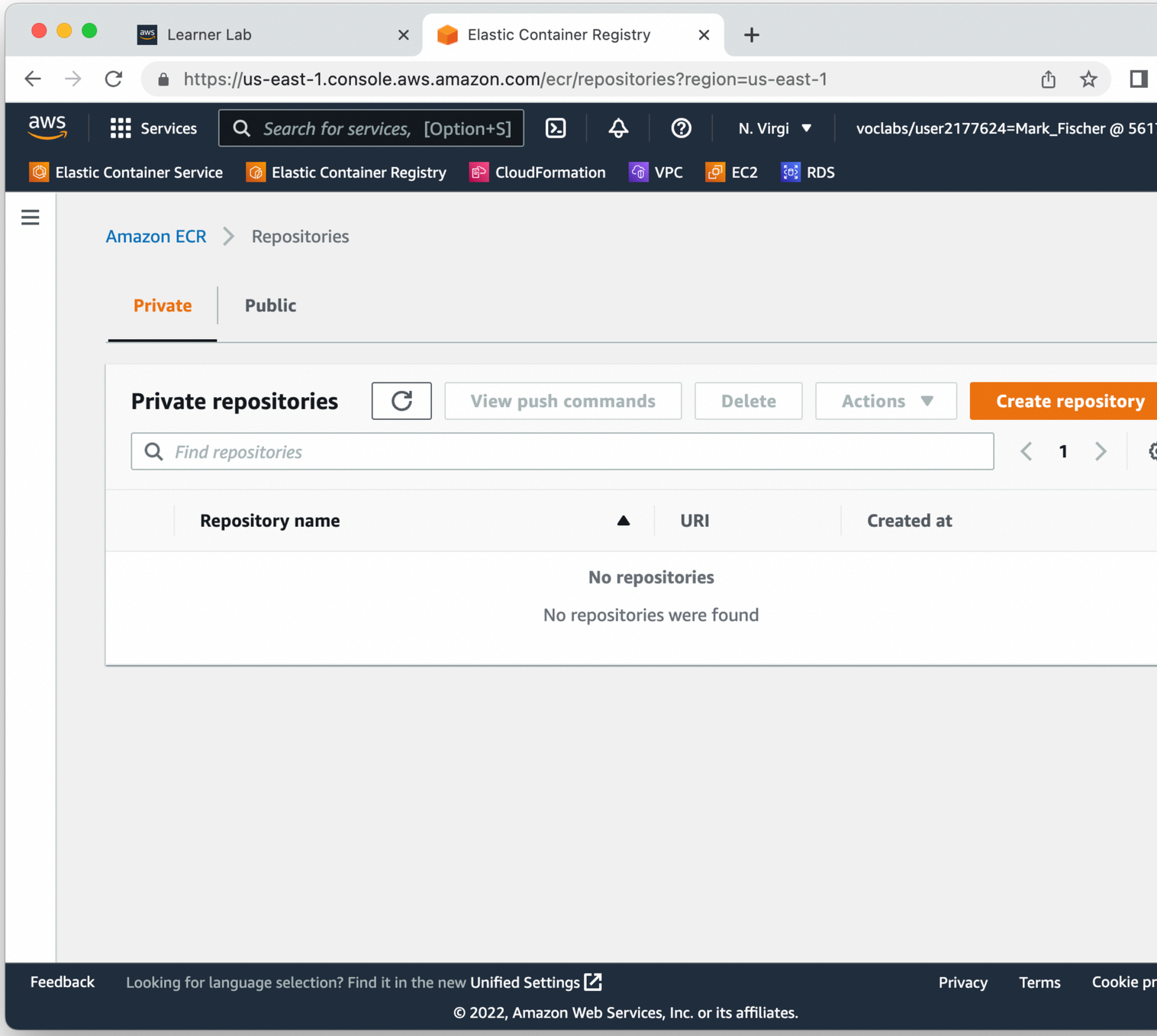
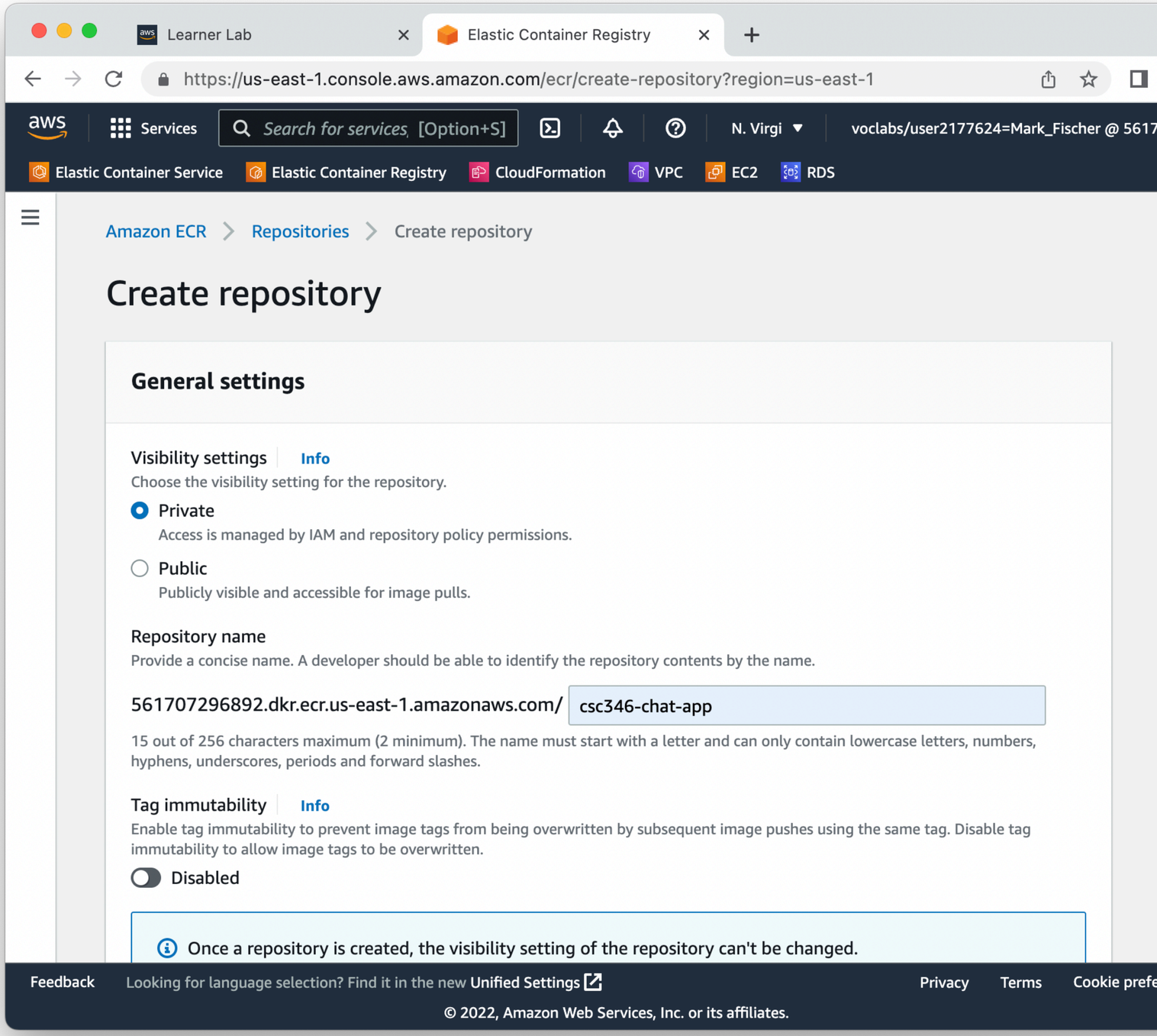


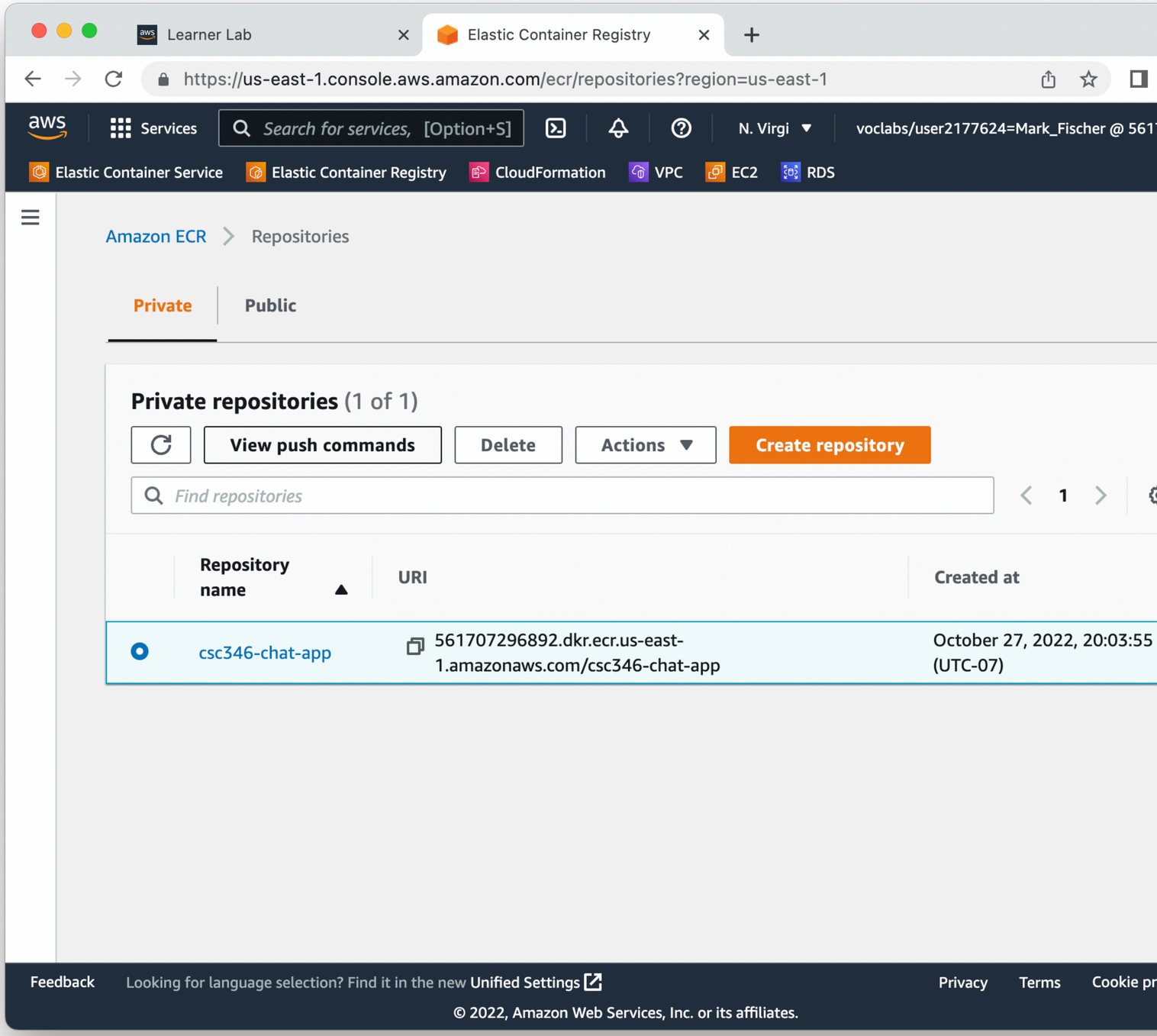
ECS Repository

- Create a private repository



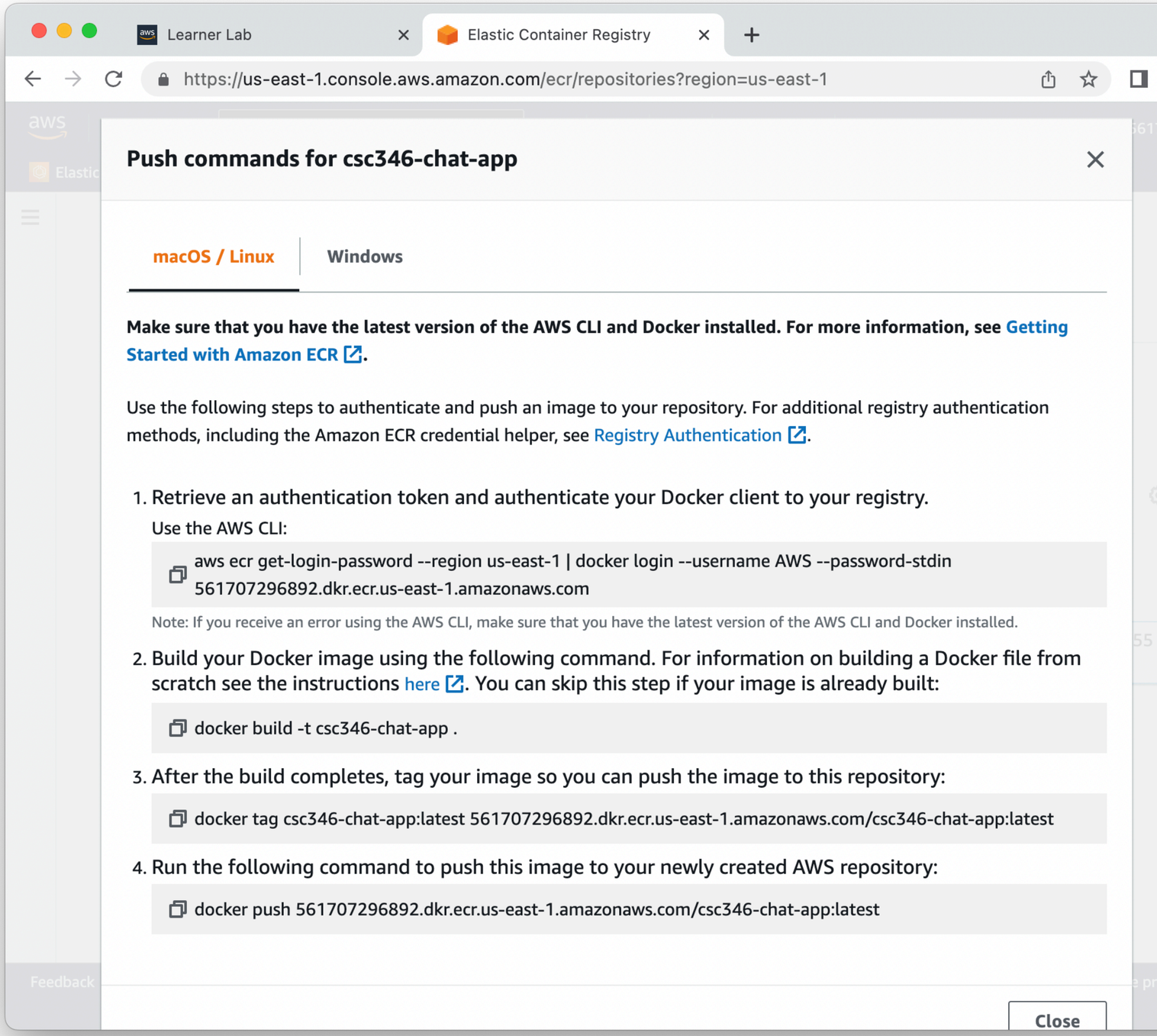
ECS Repository

- Create a private repository
- Now we can push docker images from our laptop to this repository
- From there, we can pull them down to an EC2 instance, or to Elastic Container Service to run



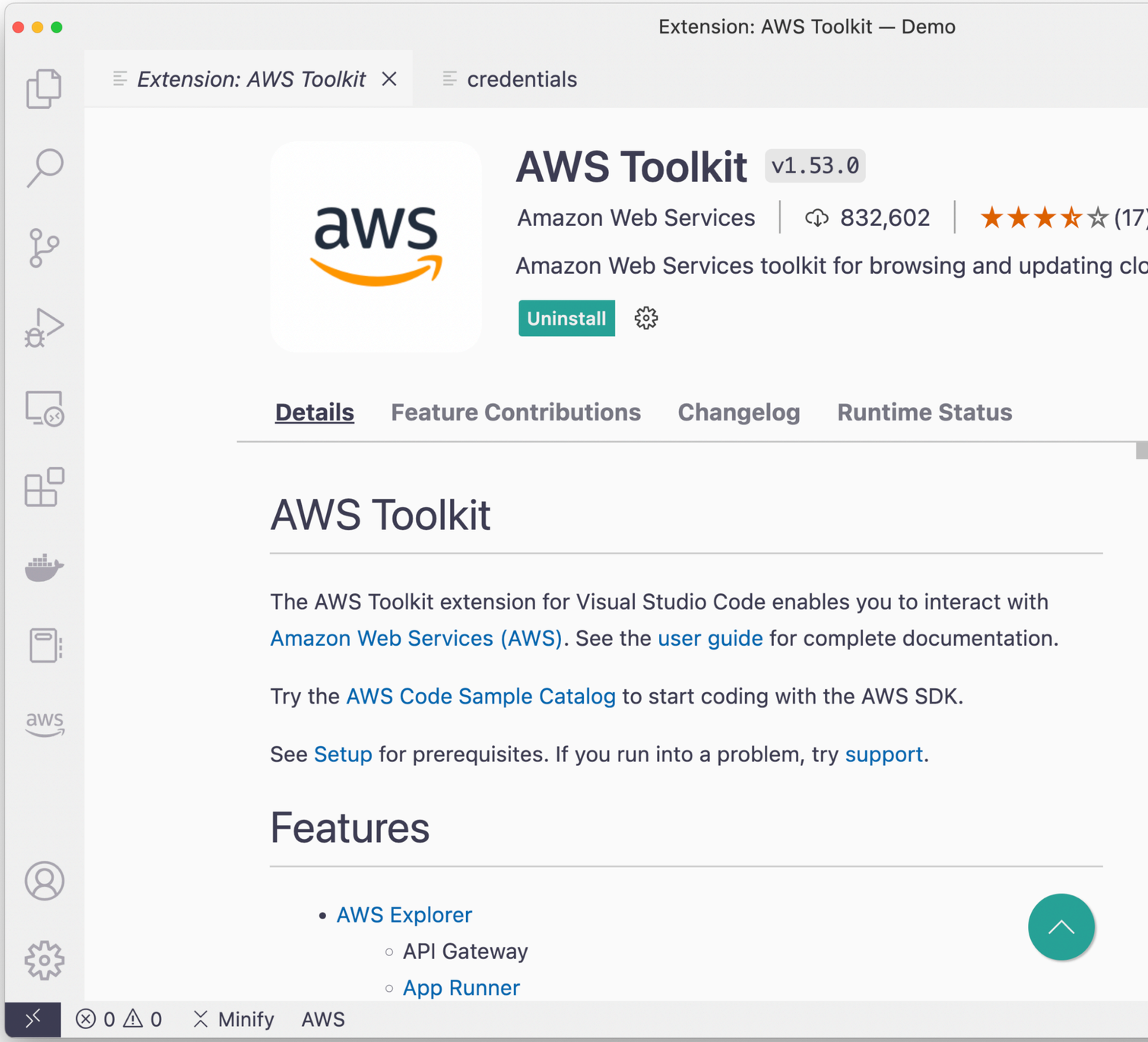
ECS Repository

- Create a private repository
- Now we can push docker images from our laptop to this repository
- From there, we can pull them down to an EC2 instance, or to Elastic Container Service to run
- View the push commands



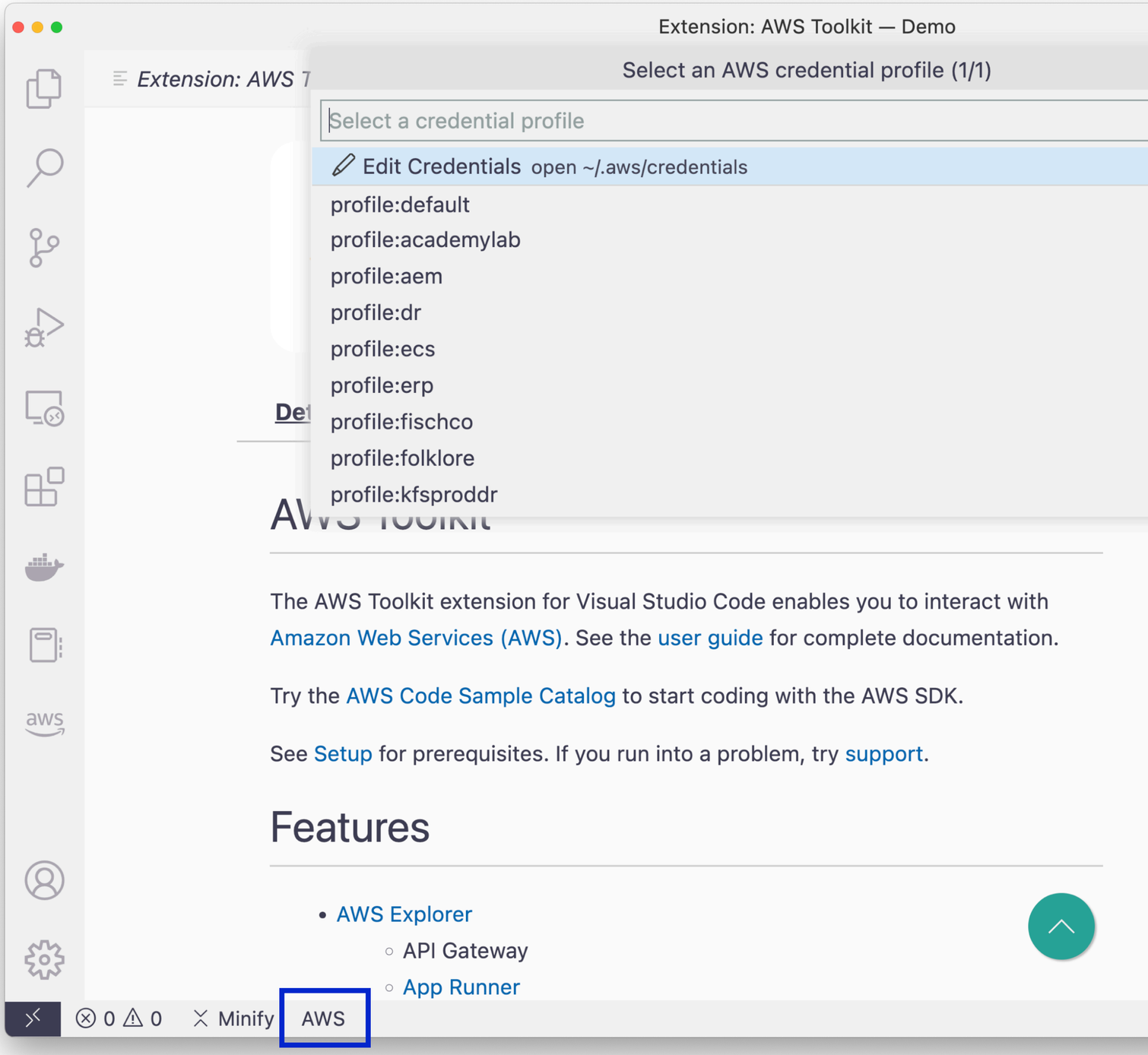
ECS Repository

- There’s a really great “AWS Toolkit” extension for VS Code that Amazon supports



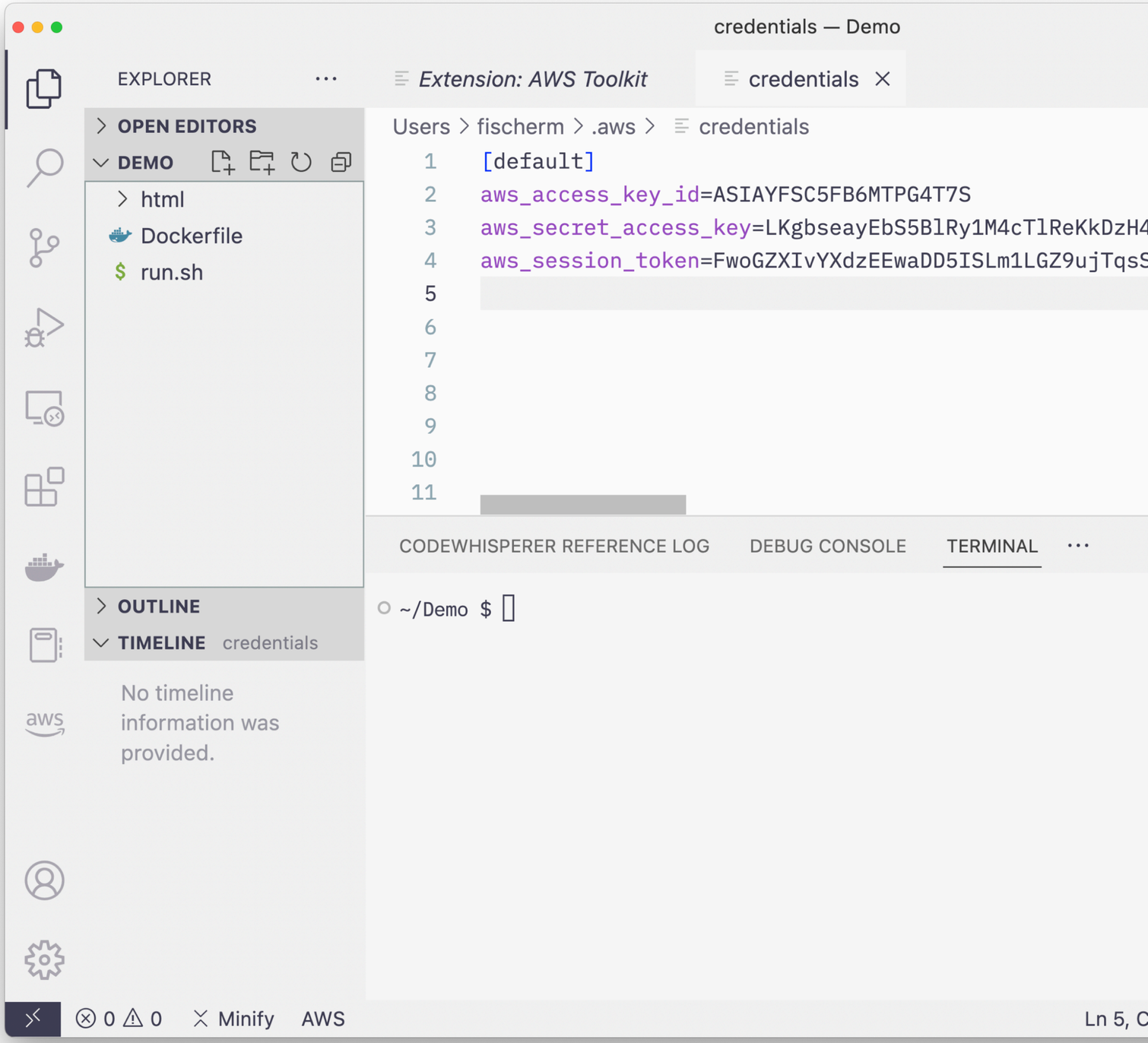
ECS Repository

- There's a really great "AWS Toolkit" extension for VS Code that Amazon supports
- Clicking on the "AWS" in the window footer will bring up the AWS commands
- Easily access your credentials file



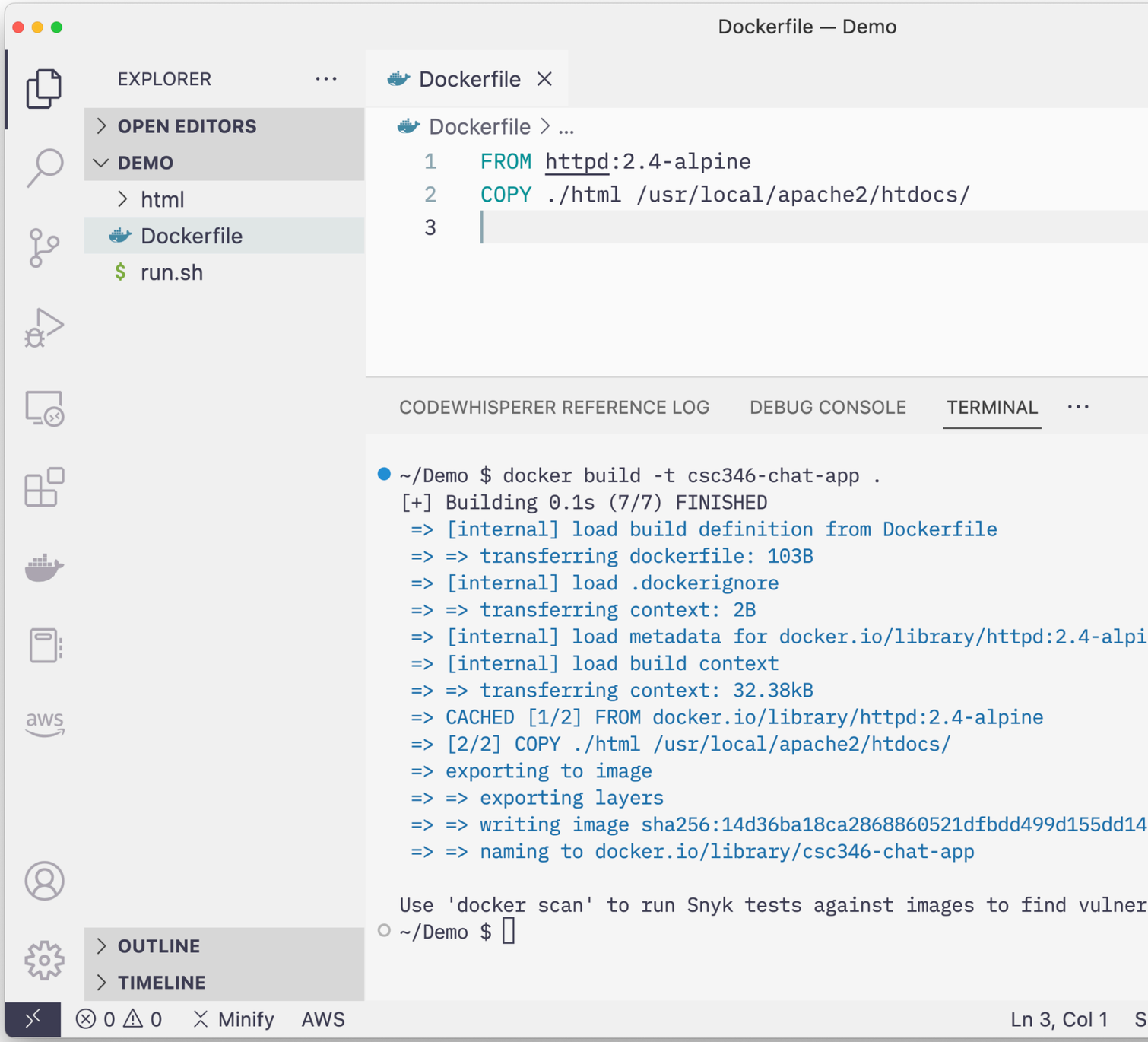
ECS Repository

- In order to push images to ECR, you need to have current AWS IAM credentials
- Copy them from the AWS Academy site and update your credentials file



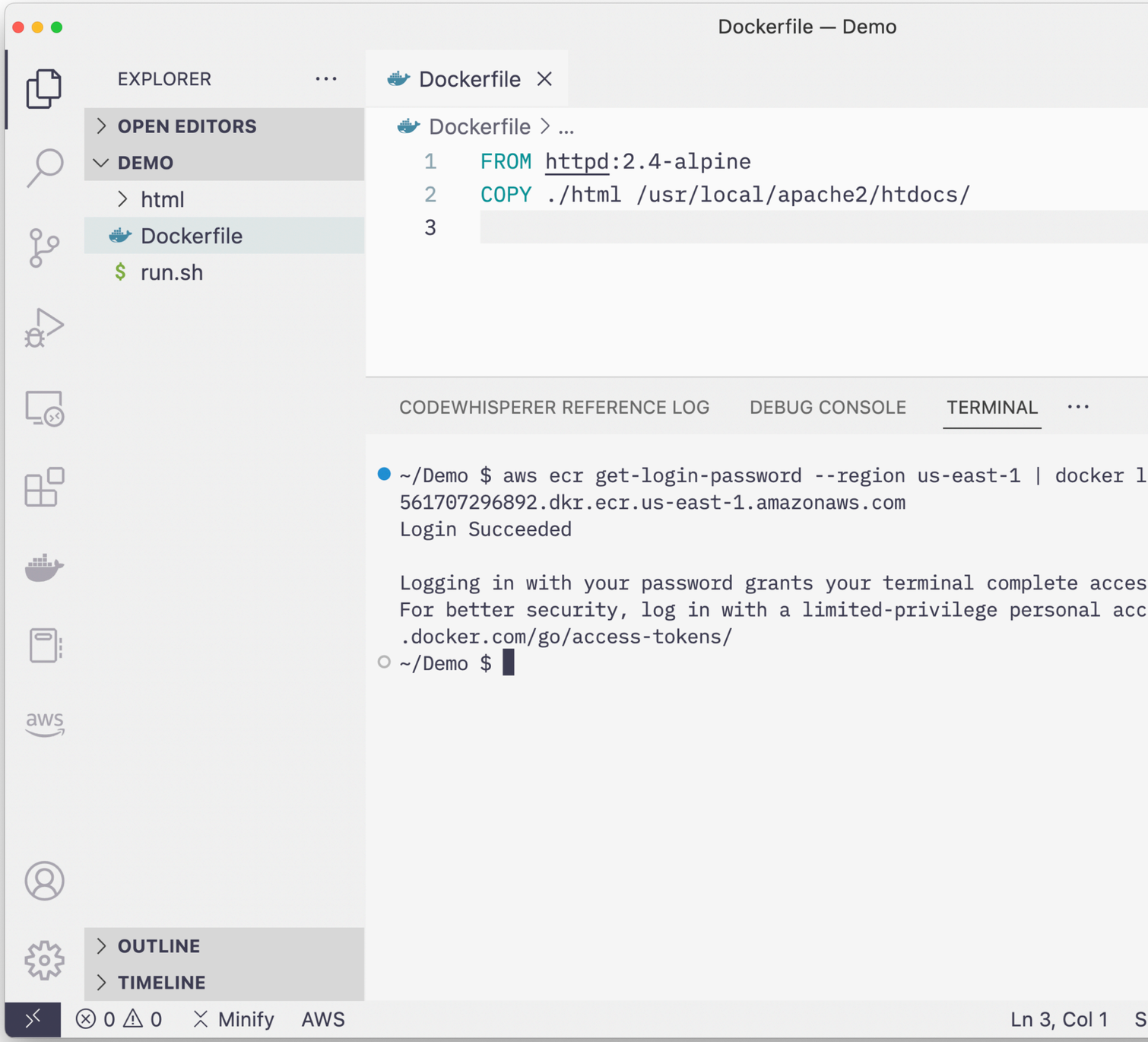
ECS Repository

- Build your image



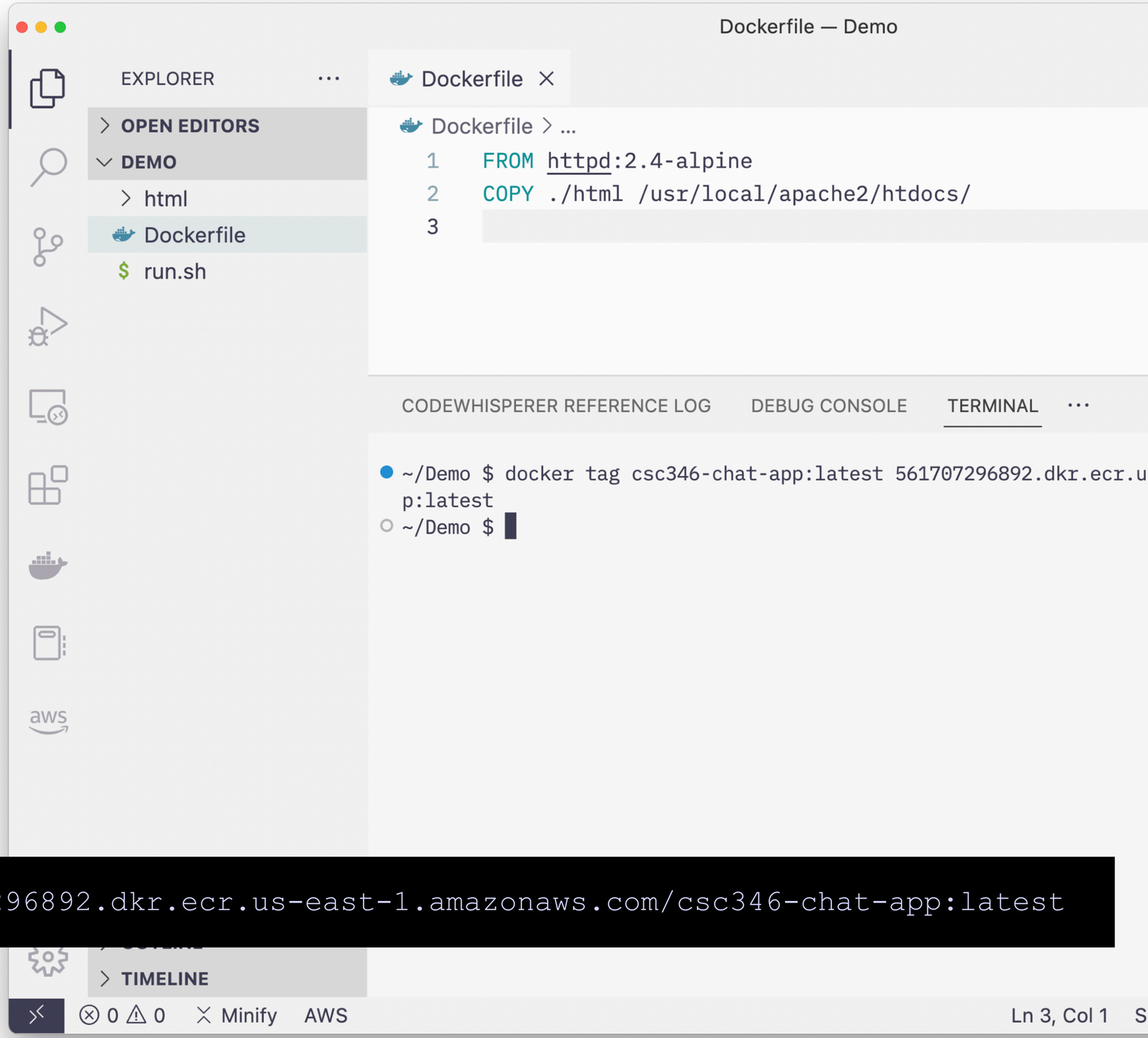
ECS Repository

- Build your image
- Login to ECR
-



ECS Repository

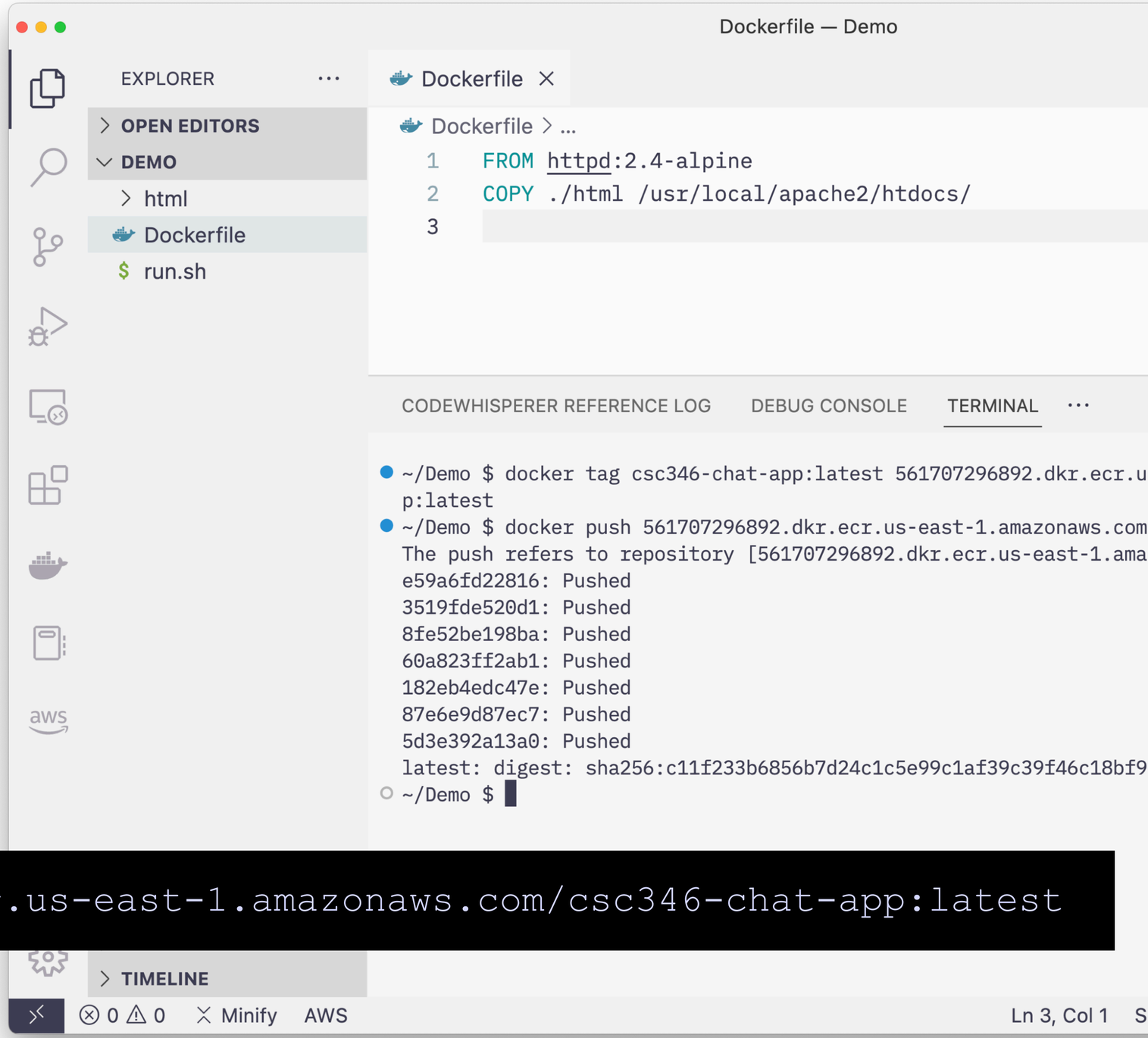
- Build your image
- Login to ECR
- Tag your local image with the ECR host name that matches your repository
  - This is what tells the `docker push` command where to send your image




```
docker tag csc346-chat-app:latest 561707296892.dkr.ecr.us-east-1.amazonaws.com/csc346-chat-app:latest
```

ECS Repository

- Build your image
- Login to ECR
- Tag your local image with the ECR host name that matches your repository
- Push your image up to ECR




```
docker push 561707296892.dkr.ecr.us-east-1.amazonaws.com/csc346-chat-app:latest
```

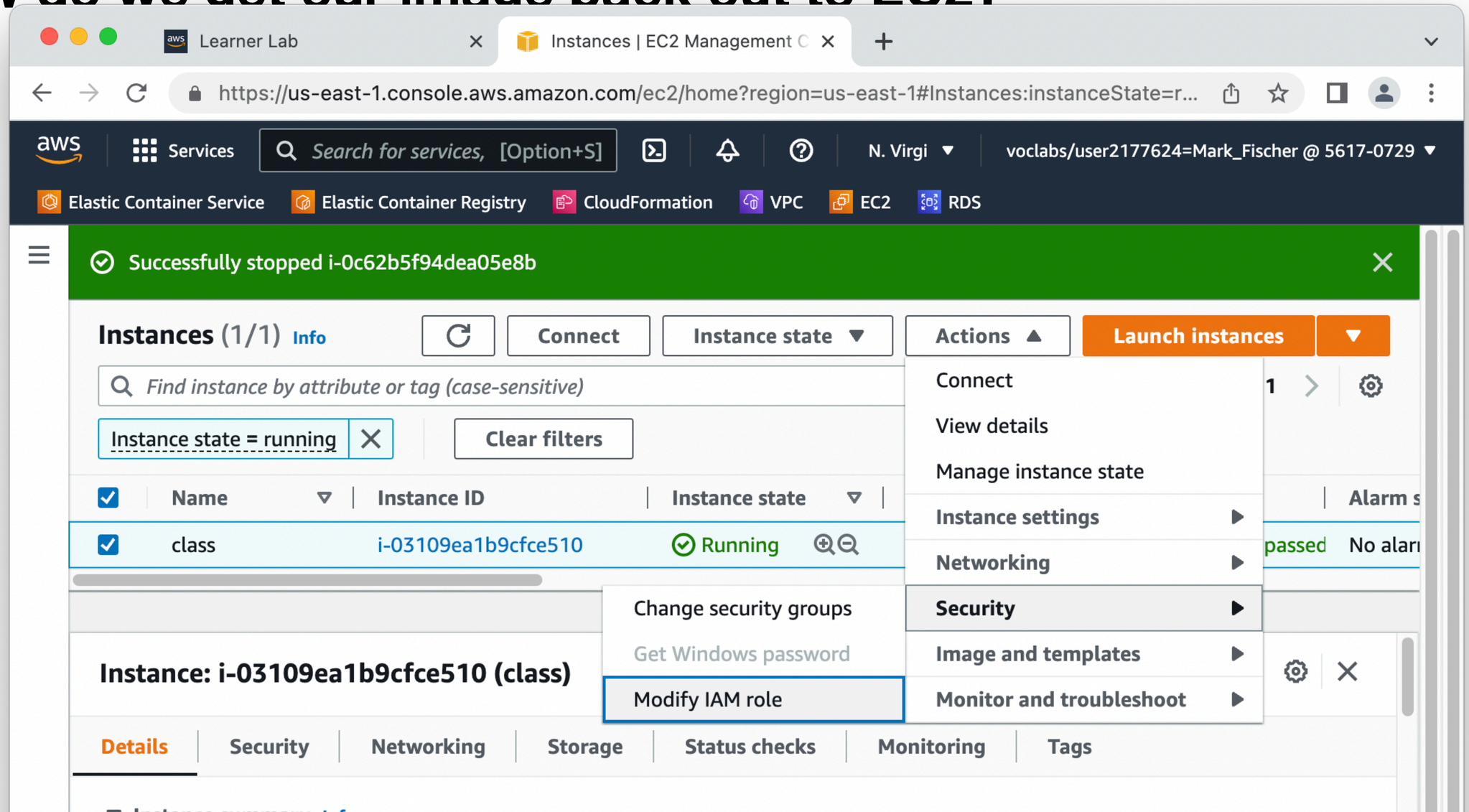
ECS Repository

How do we get our image back out to EC2?

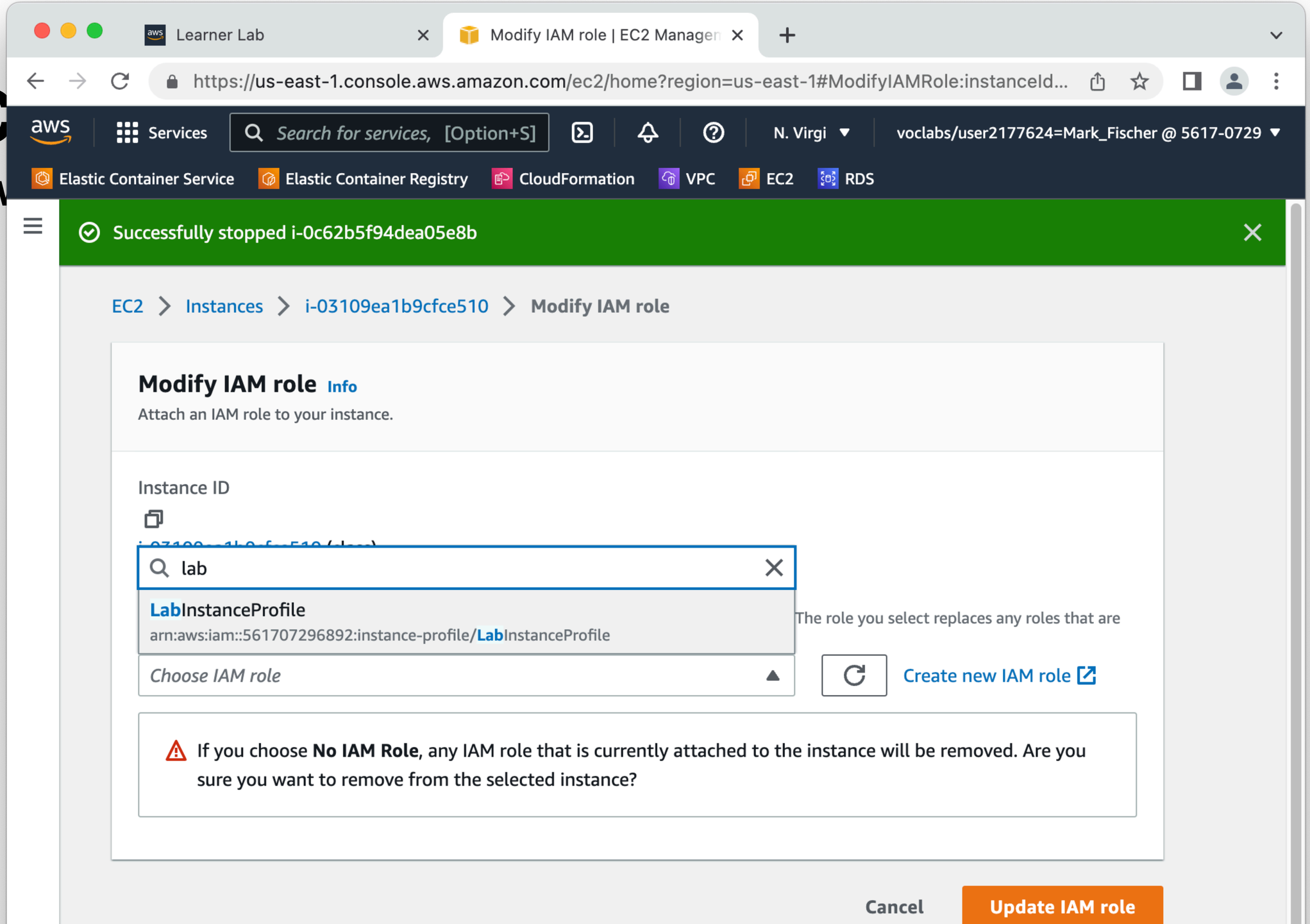
- We still need permissions on our EC2 instance to pull an image back down
- We could copy IAM credentials to our EC2 host just like we do for our laptop
- However within AWS you can leverage IAM Roles
- A role defines a set of permissions that an actor can take on resources
  - We can attach an Role Profile to our instance

ECS Repository

How do we get our image back out to EC2?

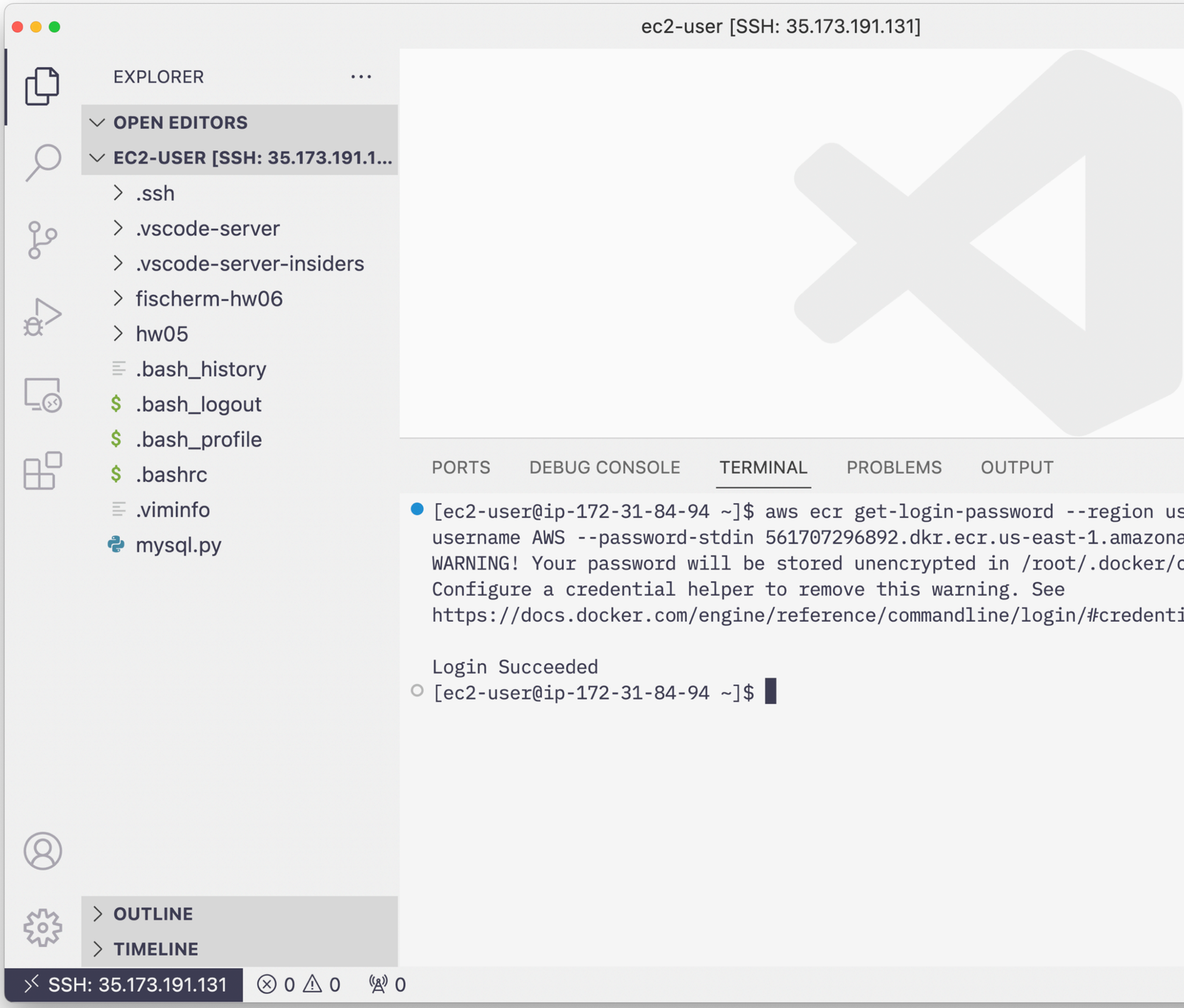


EC
How

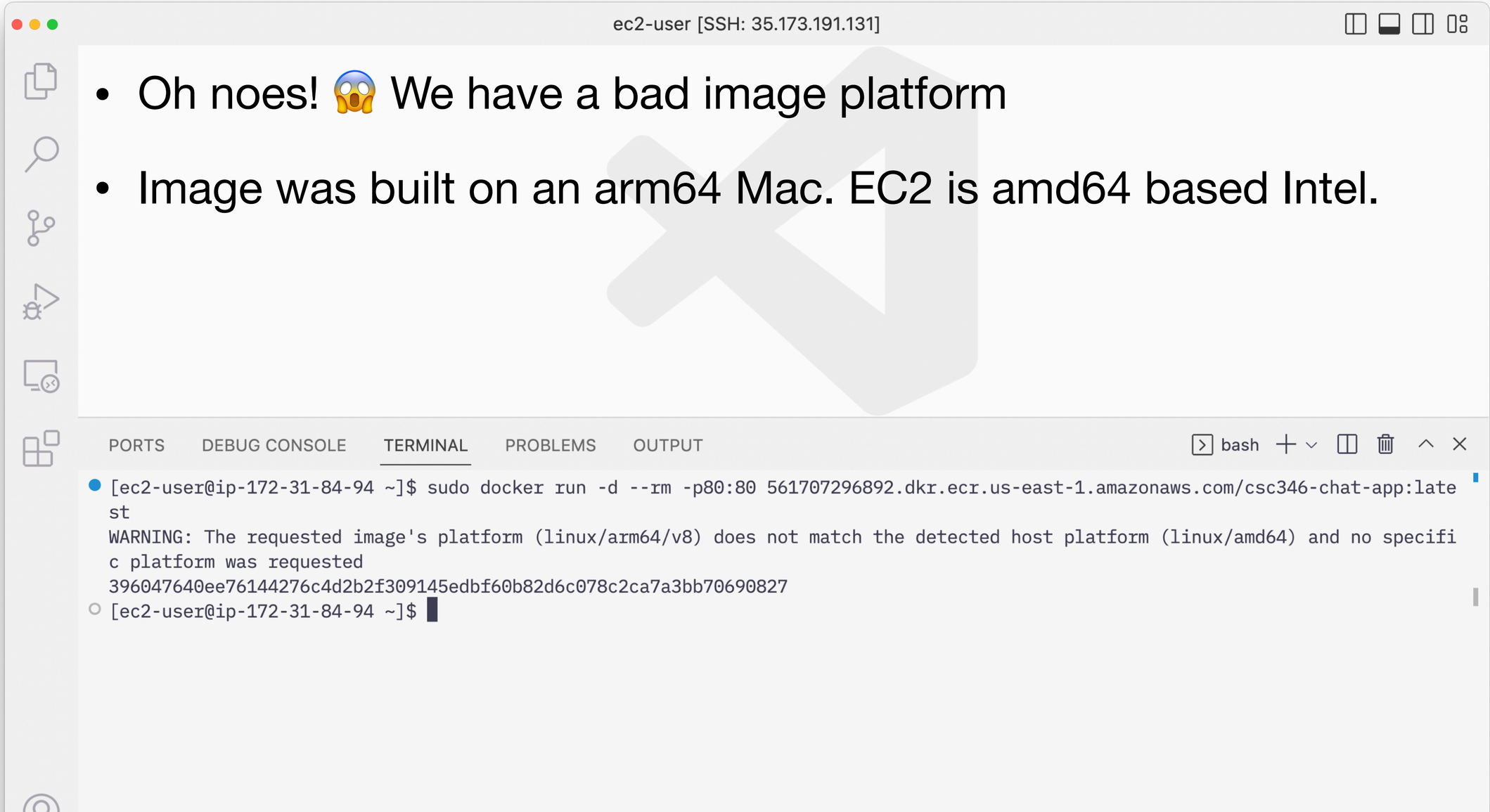

Learner Lab
Modify IAM role | EC2 Manager
https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyIAMRole:instanceId...
aws
Services
Search for services, [Option+S]
N. Virgi
voclabs/user2177624=Mark_Fischer @ 5617-0729
Elastic Container Service
Elastic Container Registry
CloudFormation
VPC
EC2
RDS
Successfully stopped i-0c62b5f94dea05e8b
EC2 > Instances > i-03109ea1b9cfce510 > Modify IAM role
Modify IAM role Info
Attach an IAM role to your instance.
Instance ID
lab
LabInstanceProfile
arn:aws:iam::561707296892:instance-profile/LabInstanceProfile
The role you select replaces any roles that are
Choose IAM role
Create new IAM role
If you choose No IAM Role, any IAM role that is currently attached to the instance will be removed. Are you sure you want to remove from the selected instance?
Cancel
Update IAM role

ECS Repository

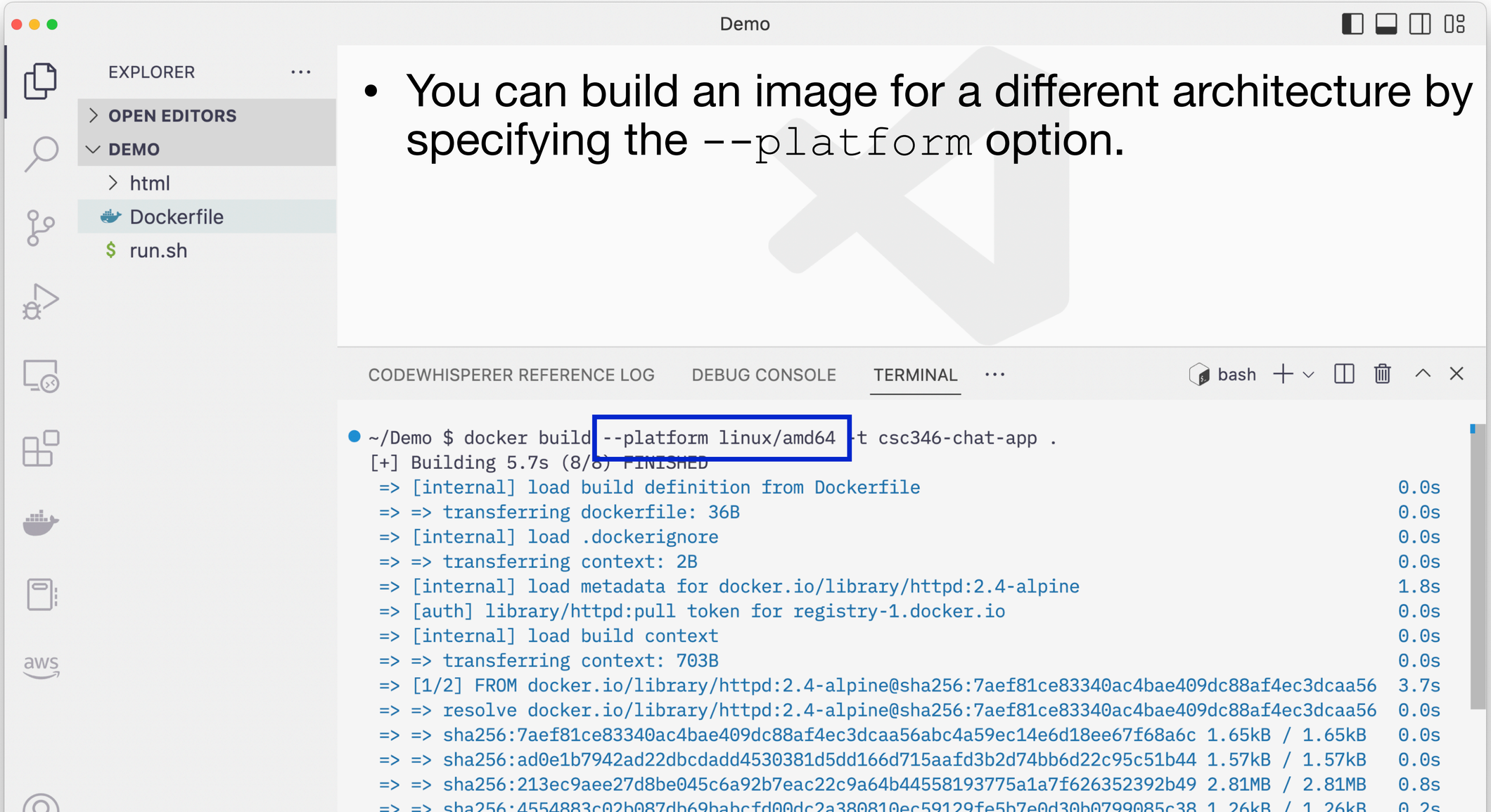
- With an IAM role attached we can now do our docker login on the EC2 instance



ECS Repository



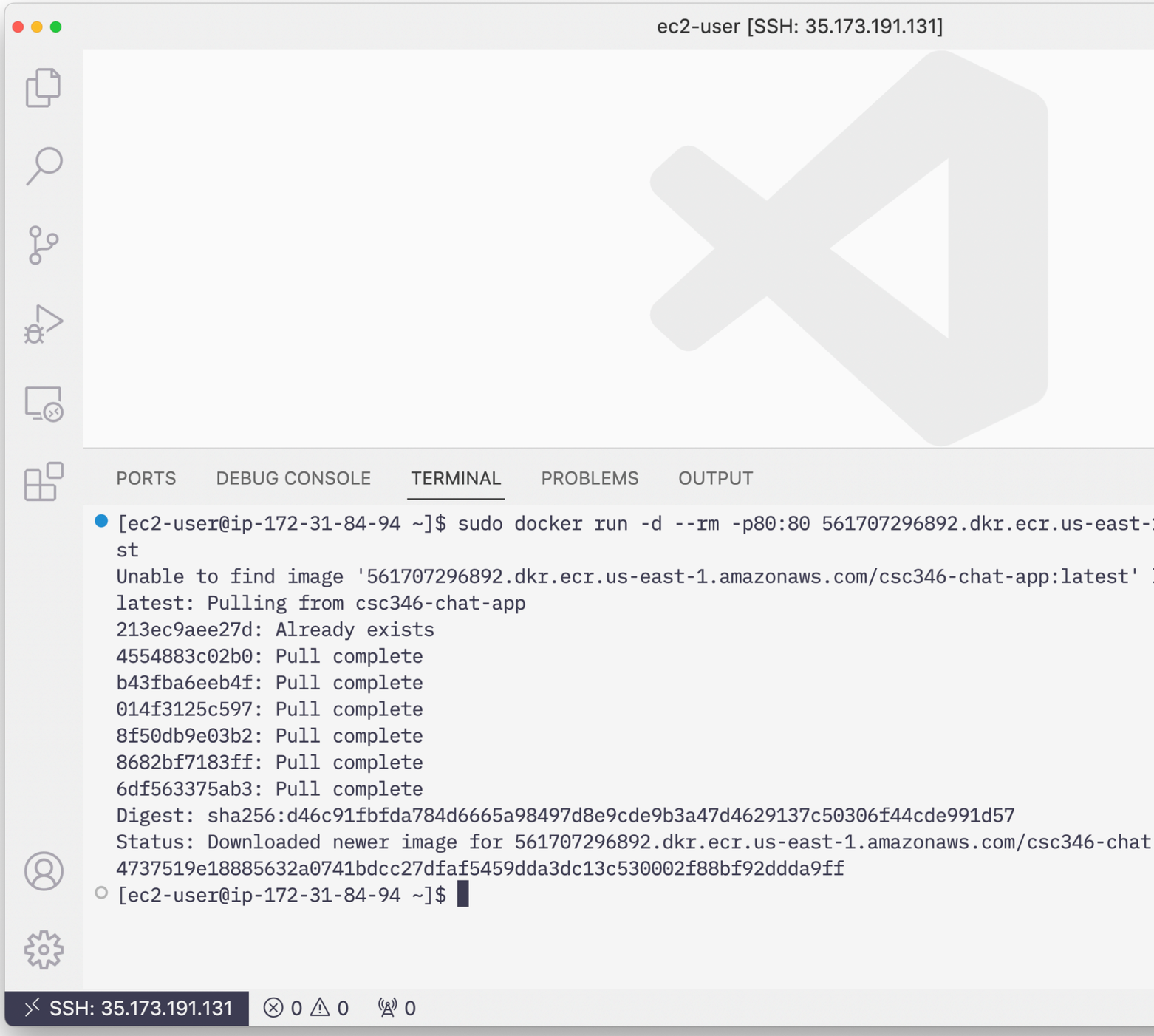
ECS Repository



- You can build an image for a different architecture by specifying the `--platform` option.

ECS Repository

- Build, tag, push the updated image
- Now we can run the image on our EC2 instance directly from the ECR repository



More Automation

- Combine with CloudFormation to automatically login and start the image at boot time