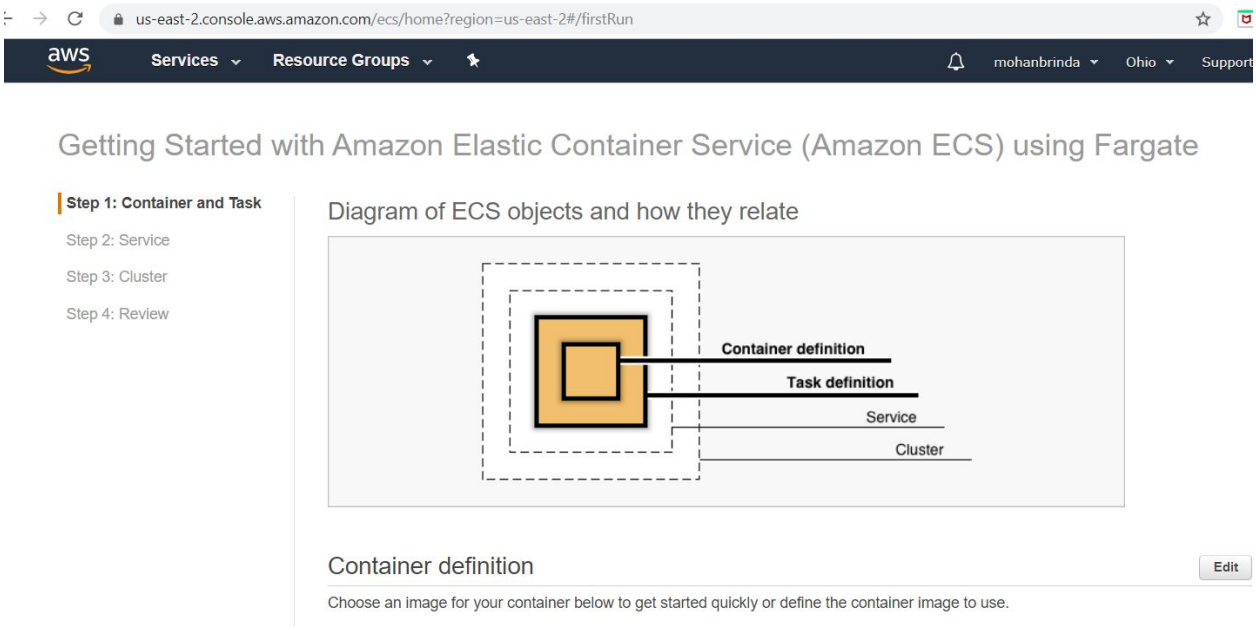
DOCKER CONTAINERS

Deploy Docker Containers using AWS ECS(Elastic Container Service).

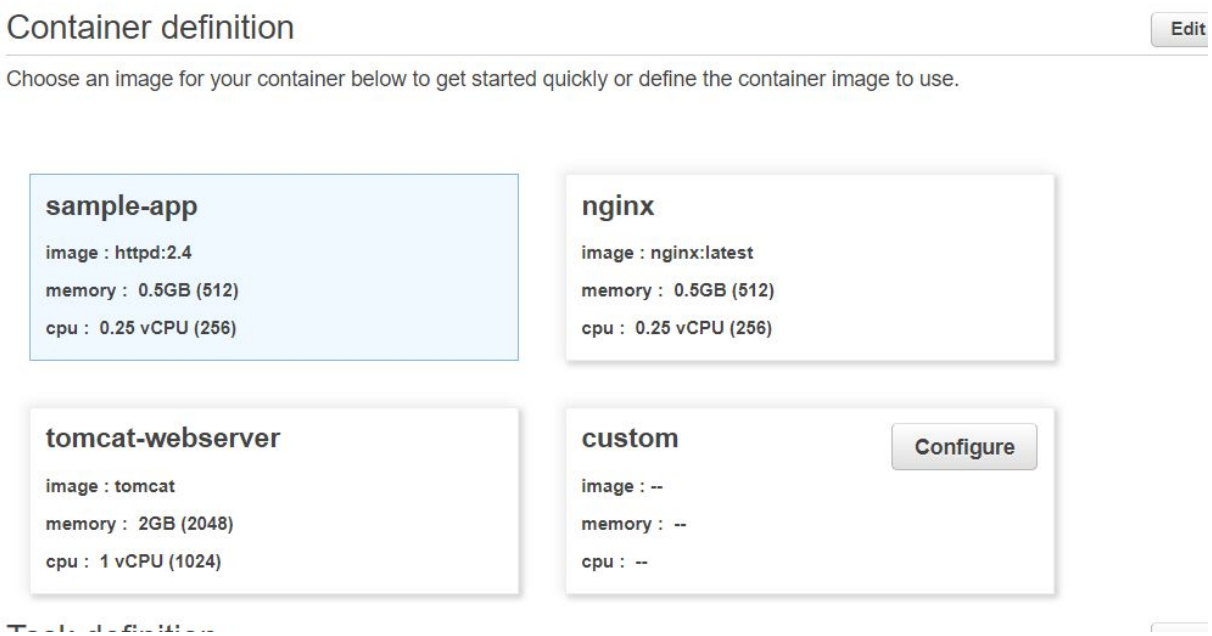
Amazon ECS (Elastic container service) is a web service which is used to run Docker applications on a scalable cluster.

Objective:
Run Docker sample application on Amazon ECS behind the load balancer and test the application.

Step 1:
Set up Amazon ECS. Loginto Amazon ECS console and launch wizard in order to create the cluster and launch sample web application.

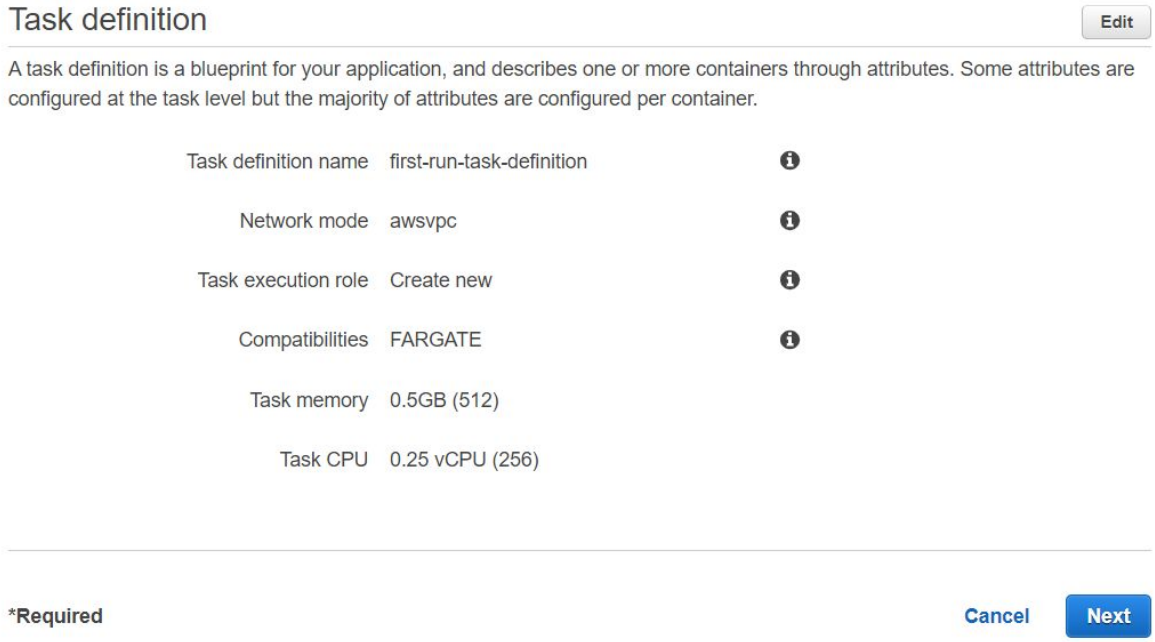


Select the sample app option(screenshot below in order to choose an image for the container below.



Step 2:
Task definition creation:

Specify task definition in order for Amazon ECS to know details of Docker images(which docker images to be used, how many containers to use and the resource allocation for each of the resources etc.) As seen in the screenshot below review the preloaded values and select Next.



Step3: Amazon ECS Service Configuration
Copies of task definitions in the cluster is launched and maintained by the Amazon ECS service. Amazon ECS will autorecover stopped tasks and maintain specified number of copies by running application as a service.

- In the screenshot below leave the service name provided by AWS(Hello world web based application provided by AWS that will run indefinitely as a service and will restart if it becomes unhealthy).
- The desired number of tasks be set to 1. Can be set to more than 1 if required.
- Amazon ECS gives the user the option to use an Elastic Load Balancer(ELB) in order to distribute traffic across the container instances that the task is launched on.
- Select the default values.
- In order to use the Amazon load balancer to an ECS service you must create an Identity and Access Management (IAM) role to use the services(make calls to EC2, register and deregister instances with load balancer etc.) Amazon will create an IAM role if none is available.

Service name	sample-app-service
Number of desired tasks	1
Security group	Automatically create new

Two security groups are created to secure your service: An Application Load Balancer security group that allows all traffic on the Application Load Balancer port and an Amazon ECS security group that allows all traffic ONLY from the Application Load Balancer security group. You can further configure security groups and network access outside of this wizard.

Load balancer type	None
	Application Load Balancer
Load balancer listener port	80
Load balancer listener protocol	HTTP

***Required** Cancel Previous Next

Network access

If you do not use a load balancer, a security group is created to allow all public traffic to your service ONLY on the container port specified. If you use an Application Load Balancer, two security groups are created to secure your service: An Application Load Balancer security group that allows all traffic on the Application Load Balancer port and an Amazon ECS security group that allows all traffic ONLY from the Application Load Balancer security group. You can further configure security groups and network access outside of this wizard.

Security group* Automatically create new

CIDR block

0.0.0.0/0

Changing this value affects which IP addresses can access your service.

Port range

80

Elastic Load Balancing (optional)

An Elastic Load Balancing load balancer distributes incoming traffic across the tasks running in your service.

Load balancer type* None

Application Load Balancer

Allows containers to use dynamic host port mapping (multiple tasks allowed per

and paths.

Container to load balance

sample-app : 80

Load balancer listener port* 80

Load balancer listener protocol* HTTP

Outside the first-run wizard, you can select a certificate to use HTTPS.

Advanced

Health check path* http:80/

Application Load Balancer target group* Automatically create new

A target group is created that maps your listener to an instance.

Step 4: Cluster Configuration

Configure your cluster

The infrastructure in a Fargate cluster is fully managed by AWS. Your containers run without you managing and configuring individual Amazon EC2 instances.

To see key differences between Fargate and standard ECS clusters, see the Amazon ECS documentation.

Cluster name: default

Cluster names are unique per account per region. Up to 255 letters (uppercase and lowercase), numbers, and hyphens are allowed.

VPC ID: Automatically create new

Subnets: Automatically create new

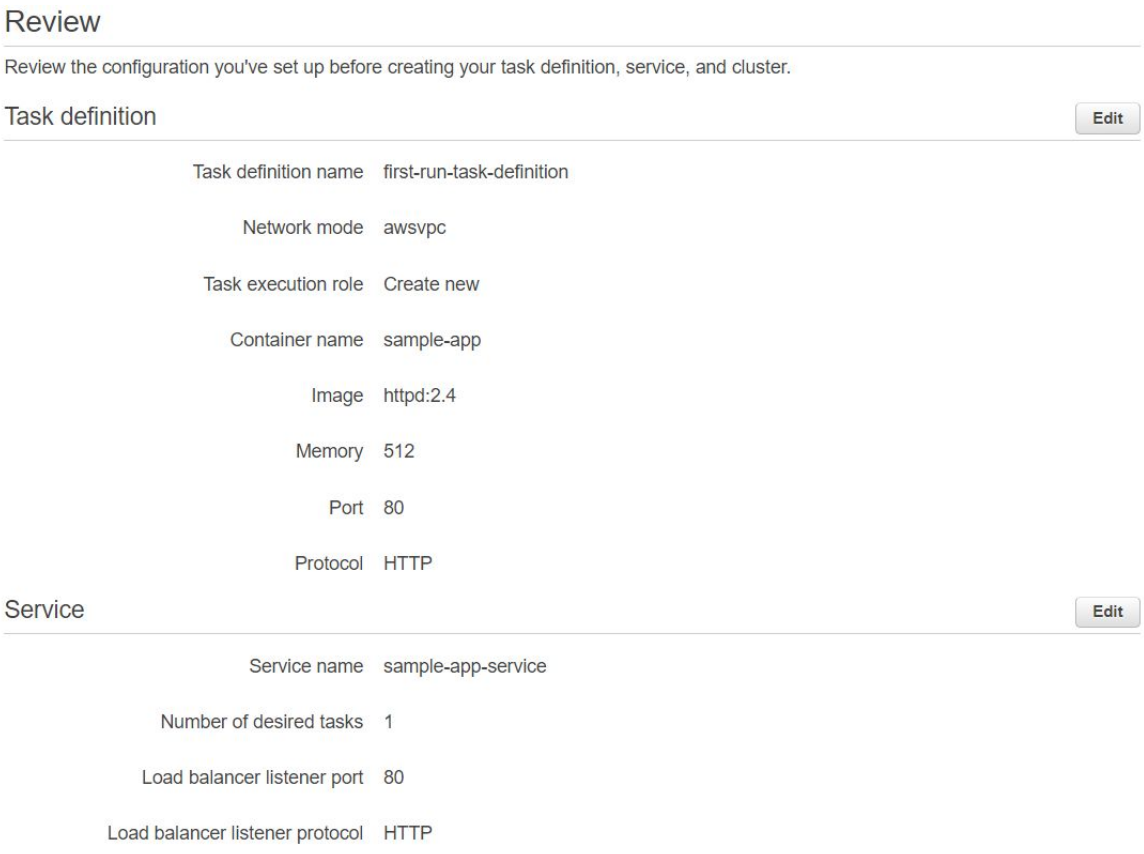
*Required

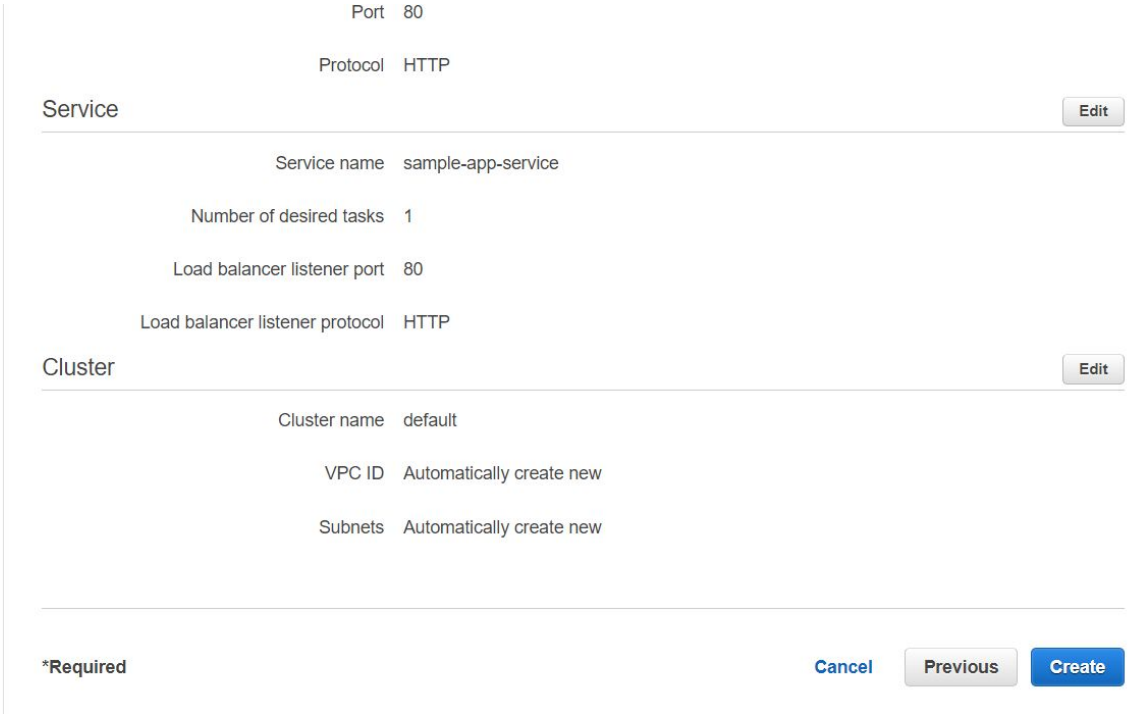
Cancel | Previous | Next

Step5: Review and Launch

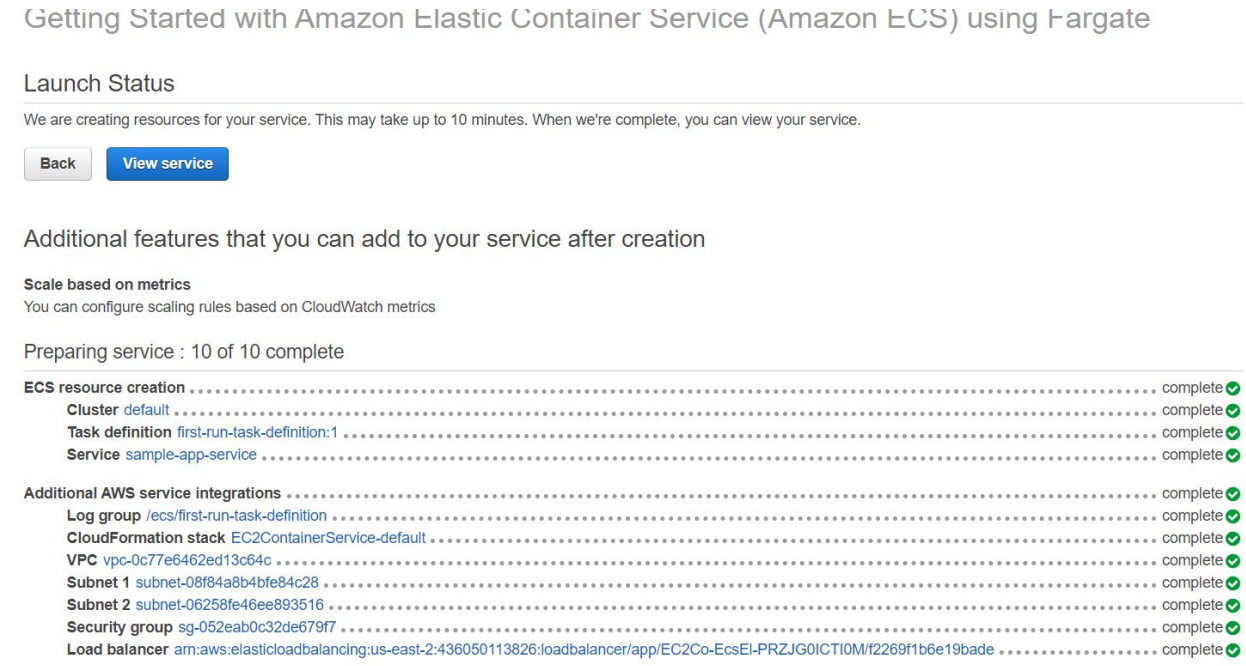
So far, task definitions have been configured, Amazon ECS service which launches and maintains copies of task definitions and cluster which is a set of container instances running the container agent have all been configured.

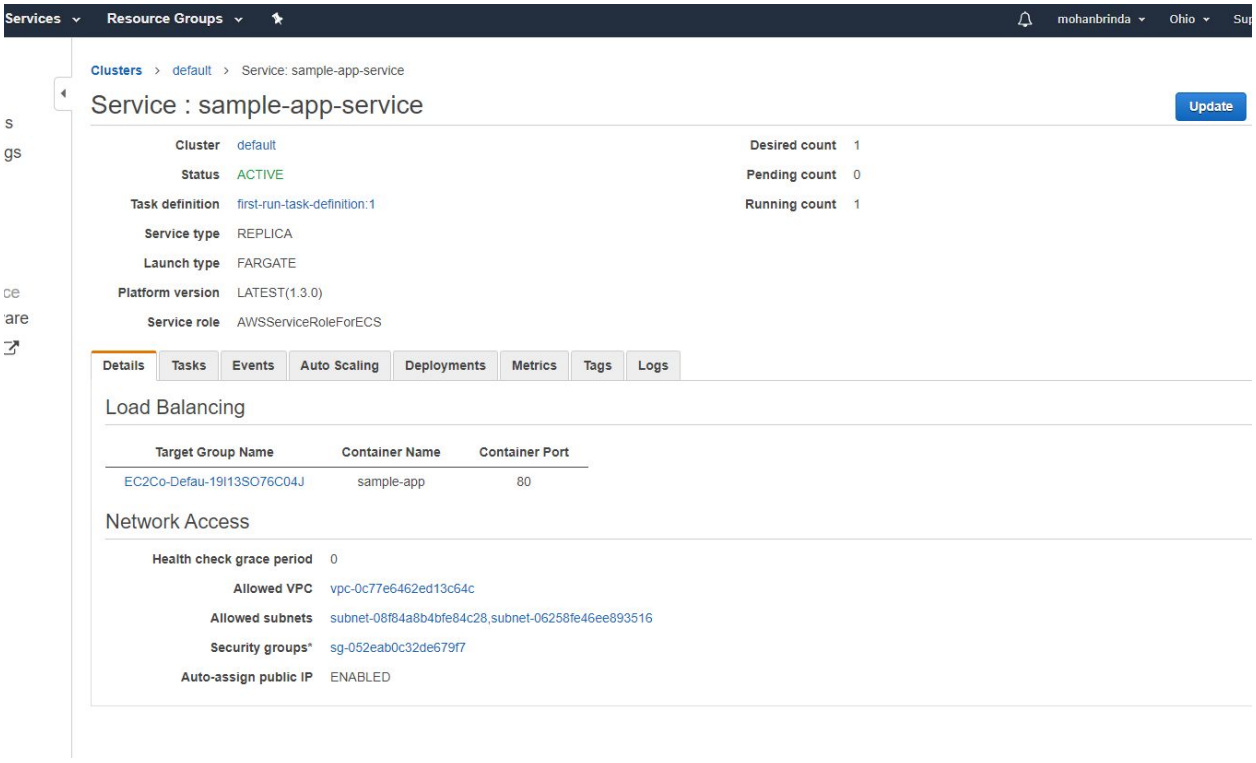
- There will be a final chance to review task definition, task and cluster configuration before launching.
- Select Review and Launch instances.



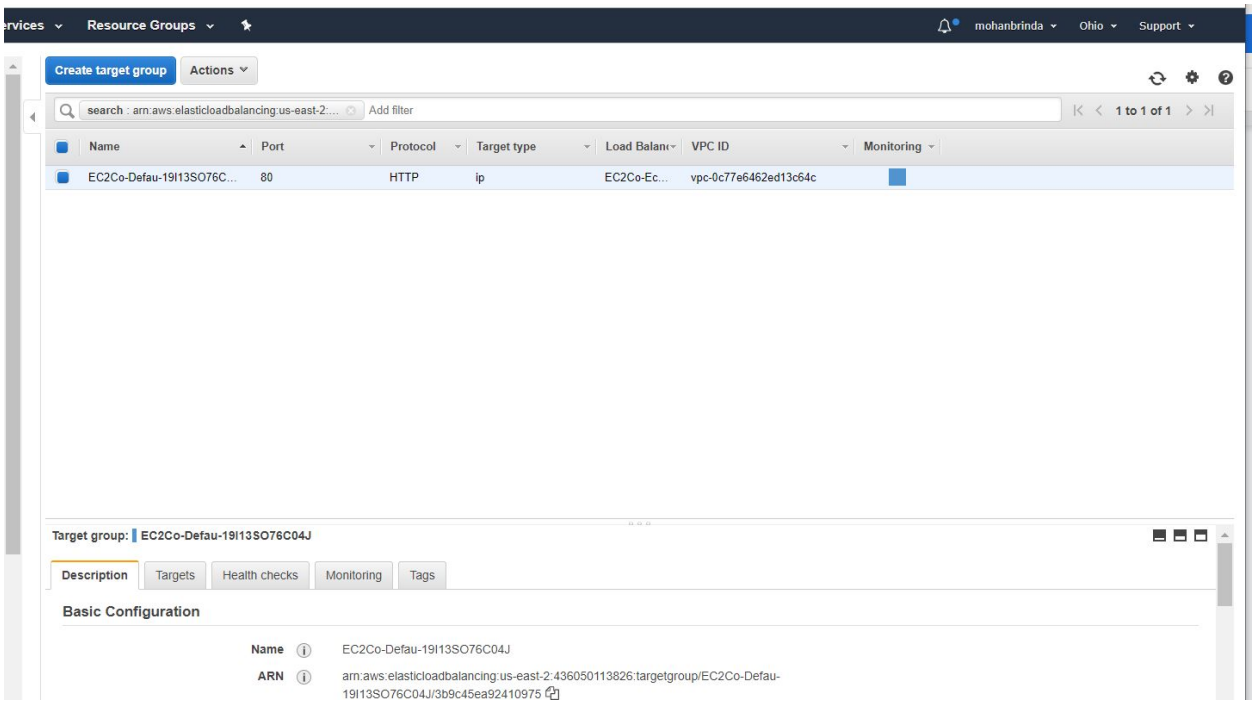


Launch Status service page will display all the details.
Select View service after the launch service task has been completed in order to view the details.



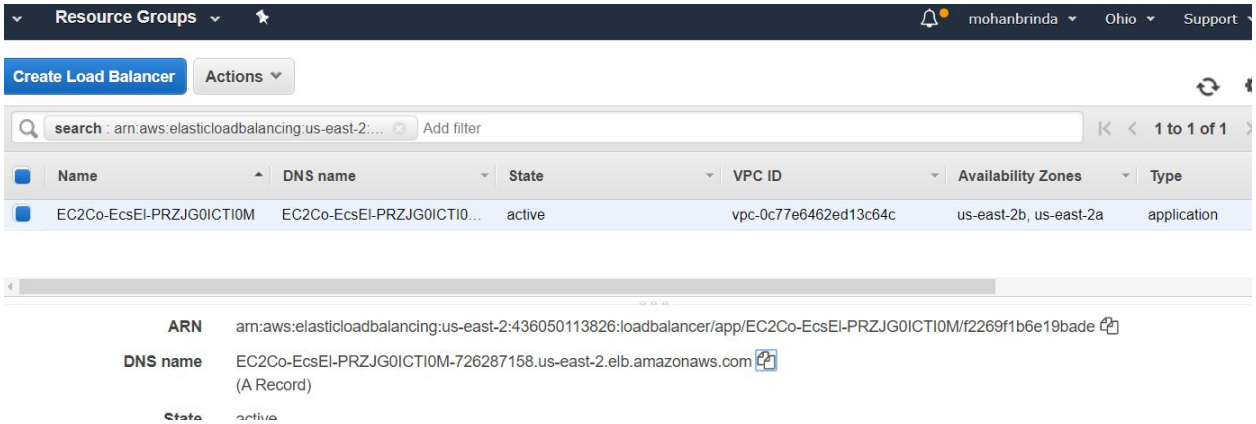


Step 6:
Open the sample application and select the load balancer.

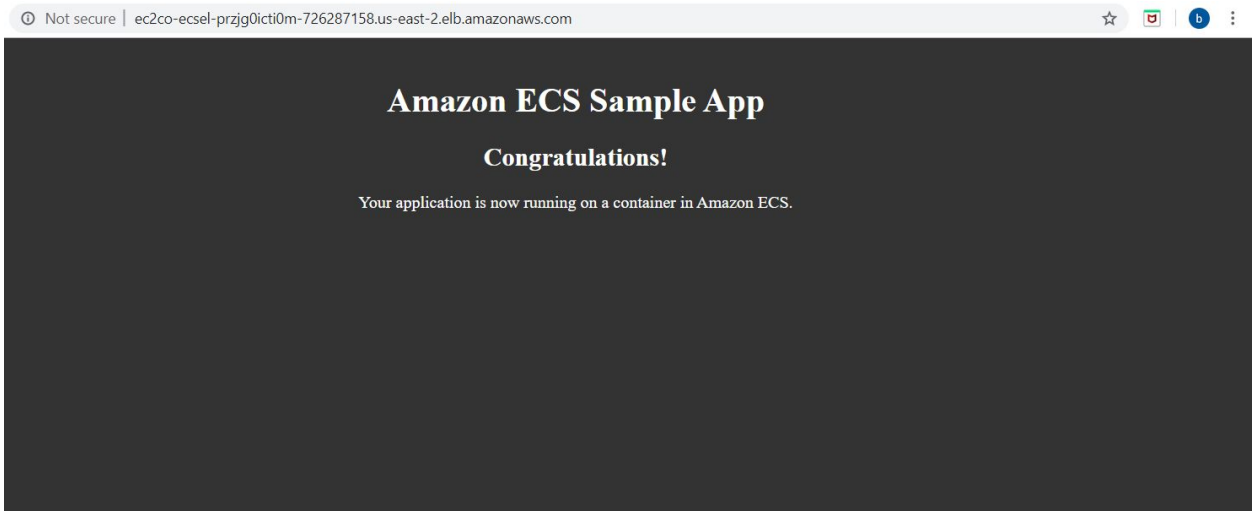


Step7: Test the sample application

Copy the DNS name and paste in a separate browser
Select the DNS name and paste in in the browser

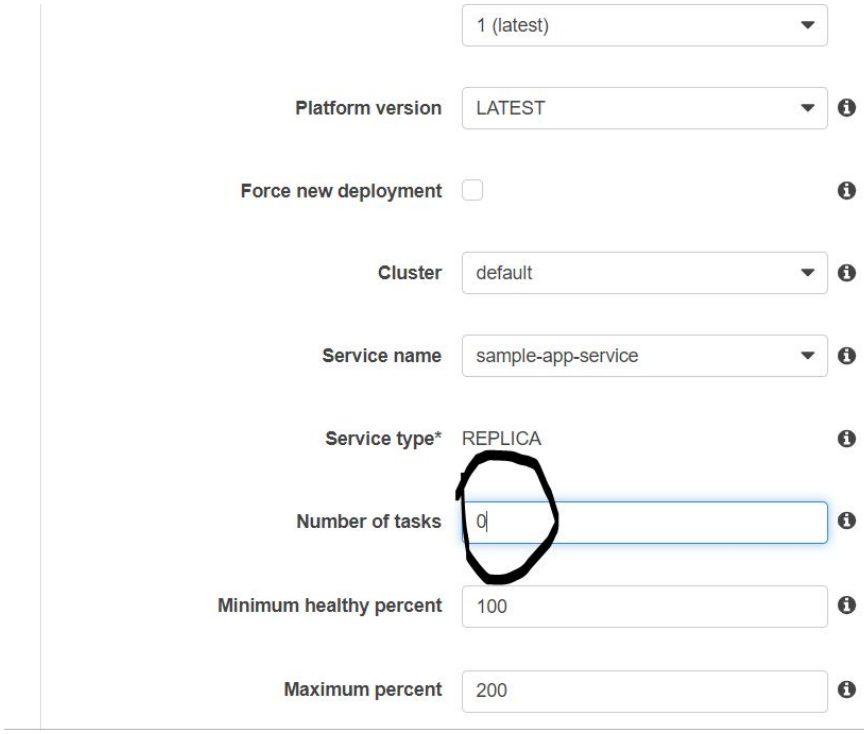


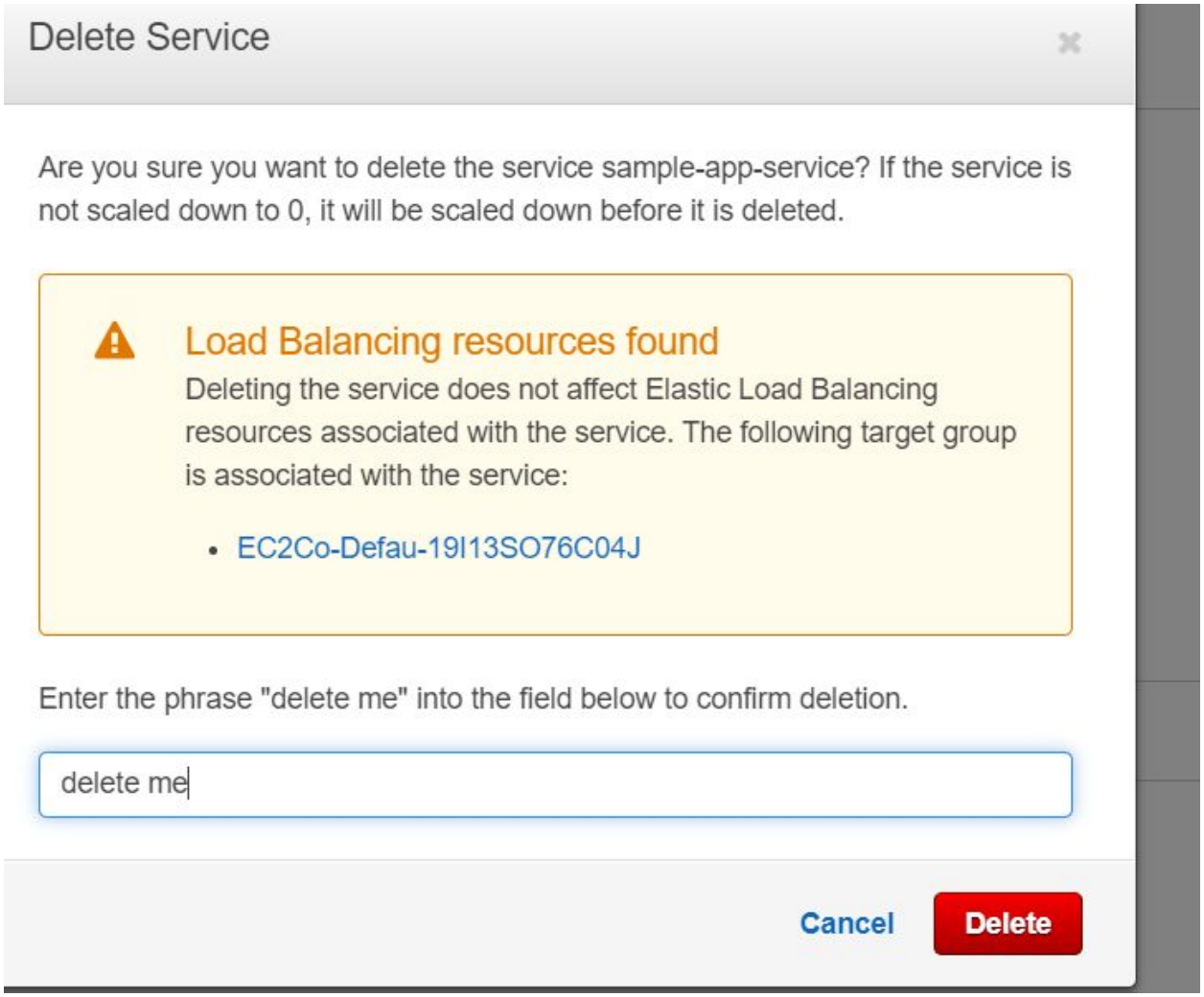
Web Browser(see screenshot below)

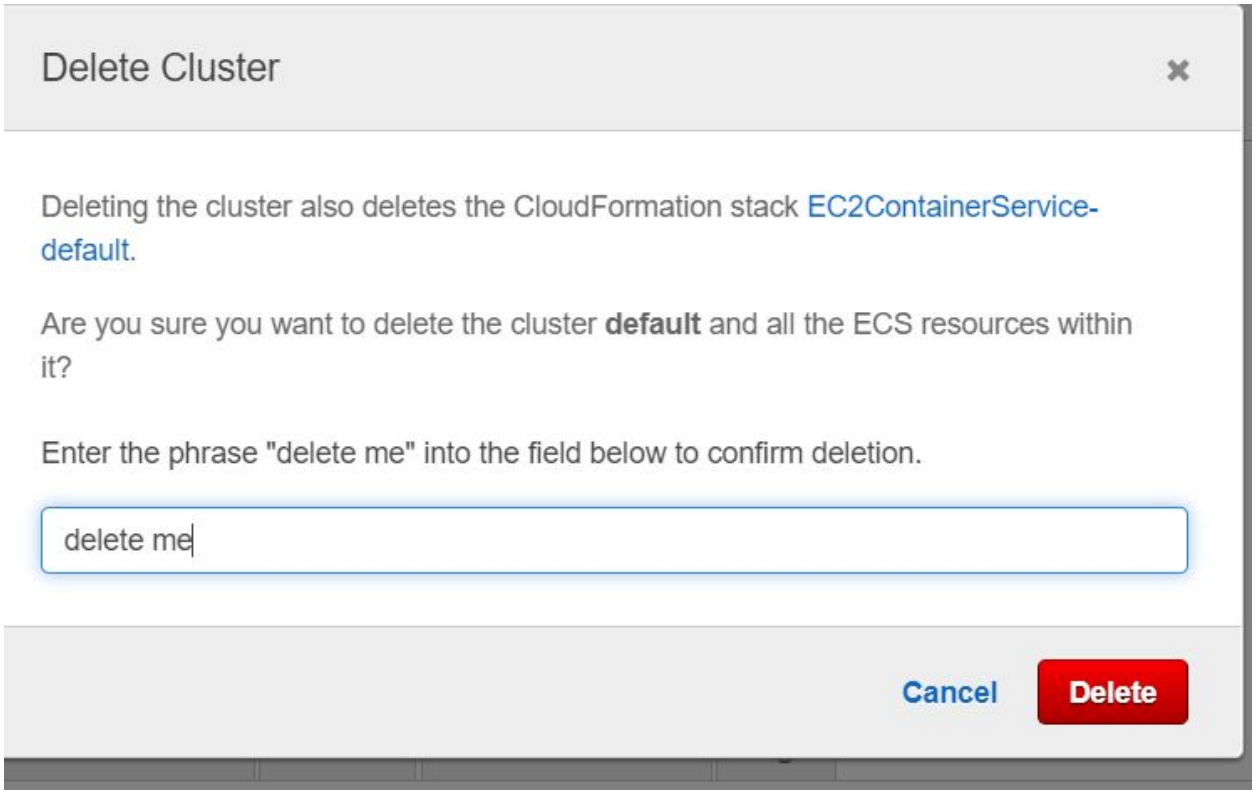


Step7: Delete the resources

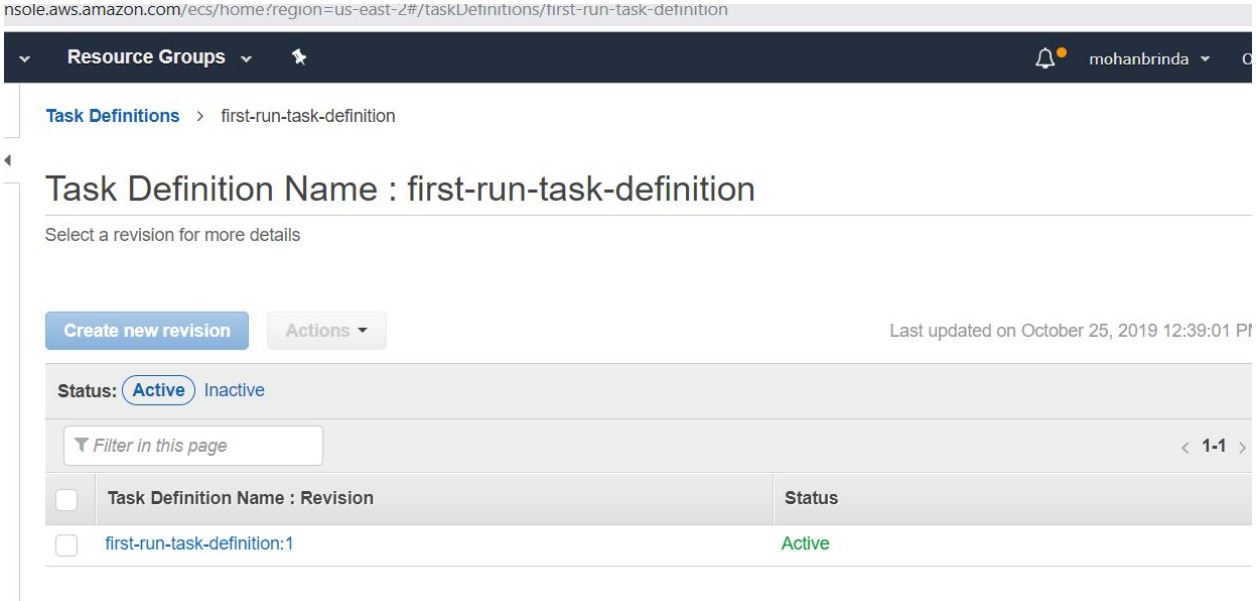
Delete the resources created so far(Amazon ec2 instances, Load balancer, ECS cluster).
On the AMazon ECS console, select the console name, select sample-app and select update(see screenshots below).
Ensure all the tasks have been stopped before Amazon ECS will delete the service.
Set the number of tasks to 0. Update the service before deleting the service.
Also, delete the Amazon ec2 instances associated as well as the load balancers.

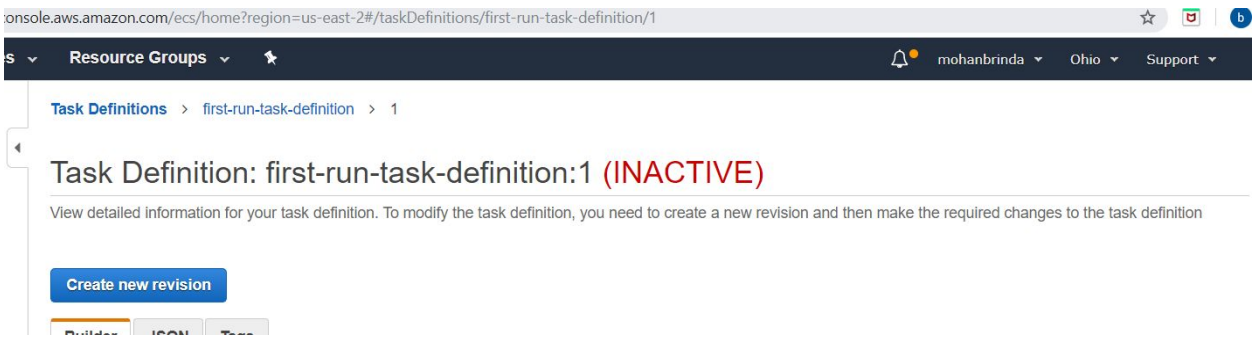

1 (latest)
Platform version
LATEST
Force new deployment
Cluster
default
Service name
sample-app-service
Service type*
REPLICA
Number of tasks
0
Minimum healthy percent
100
Maximum percent
200


Delete Service
Are you sure you want to delete the service sample-app-service? If the service is not scaled down to 0, it will be scaled down before it is deleted.
Load Balancing resources found
Deleting the service does not affect Elastic Load Balancing resources associated with the service. The following target group is associated with the service:
EC2Co-Defau-19I13SO76C04J
Enter the phrase "delete me" into the field below to confirm deletion.
delete me
Cancel
Delete



Deregister tasks




console.aws.amazon.com/ecs/home?region=us-east-2#/taskDefinitions/first-run-task-definition/1
Resource Groups
mohanbrinda
Ohio
Support
Task Definitions > first-run-task-definition > 1
Task Definition: first-run-task-definition:1 (INACTIVE)
View detailed information for your task definition. To modify the task definition, you need to create a new revision and then make the required changes to the task definition
Create new revision