# AWS DAY 15 & 16 ASSIGNMENT

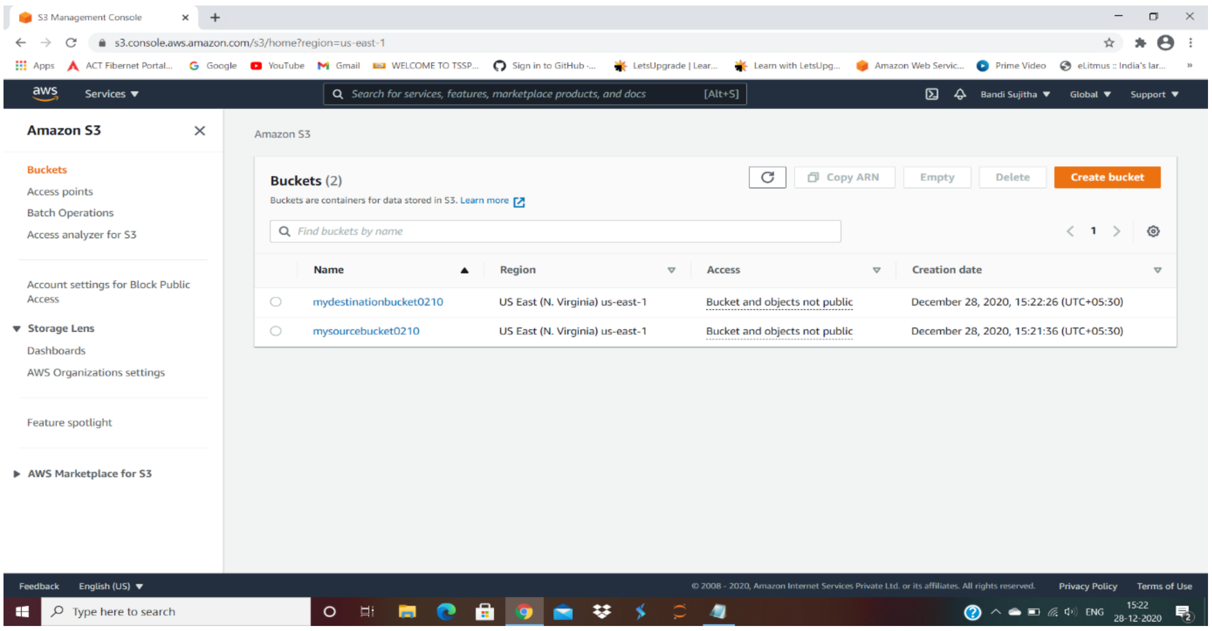
Question 1: Working with Lambda

Step1:Create two s3 buckets with the name

sourcebucket : arn:aws:s3:::mysourcebucket0210

destinationbucket : arn:aws:s3:::mydestinationbucket0210

Ss1: S3 console with two buckets



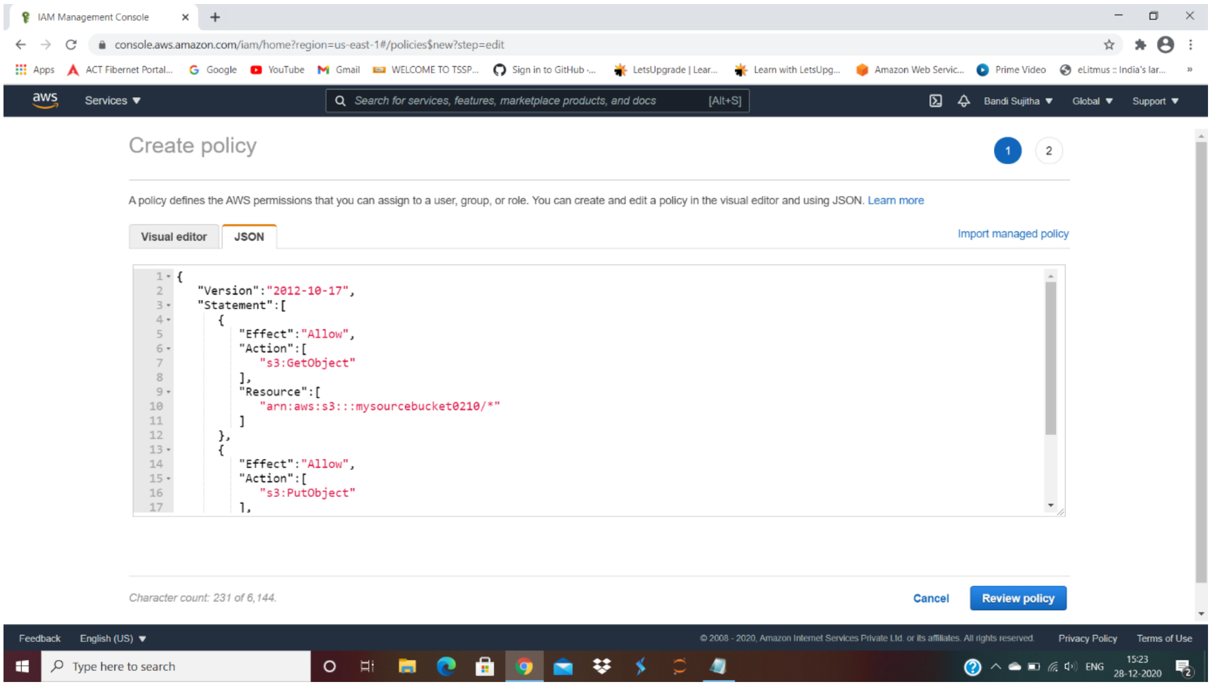
Amazon S3 > Buckets (2)

Buckets are containers for data stored in S3. Learn more

| | Name | Region | Access | Creation date |
|---|---|---|---|---|
| ○ | mydestinationbucket0210 | US East (N. Virginia) us-east-1 | Bucket and objects not public | December 28, 2020, 15:22:26 (UTC+05:30) |
| ○ | mysourcebucket0210 | US East (N. Virginia) us-east-1 | Bucket and objects not public | December 28, 2020, 15:21:36 (UTC+05:30) |

Step2:Creat a policy with limited Read-write permissions using a JSON script

Ss2:json script in place



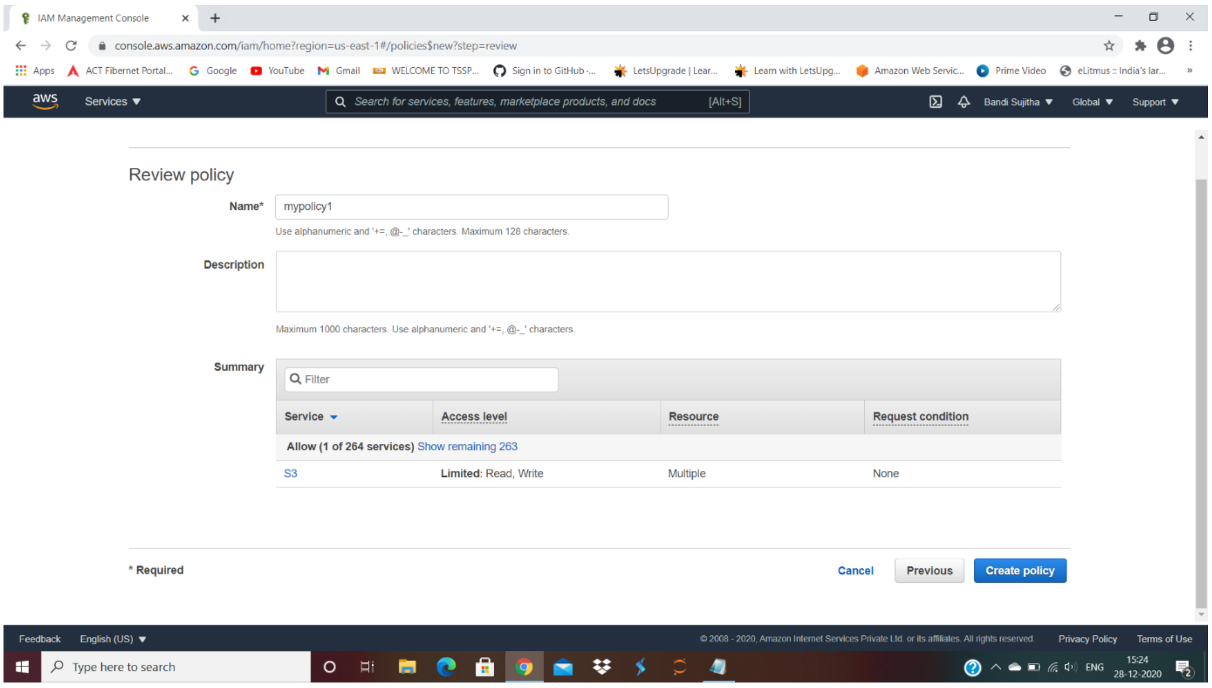
Create policy

A policy defines the AWS permissions that you can assign to a user, group, or role. You can create and edit a policy in the visual editor and using JSON. Learn more

```
{
    "Version":"2012-10-17",
    "Statement":[
        {
            "Effect":"Allow",
            "Action":[
                "s3:GetObject"
            ],
            "Resource":[
                "arn:aws:s3:::mysourcebucket0210/*"
            ]
        },
        {
            "Effect":"Allow",
            "Action":[
                "s3:PutObject"
            ],
```

Character count: 231 of 6,144.

Ss3:policy console with your policy filtered



console.aws.amazon.com/iam/home?region=us-east-1#/policies$new?step=review

Review policy

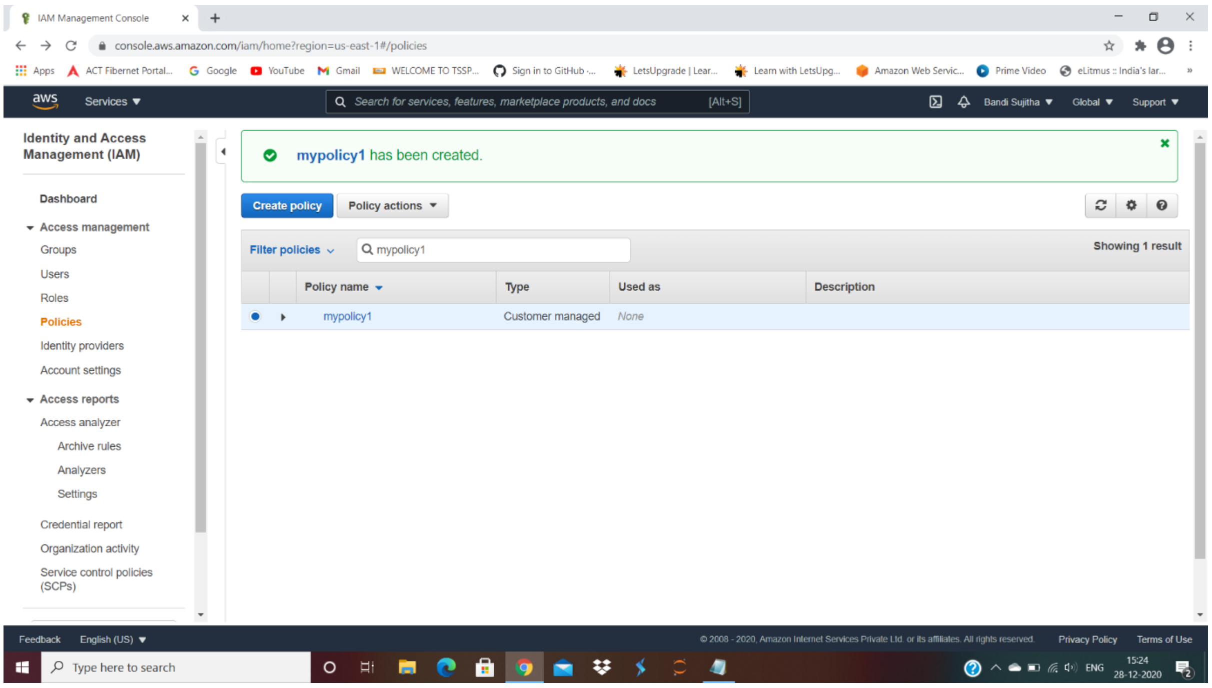
| | |
|---|---|
| Name* | mypolicy1 |
| | Use alphanumeric and '+=,.@-_' characters. Maximum 128 characters. |
| Description | |
| | Maximum 1000 characters. Use alphanumeric and '+=,.@-_' characters. |

Summary

| Service | Access level | Resource | Request condition |
|---|---|---|---|
| Allow (1 of 264 services) Show remaining 263 | | | |
| S3 | Limited: Read, Write | Multiple | None |

* Required

Cancel Previous Create policy



console.aws.amazon.com/iam/home?region=us-east-1#/policies

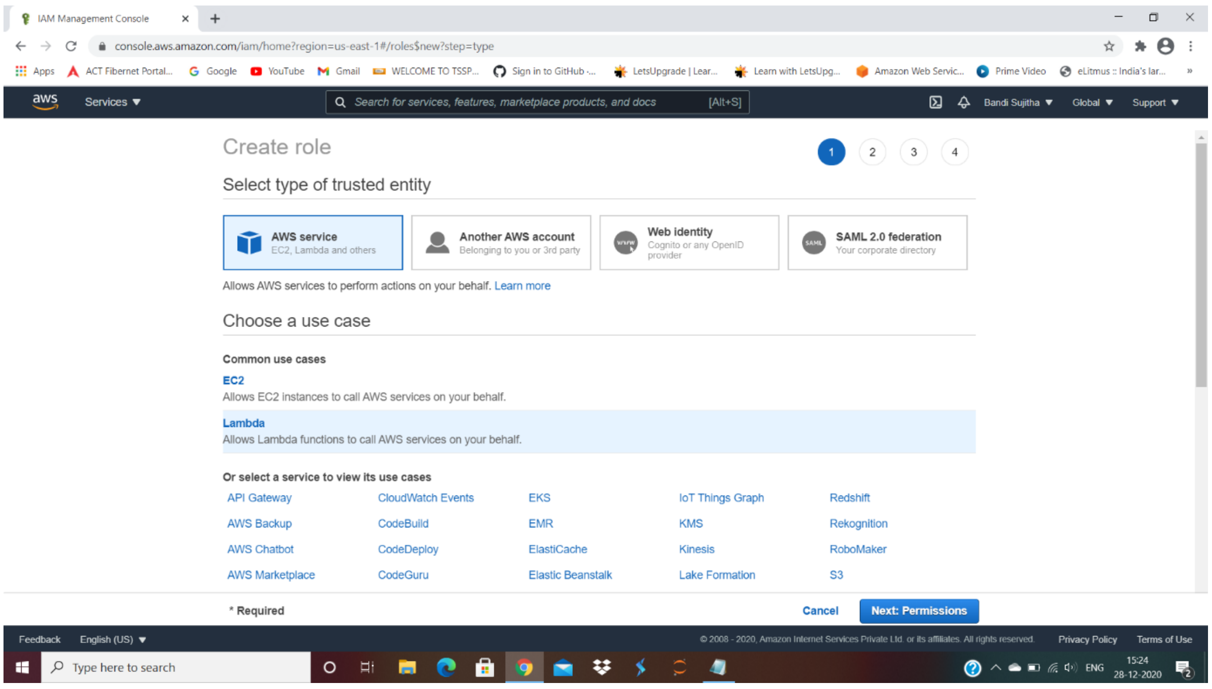
mypolicy1 has been created.

Filter policies: mypolicy1 — Showing 1 result

| Policy name | Type | Used as | Description |
|---|---|---|---|
| mypolicy1 | Customer managed | None | |

Step3:Create a role and attach the policy that was created in the previous step.

Ss4:Role console showing details of the role


IAM Management Console
console.aws.amazon.com/iam/home?region=us-east-1#/roles$new?step=type
Services
Search for services, features, marketplace products, and docs [Alt+S]
Bandi Sujitha
Global
Support
Feedback
English (US)
Type here to search
15:24
28-12-2020

Create role

1 2 3 4

Select type of trusted entity

| | | | |
|---|---|---|---|
| AWS service EC2, Lambda and others | Another AWS account Belonging to you or 3rd party | Web identity Cognito or any OpenID provider | SAML 2.0 federation Your corporate directory |

Allows AWS services to perform actions on your behalf. Learn more

Choose a use case

**Common use cases**

EC2
Allows EC2 instances to call AWS services on your behalf.

Lambda
Allows Lambda functions to call AWS services on your behalf.

**Or select a service to view its use cases**

| | | | | |
|---|---|---|---|---|
| API Gateway | CloudWatch Events | EKS | IoT Things Graph | Redshift |
| AWS Backup | CodeBuild | EMR | KMS | Rekognition |
| AWS Chatbot | CodeDeploy | ElastiCache | Kinesis | RoboMaker |
| AWS Marketplace | CodeGuru | Elastic Beanstalk | Lake Formation | S3 |

* Required    Cancel    Next: Permissions

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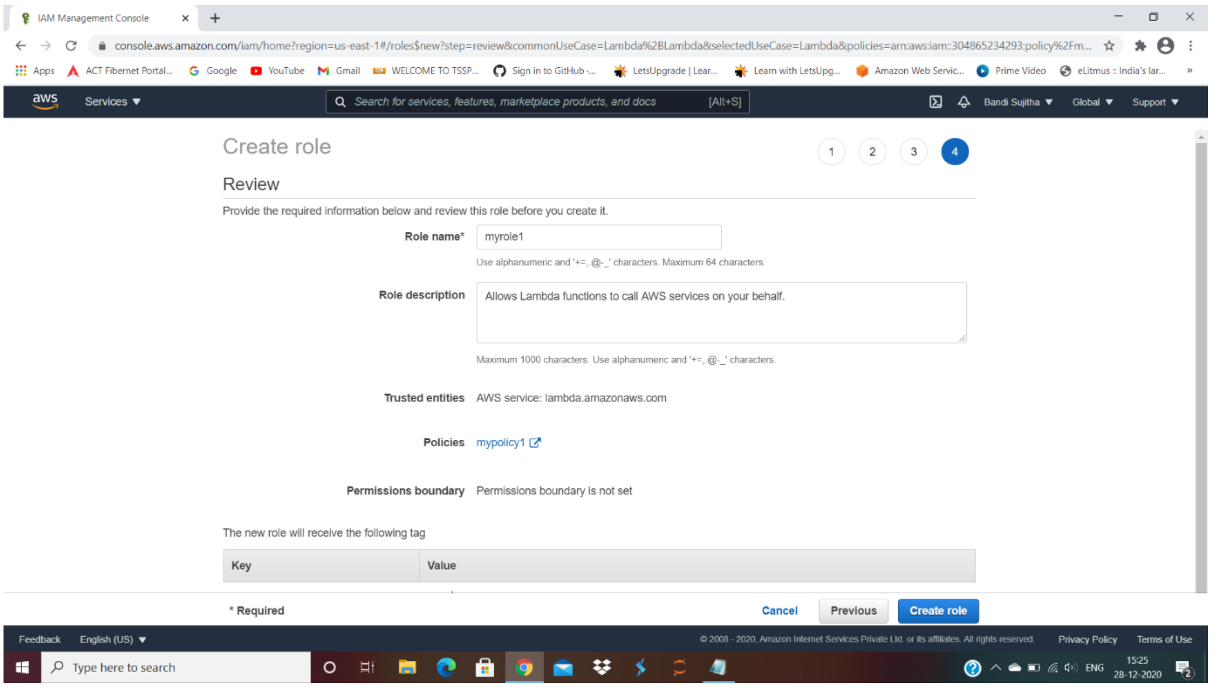
IAM Management Console
console.aws.amazon.com/iam/home?region=us-east-1#/roles$new?step=review&commonUseCase=Lambda%2BLambda&selectedUseCase=Lambda&policies=arn:aws:iam::304865234293:policy%2Fm...
Services
Search for services, features, marketplace products, and docs [Alt+S]
Bandi Sujitha
Global
Support
Feedback
English (US)
Type here to search
15:25
28-12-2020

Create role

1 2 3 4

Review

Provide the required information below and review this role before you create it.

Role name*: myrole1

Use alphanumeric and '+=,.@-_' characters. Maximum 64 characters.

Role description: Allows Lambda functions to call AWS services on your behalf.

Maximum 1000 characters. Use alphanumeric and '+=,.@-_' characters.

Trusted entities: AWS service: lambda.amazonaws.com

Policies: mypolicy1

Permissions boundary: Permissions boundary is not set

The new role will receive the following tag

| Key | Value |
|---|---|

* Required    Cancel    Previous    Create role

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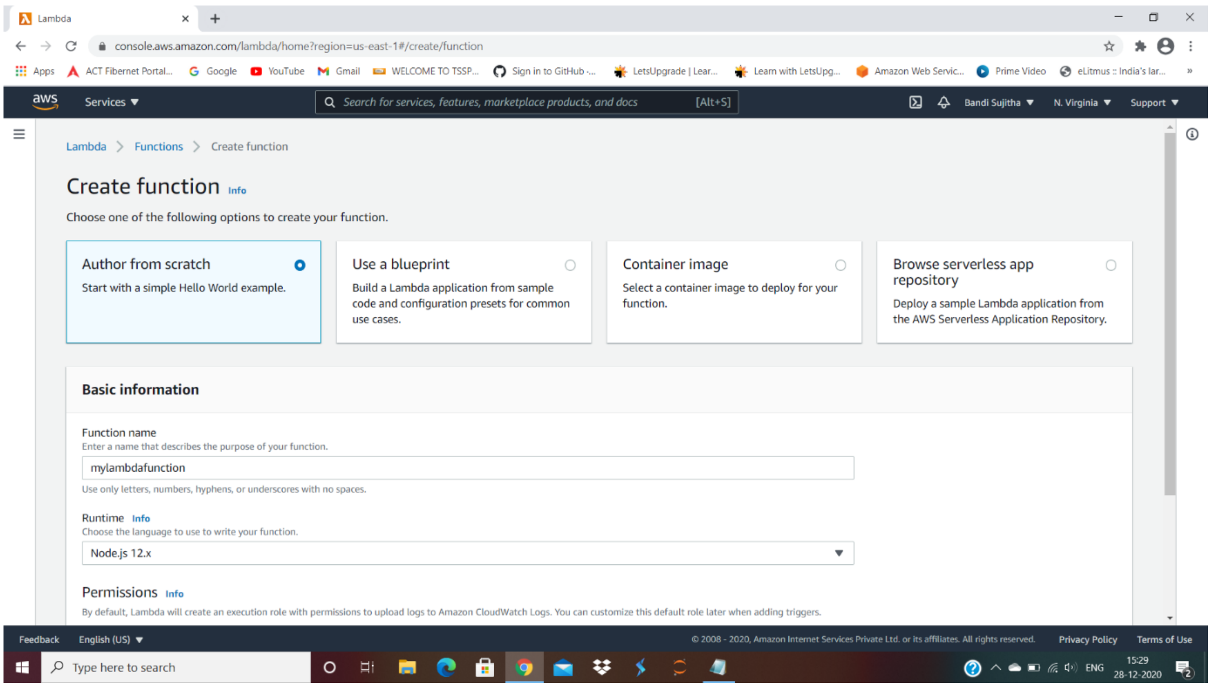
Step4:Create a Lambda function

Ss5:lambda functions dashboard


Lambda > Functions > Create function

Create function Info

Choose one of the following options to create your function.

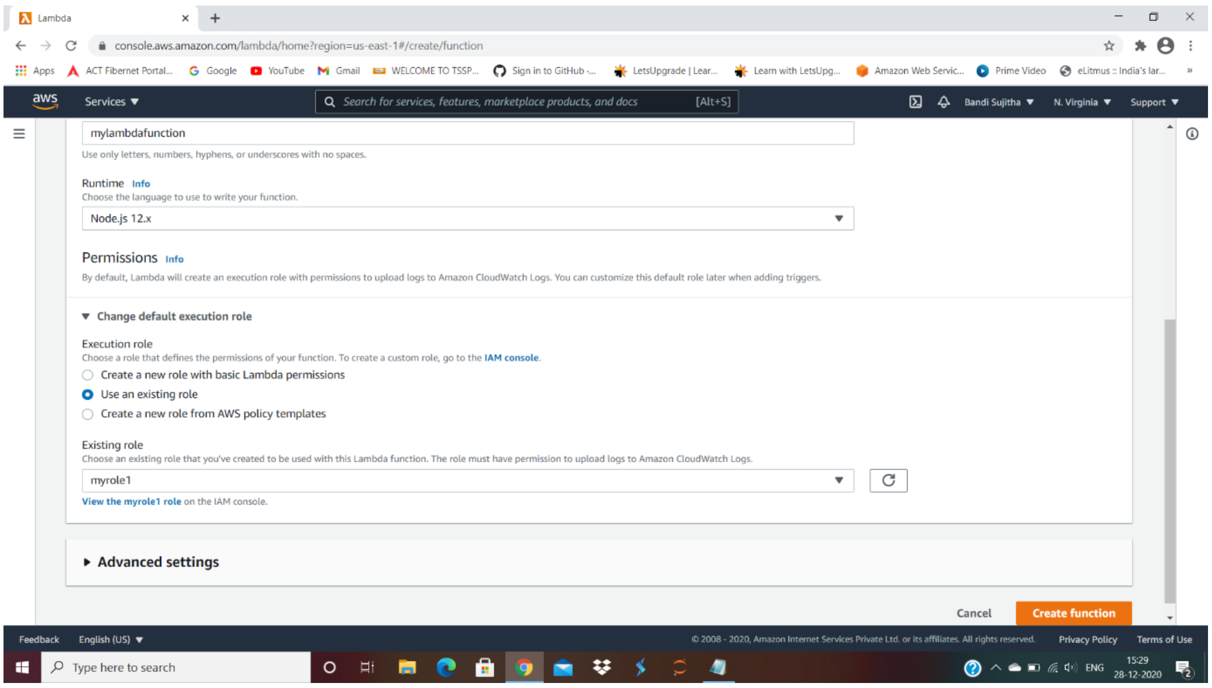
- [✓ Author from scratch] Start with a simple Hello World example.
- Use a blueprint: Build a Lambda application from sample code and configuration presets for common use cases.
- Container image: Select a container image to deploy for your function.
- Browse serverless app repository: Deploy a sample Lambda application from the AWS Serverless Application Repository.

Basic information

Function name
Enter a name that describes the purpose of your function.
mylambdafunction
Use only letters, numbers, hyphens, or underscores with no spaces.

Runtime Info
Choose the language to use to write your function.
Node.js 12.x

Permissions Info
By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.


mylambdafunction
Use only letters, numbers, hyphens, or underscores with no spaces.

Runtime Info
Choose the language to use to write your function.
Node.js 12.x

Permissions Info
By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

▼ Change default execution role

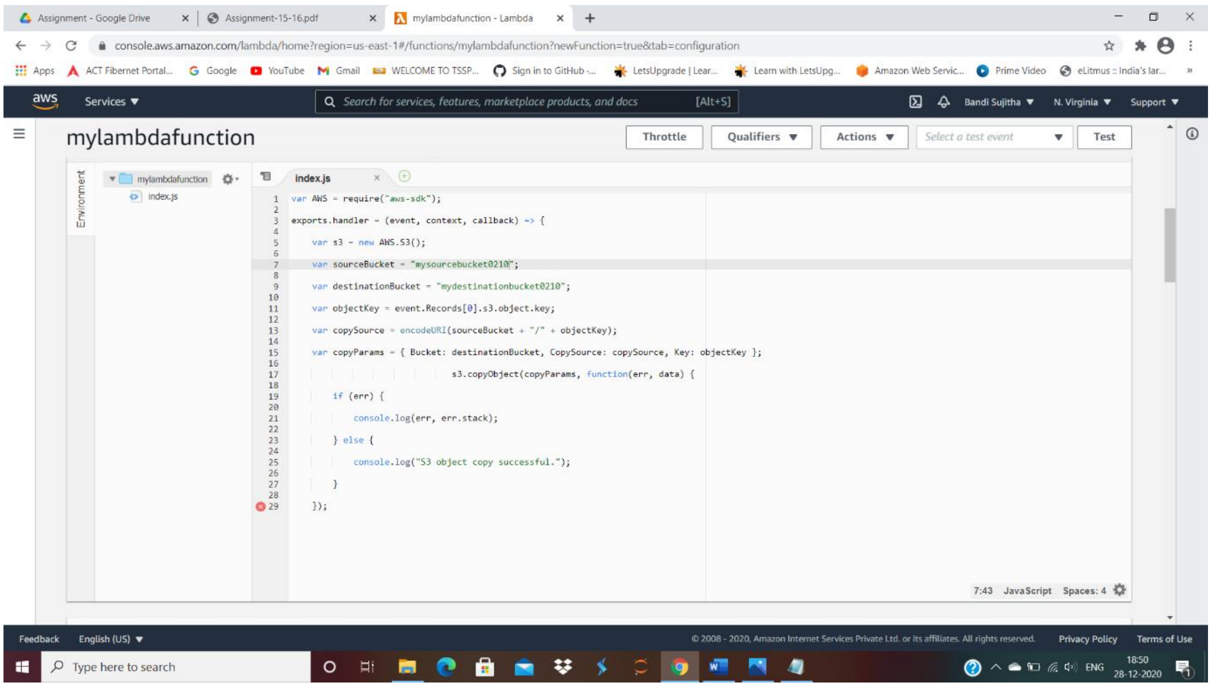
Execution role
Choose a role that defines the permissions of your function. To create a custom role, go to the IAM console.
- Create a new role with basic Lambda permissions
- [✓ Use an existing role]
- Create a new role from AWS policy templates

Existing role
Choose an existing role that you've created to be used with this Lambda function. The role must have permission to upload logs to Amazon CloudWatch Logs.
myrole1
View the myrole1 role on the IAM console.

▶ Advanced settings

Cancel | Create function

Ss6:js file edited



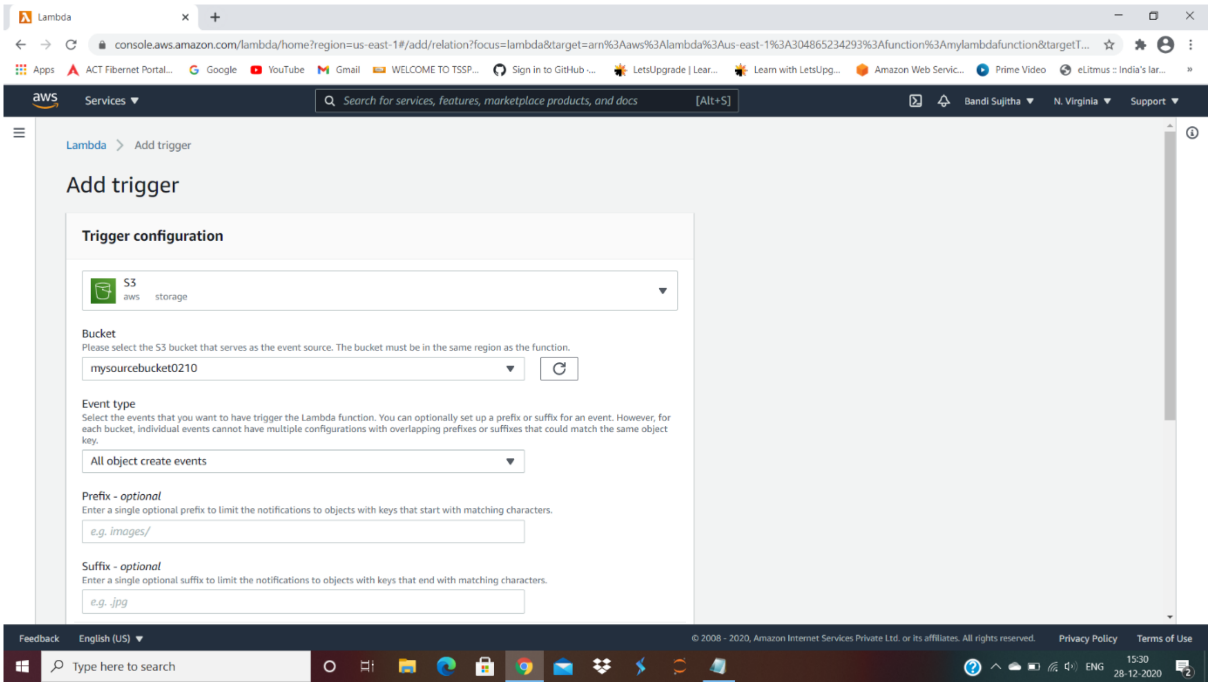
mylambdafunction

Throttle | Qualifiers | Actions | Select a test event | Test

```
var AWS = require("aws-sdk");

exports.handler = (event, context, callback) => {

    var s3 = new AWS.S3();

    var sourceBucket = "mysourcebucket0210";

    var destinationBucket = "mydestinationbucket0210";

    var objectKey = event.Records[0].s3.object.key;

    var copySource = encodeURI(sourceBucket + "/" + objectKey);

    var copyParams = { Bucket: destinationBucket, CopySource: copySource, Key: objectKey };

                              s3.copyObject(copyParams, function(err, data) {

        if (err) {

            console.log(err, err.stack);

        } else {

            console.log("S3 object copy successful.");

        }

    });
```

7:43 JavaScript Spaces: 4

Ss7:adding trigger-s3,bucket name,confirmation for having separate buckets



Lambda > Add trigger

Add trigger

**Trigger configuration**

S3
aws storage

Bucket
Please select the S3 bucket that serves as the event source. The bucket must be in the same region as the function.
mysourcebucket0210

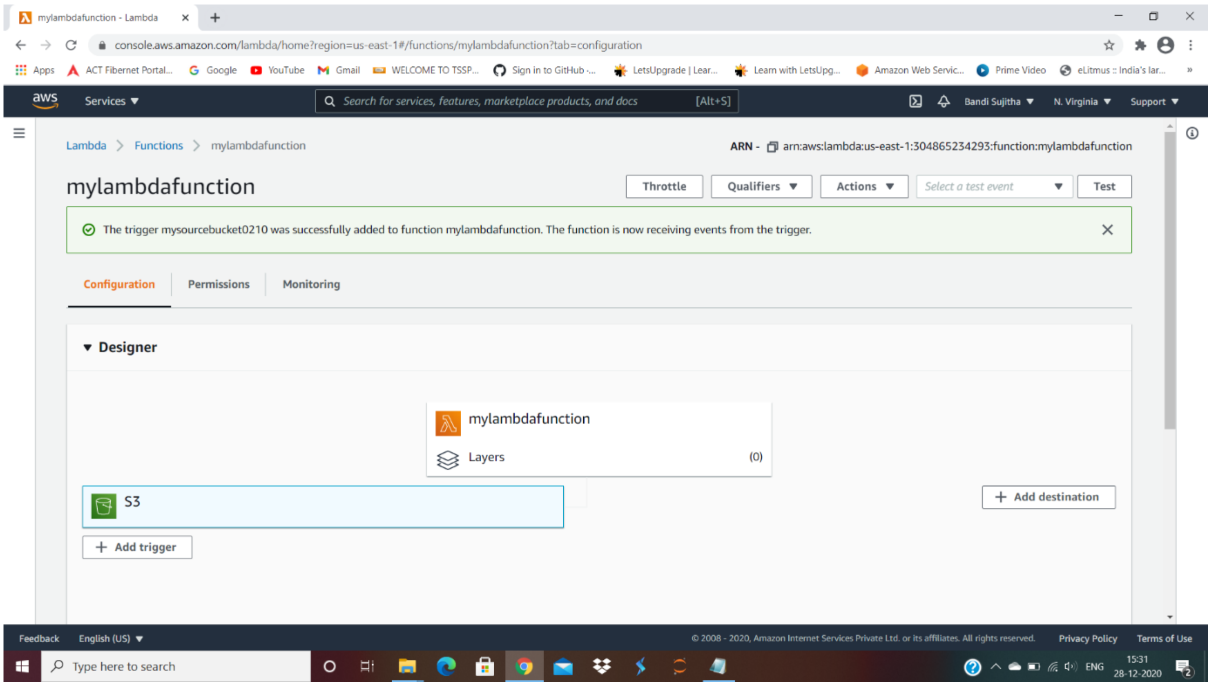
Event type
Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.
All object create events

Prefix - *optional*
Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.
e.g. images/

Suffix - *optional*
Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.
e.g. .jpg

Step5:Adding triggers to the lambda function

Ss8:lambda configuration page with trigger added


mylambdafunction - Lambda
console.aws.amazon.com/lambda/home?region=us-east-1#/functions/mylambdafunction?tab=configuration
Services
Search for services, features, marketplace products, and docs [Alt+S]
Bandi Sujitha
N. Virginia
Support
Lambda > Functions > mylambdafunction
ARN - arn:aws:lambda:us-east-1:304865234293:function:mylambdafunction
mylambdafunction
Throttle
Qualifiers
Actions
Select a test event
Test

The trigger mysourcebucket0210 was successfully added to function mylambdafunction. The function is now receiving events from the trigger.

Configuration
Permissions
Monitoring
Designer
mylambdafunction
Layers (0)
S3
+ Add trigger
+ Add destination
Feedback
English (US)
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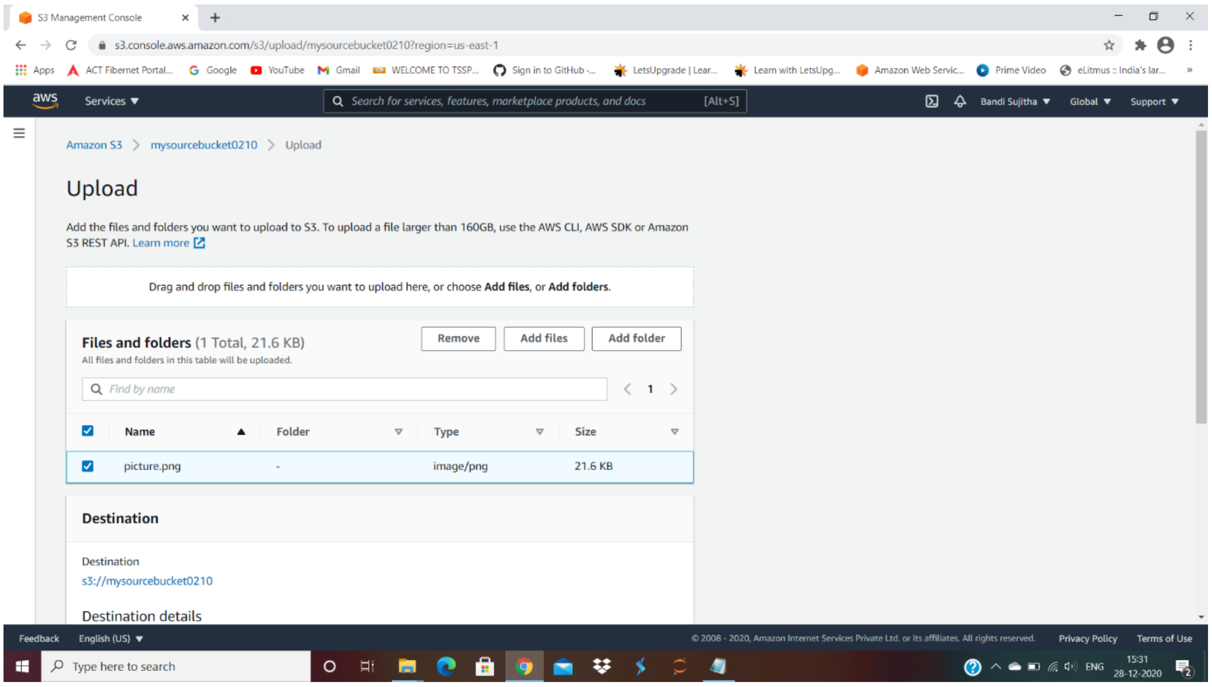
Privacy Policy
Terms of Use
Type here to search
15:31
28-12-2020

Step6:Test by uploading objects into the source bucket

Ss9:object uploaded in the source bucket


S3 Management Console
s3.console.aws.amazon.com/s3/upload/mysourcebucket0210?region=us-east-1
Services
Search for services, features, marketplace products, and docs [Alt+S]
Bandi Sujitha
Global
Support
Amazon S3 > mysourcebucket0210 > Upload
Upload

Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. Learn more

Drag and drop files and folders you want to upload here, or choose **Add files**, or **Add folders**.

**Files and folders** (1 Total, 21.6 KB)

All files and folders in this table will be uploaded.

Remove
Add files
Add folder
Find by name

| Name | Folder | Type | Size |
|---|---|---|---|
| picture.png | - | image/png | 21.6 KB |

**Destination**

Destination
s3://mysourcebucket0210

Destination details

Feedback
English (US)
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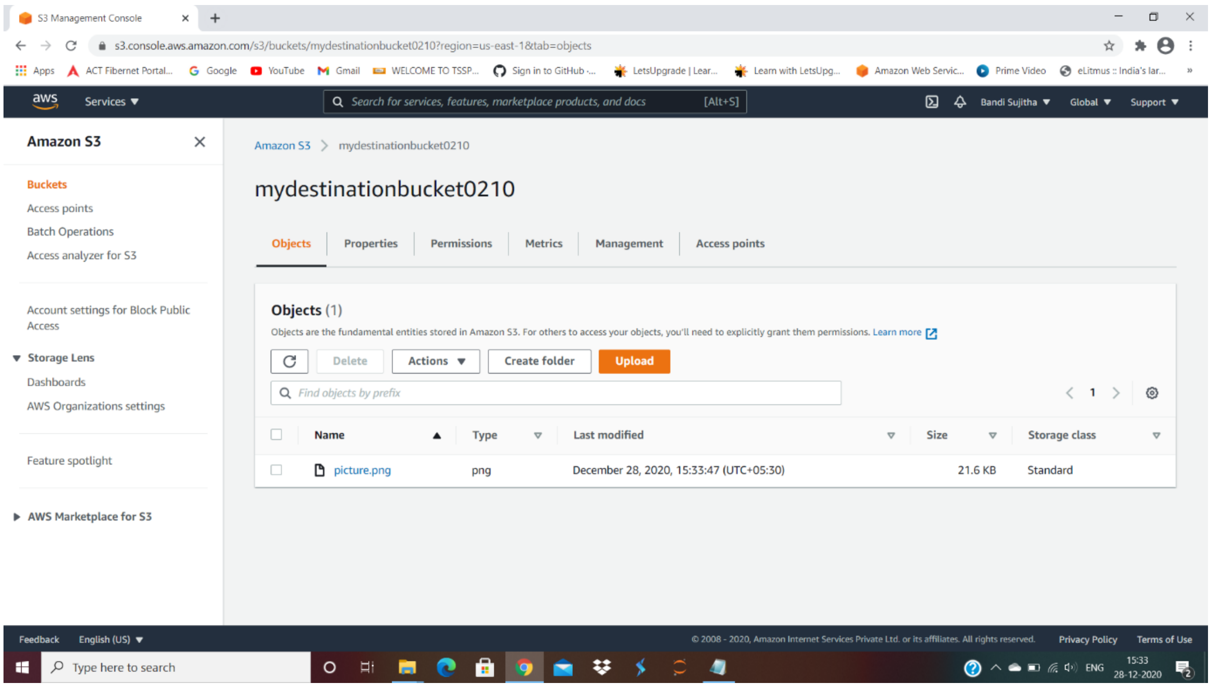
Privacy Policy
Terms of Use
Type here to search
15:31
28-12-2020

Ss10:object replicated in the destination bucket.


Amazon S3 > mydestinationbucket0210

mydestinationbucket0210

Objects (1)

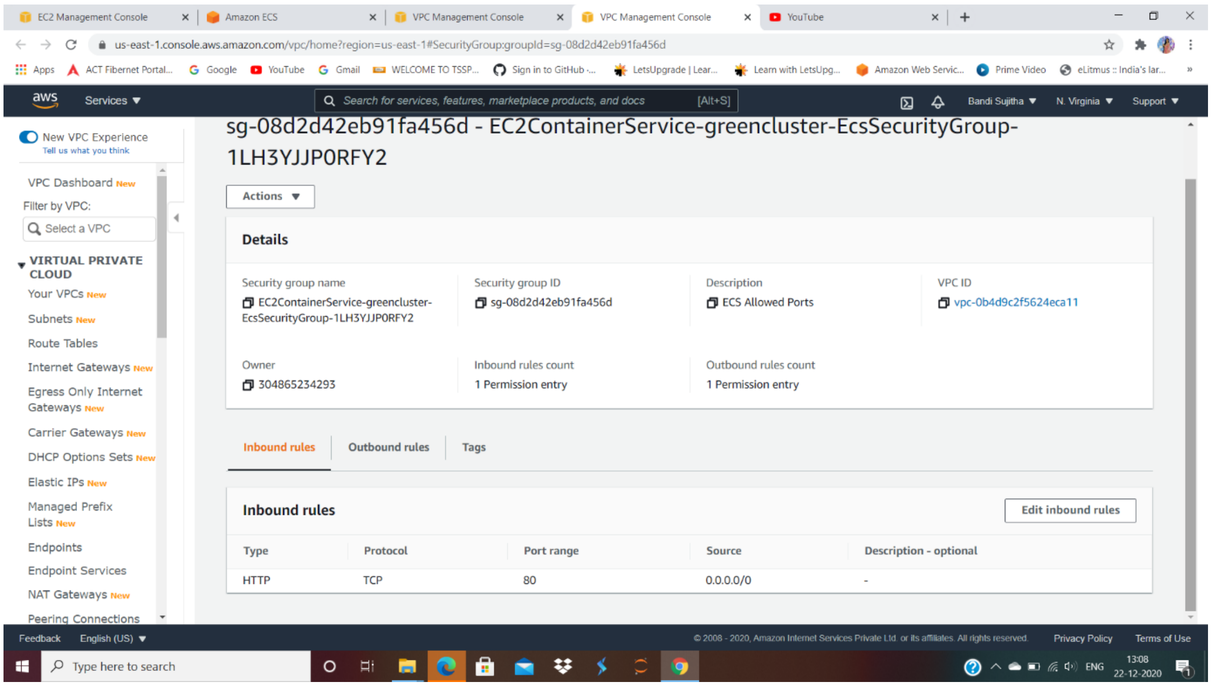
Objects are the fundamental entities stored in Amazon S3. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

| Name | Type | Last modified | Size | Storage class |
|---|---|---|---|---|
| picture.png | png | December 28, 2020, 15:33:47 (UTC+05:30) | 21.6 KB | Standard |

Question 2: Working with Elastic container service using fargate

Step1:Getting started with amazon ECS using fargate

Ss1:ECS console


sg-08d2d42eb91fa456d - EC2ContainerService-greencluster-EcsSecurityGroup-1LH3YJJPORFY2

Details

| Security group name | Security group ID | Description | VPC ID |
|---|---|---|---|
| EC2ContainerService-greencluster-EcsSecurityGroup-1LH3YJJPORFY2 | sg-08d2d42eb91fa456d | ECS Allowed Ports | vpc-0b4d9c2f5624eca11 |

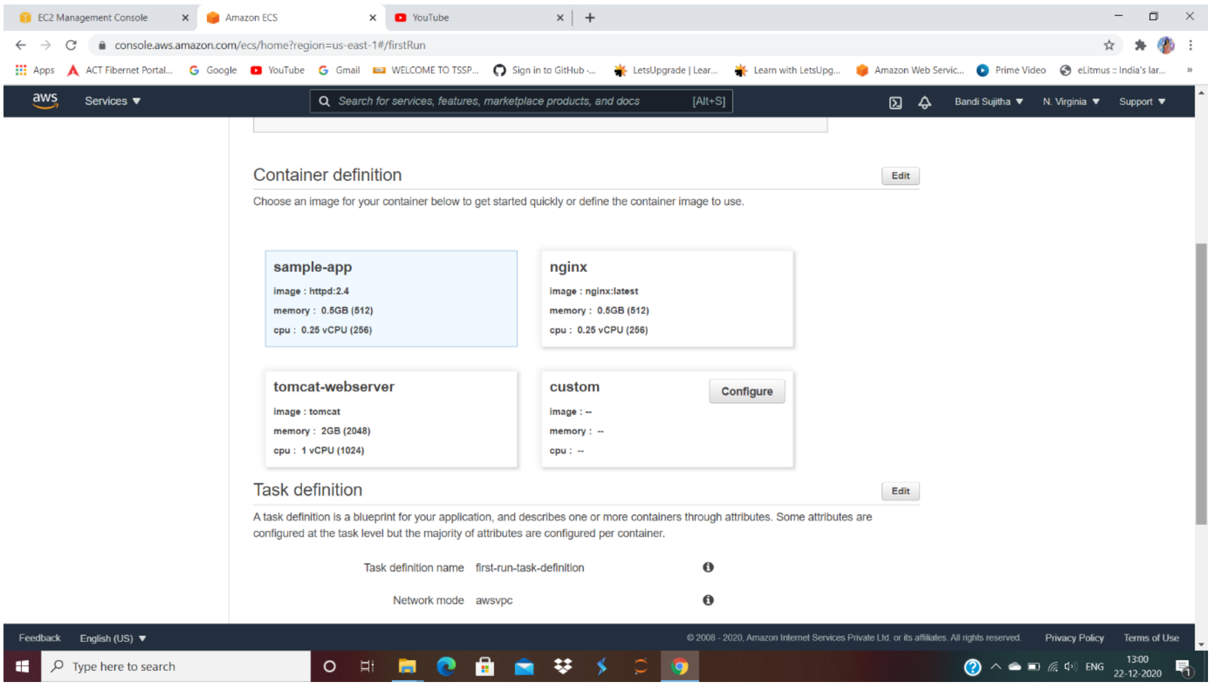
| Owner | Inbound rules count | Outbound rules count |
|---|---|---|
| 304865234293 | 1 Permission entry | 1 Permission entry |

Inbound rules

| Type | Protocol | Port range | Source | Description - optional |
|---|---|---|---|---|
| HTTP | TCP | 80 | 0.0.0.0/0 | - |

Step2:Creating container and task definition

Ss2:2nd panel with all options visible


Container definition

Choose an image for your container below to get started quickly or define the container image to use.

sample-app
image : httpd:2.4
memory : 0.5GB (512)
cpu : 0.25 vCPU (256)

nginx
image : nginx:latest
memory : 0.5GB (512)
cpu : 0.25 vCPU (256)

tomcat-webserver
image : tomcat
memory : 2GB (2048)
cpu : 1 vCPU (1024)

custom
image : --
memory : --
cpu : --

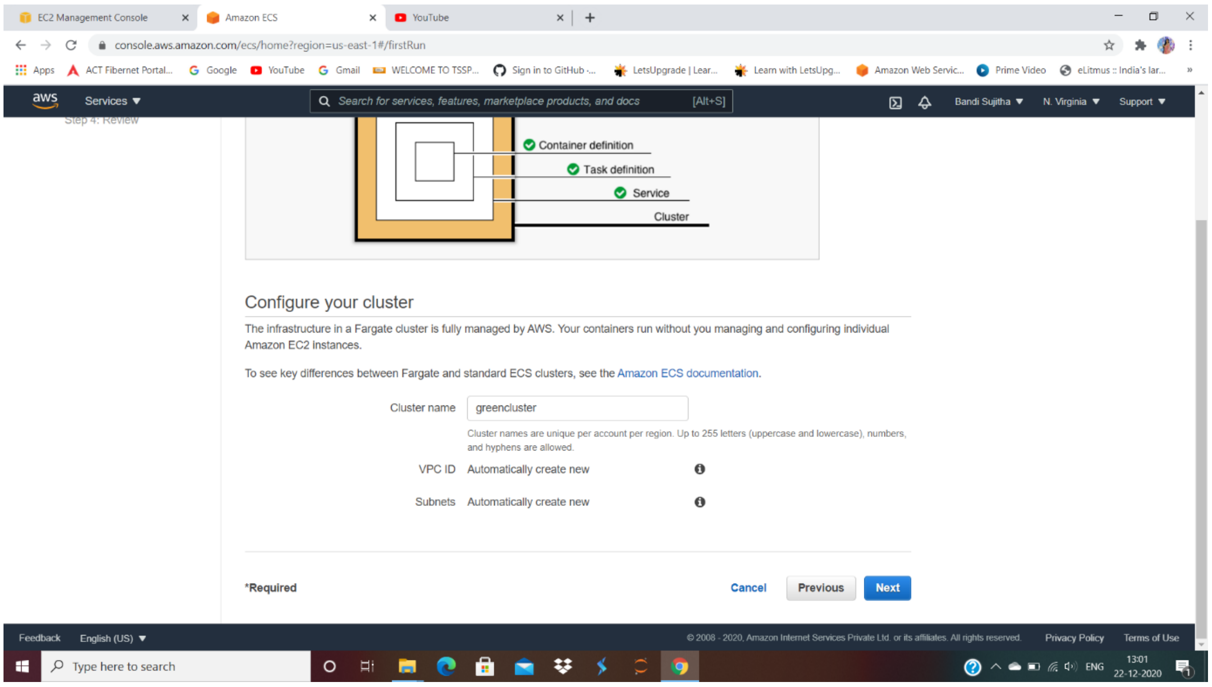
Task definition

A task definition is a blueprint for your application, and describes one or more containers through attributes. Some attributes are configured at the task level but the majority of attributes are configured per container.

| | |
|---|---|
| Task definition name | first-run-task-definition |
| Network mode | awsvpc |

Step4:Configuring the cluster

Ss4:next panel



Configure your cluster

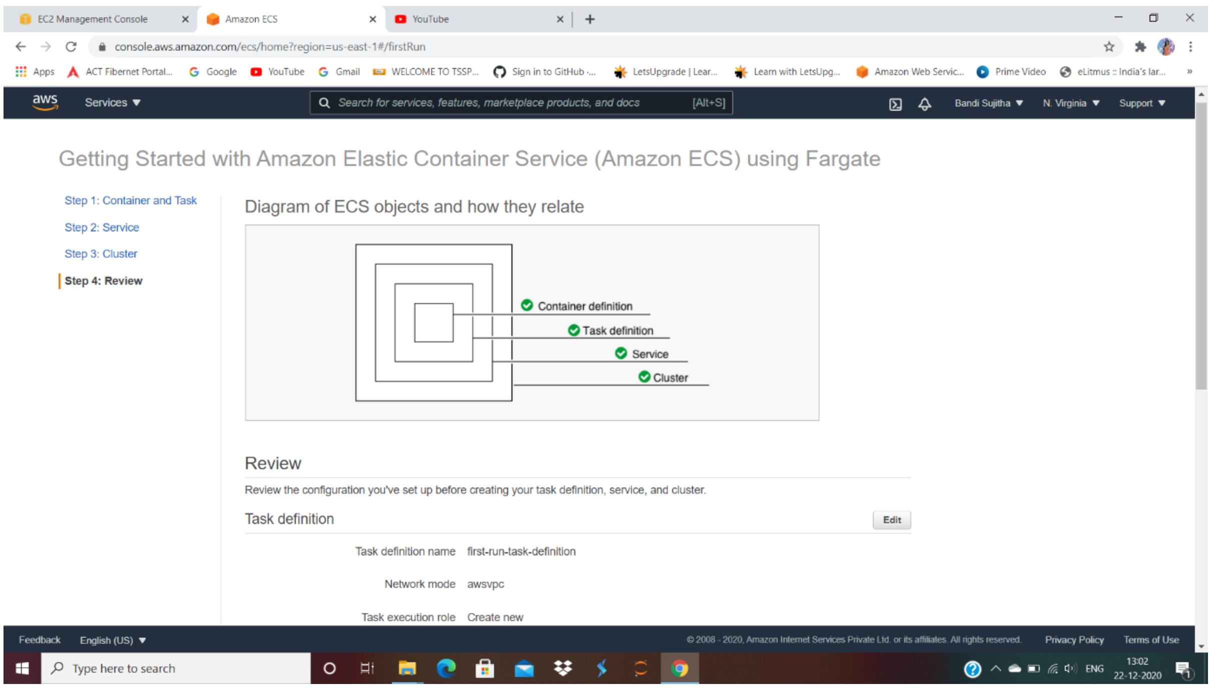
The infrastructure in a Fargate cluster is fully managed by AWS. Your containers run without you managing and configuring individual Amazon EC2 instances.

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

| | |
|---|---|
| Cluster name | greencluster |
| VPC ID | Automatically create new |
| Subnets | Automatically create new |

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

*Required


Getting Started with Amazon Elastic Container Service (Amazon ECS) using Fargate

Step 1: Container and Task
Step 2: Service
Step 3: Cluster
Step 4: Review

Diagram of ECS objects and how they relate

Review

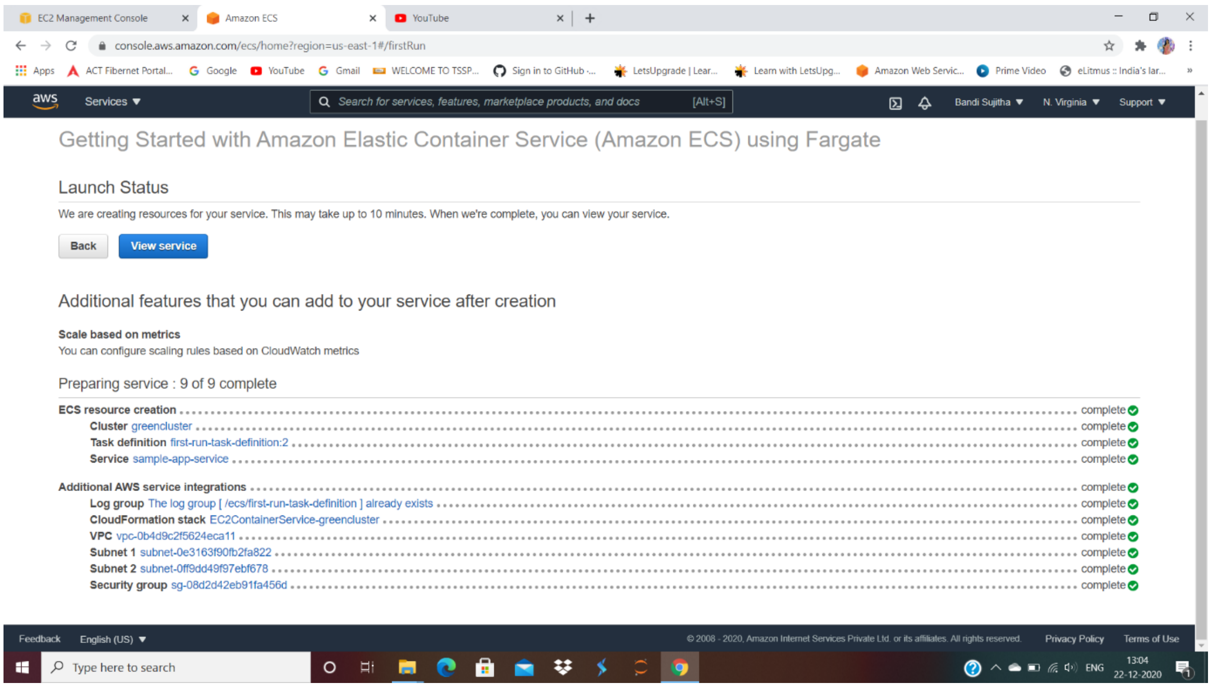
Review the configuration you've set up before creating your task definition, service, and cluster.

Task definition

| | |
|---|---|
| Task definition name | first-run-task-definition |
| Network mode | awsvpc |
| Task execution role | Create new |

Step5:Viewing the service

Ss5:Dashboard displaying the cluster created


Getting Started with Amazon Elastic Container Service (Amazon ECS) using Fargate

Launch Status

We are creating resources for your service. This may take up to 10 minutes. When we're complete, you can view your service.

Additional features that you can add to your service after creation

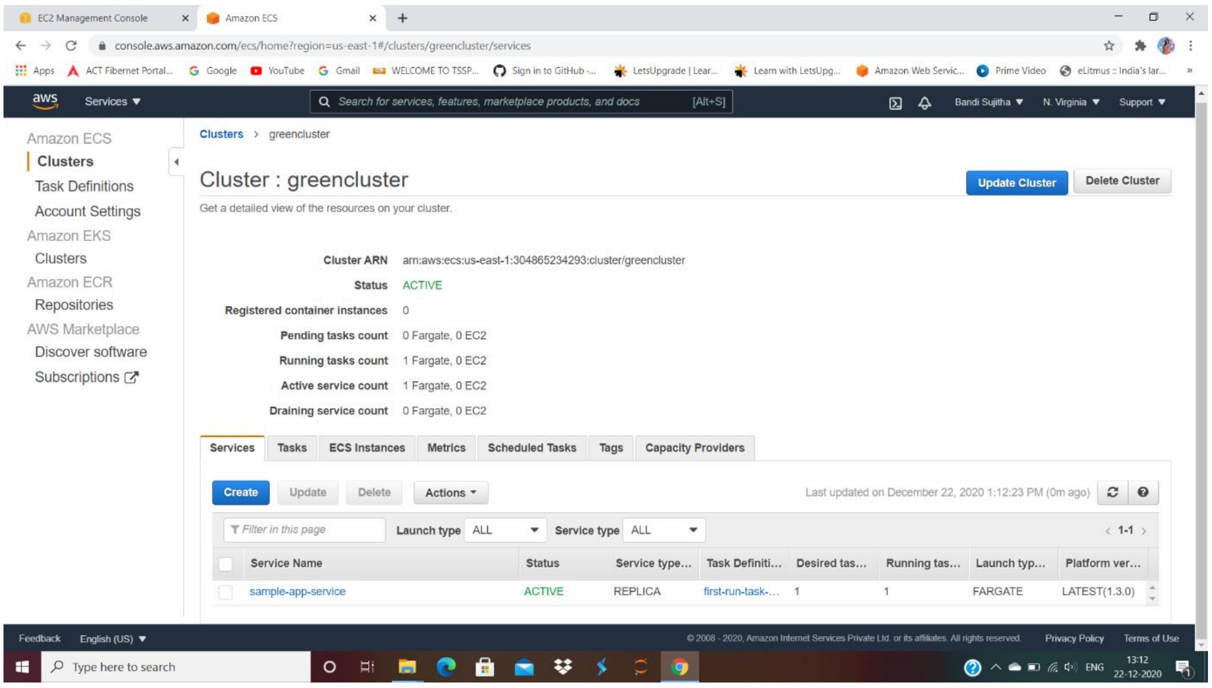
**Scale based on metrics**
You can configure scaling rules based on CloudWatch metrics

Preparing service : 9 of 9 complete

```
ECS resource creation ........................................ complete
    Cluster greencluster ..................................... complete
    Task definition first-run-task-definition:2 .............. complete
    Service sample-app-service ............................... complete

Additional AWS service integrations .......................... complete
    Log group The log group [ /ecs/first-run-task-definition ] already exists ... complete
    CloudFormation stack EC2ContainerService-greencluster .... complete
    VPC vpc-0b4d9c2f5624eca11 ................................ complete
    Subnet 1 subnet-0e3163f90fb2fa822 ........................ complete
    Subnet 2 subnet-0ff9dd49f97ebf678 ........................ complete
    Security group sg-08d2d42eb91fa456d ...................... complete
```

## Ss6:Cluster information



Clusters > greencluster

Cluster : greencluster

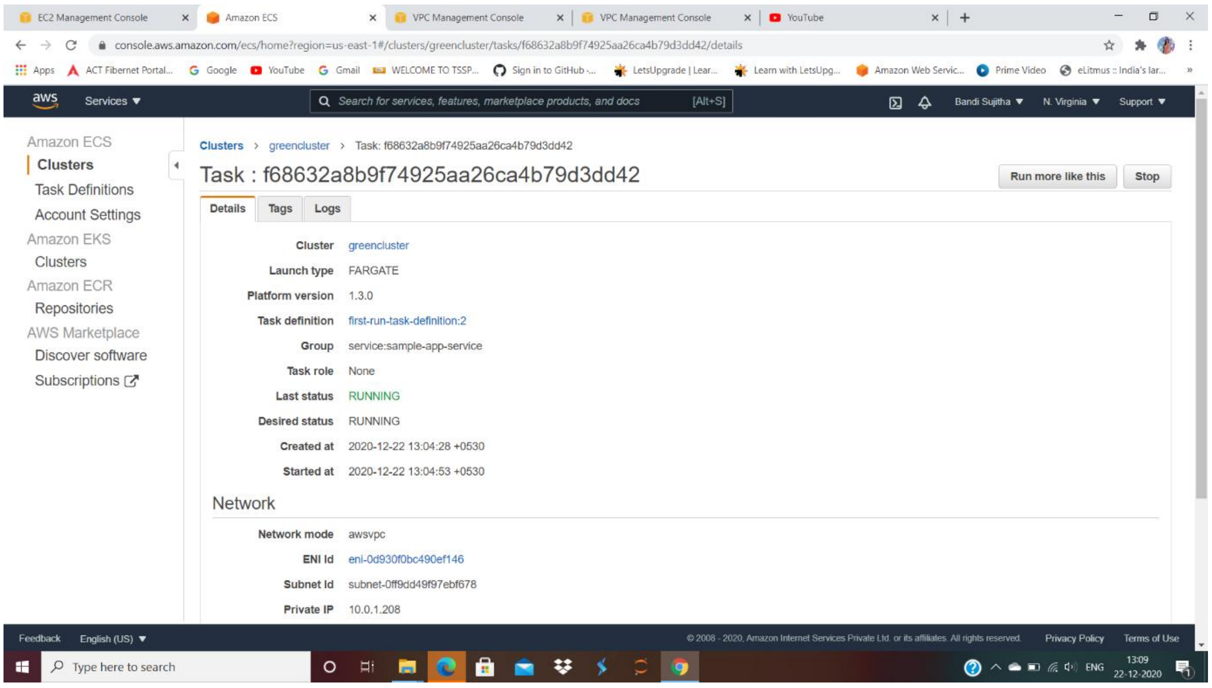
Get a detailed view of the resources on your cluster.

| | |
|---|---|
| Cluster ARN | arn:aws:ecs:us-east-1:304865234293:cluster/greencluster |
| Status | ACTIVE |
| Registered container instances | 0 |
| Pending tasks count | 0 Fargate, 0 EC2 |
| Running tasks count | 1 Fargate, 0 EC2 |
| Active service count | 1 Fargate, 0 EC2 |
| Draining service count | 0 Fargate, 0 EC2 |

Last updated on December 22, 2020 1:12:23 PM (0m ago)

| Service Name | Status | Service type... | Task Definiti... | Desired tas... | Running tas... | Launch typ... | Platform ver... |
|---|---|---|---|---|---|---|---|
| sample-app-service | ACTIVE | REPLICA | first-run-task-... | 1 | 1 | FARGATE | LATEST(1.3.0) |

## Ss7:Panel displaying ENI ID



Clusters > greencluster > Task: f68632a8b9f74925aa26ca4b79d3dd42

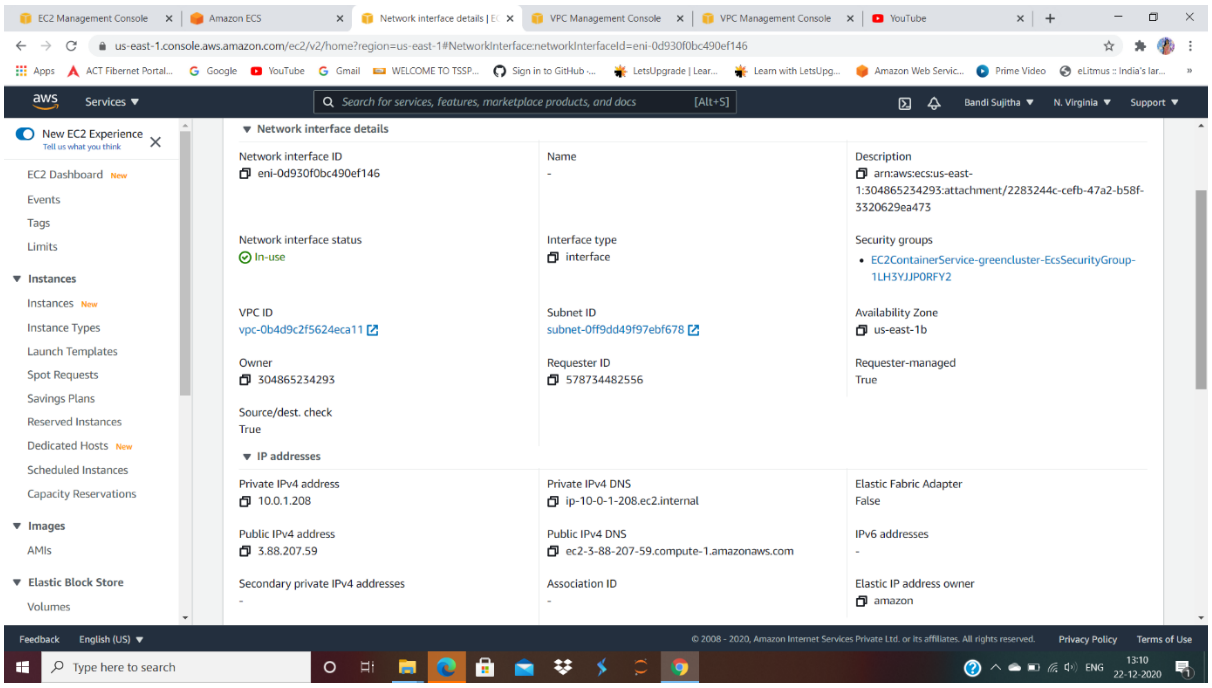
Task : f68632a8b9f74925aa26ca4b79d3dd42

| | |
|---|---|
| Cluster | greencluster |
| Launch type | FARGATE |
| Platform version | 1.3.0 |
| Task definition | first-run-task-definition:2 |
| Group | service:sample-app-service |
| Task role | None |
| Last status | RUNNING |
| Desired status | RUNNING |
| Created at | 2020-12-22 13:04:28 +0530 |
| Started at | 2020-12-22 13:04:53 +0530 |

Network

| | |
|---|---|
| Network mode | awsvpc |
| ENI Id | eni-0d930f0bc490ef146 |
| Subnet Id | subnet-0ff9dd49f97ebf678 |
| Private IP | 10.0.1.208 |

Ss8:Panel displaying the private, public, and the macid



us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#NetworkInterface:networkInterfaceId=eni-0d930f0bc490ef146

Network interface details

| | | |
|---|---|---|
| Network interface ID<br>eni-0d930f0bc490ef146 | Name<br>- | Description<br>arn:aws:ecs:us-east-1:304865234293:attachment/2283244c-cefb-47a2-b58f-3320629ea473 |
| Network interface status<br>In-use | Interface type<br>interface | Security groups<br>EC2ContainerService-greencluster-EcsSecurityGroup-1LH3YJJPORFY2 |
| VPC ID<br>vpc-0b4d9c2f5624eca11 | Subnet ID<br>subnet-0ff9dd49f97ebf678 | Availability Zone<br>us-east-1b |
| Owner<br>304865234293 | Requester ID<br>578734482556 | Requester-managed<br>True |
| Source/dest. check<br>True | | |

IP addresses

| | | |
|---|---|---|
| Private IPv4 address<br>10.0.1.208 | Private IPv4 DNS<br>ip-10-0-1-208.ec2.internal | Elastic Fabric Adapter<br>False |
| Public IPv4 address<br>3.88.207.59 | Public IPv4 DNS<br>ec2-3-88-207-59.compute-1.amazonaws.com | IPv6 addresses<br>- |
| Secondary private IPv4 addresses<br>- | Association ID<br>- | Elastic IP address owner<br>amazon |

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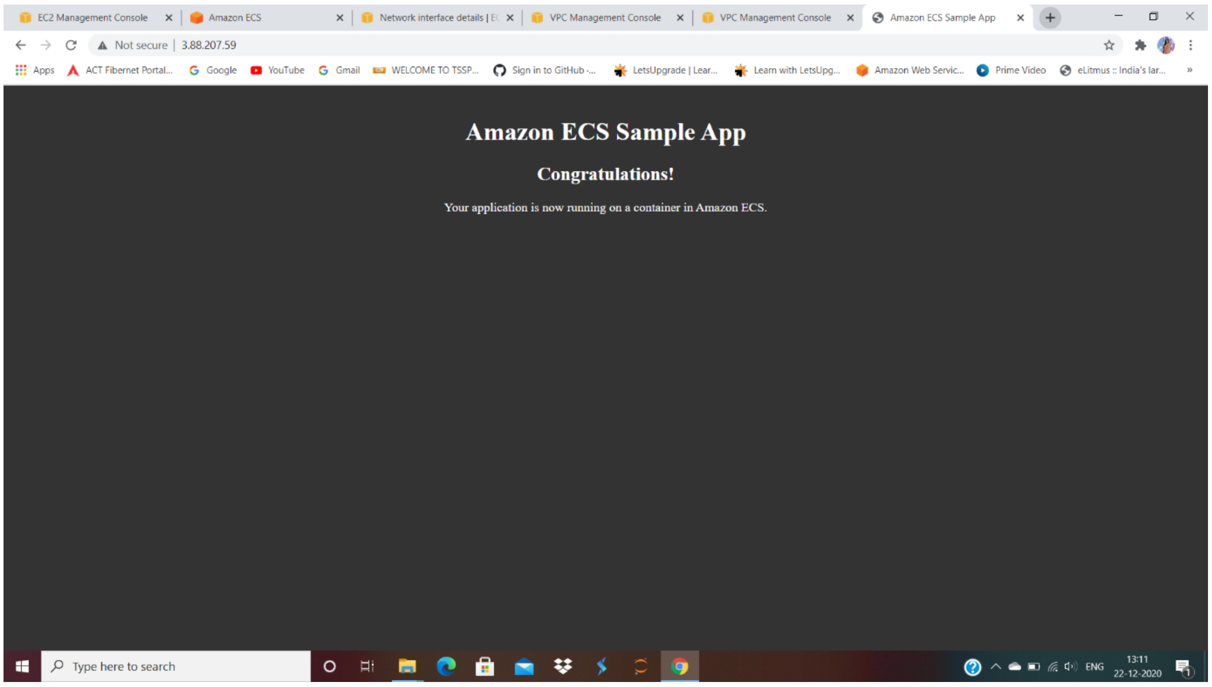
13:10 22-12-2020

Ss9:Display application



Not secure | 3.88.207.59

Amazon ECS Sample App

Congratulations!

Your application is now running on a container in Amazon ECS.

13:11 22-12-2020