

# PROJECT 1: Working with IAM Roles with S3 and bootstrapping with EC2

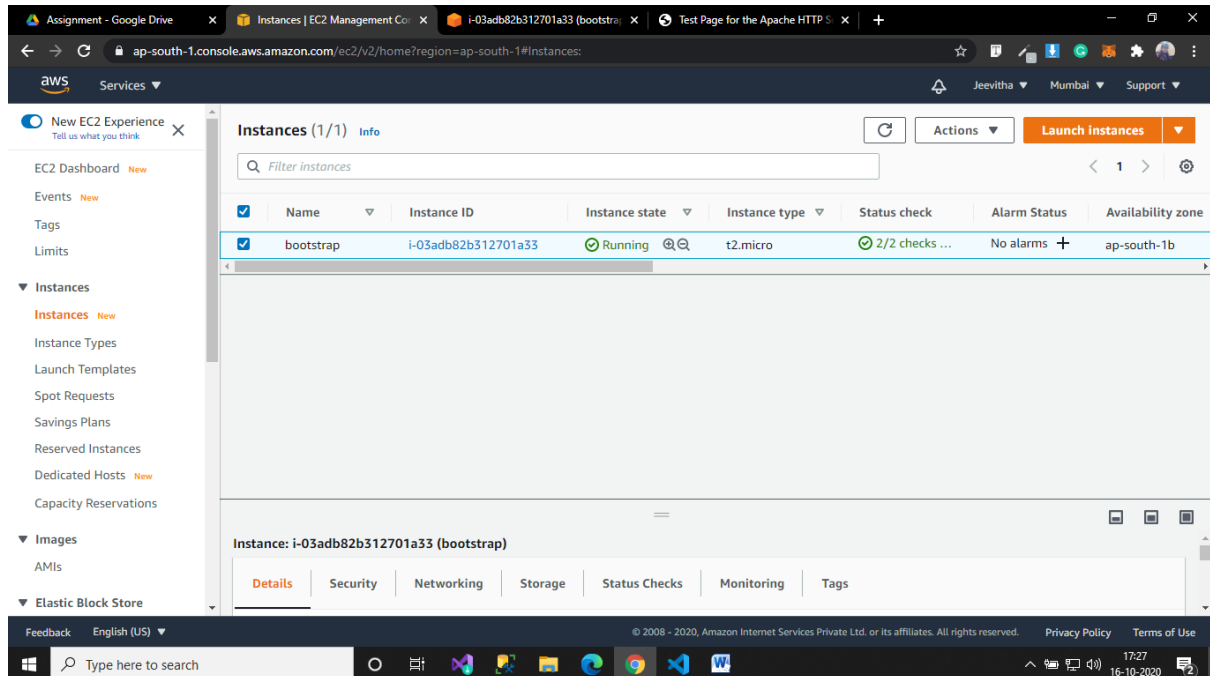
## Task1: Creating a bootstrapped instance

SS1: edit user data

```
#!/bin/bash
```

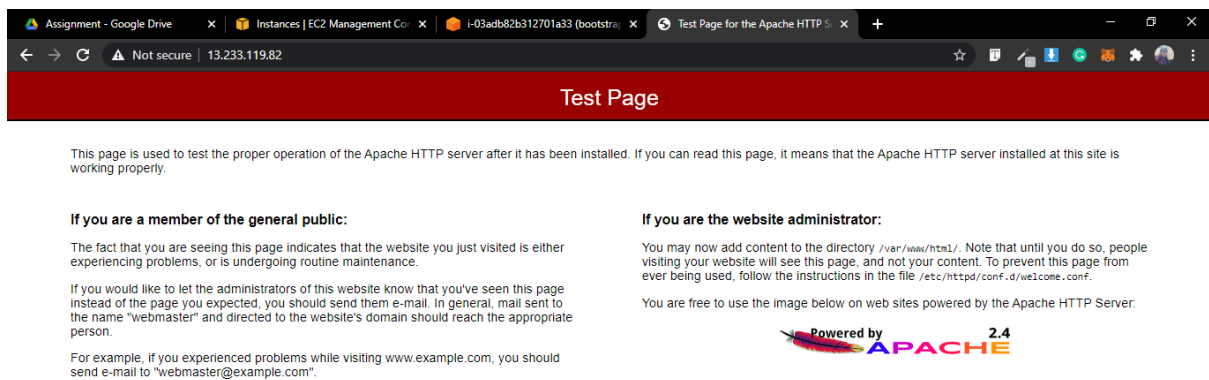
```
yum -y install httpd
```

```
service httpd start
```



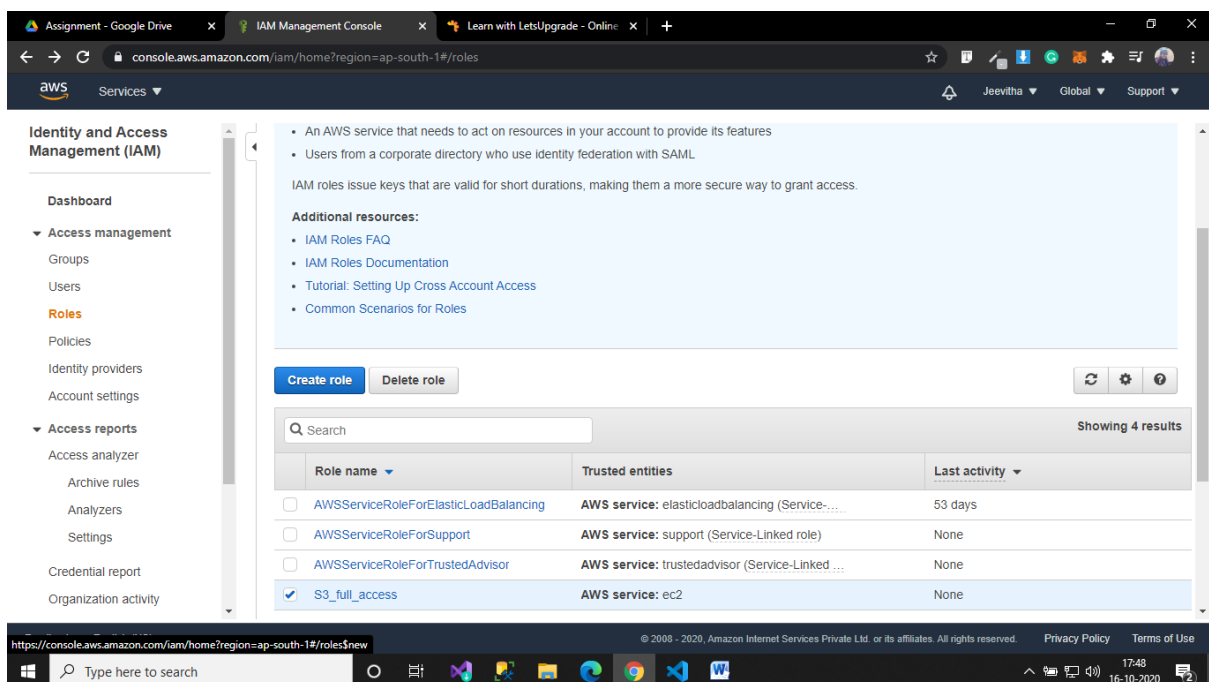


## Ss3: test page



## Task 2: Checking bucket list and creating a new bucket from EC2 using IAM ROLES

### Ss1: Create IAM Role



## Ss2: Choose EC2 in use case

**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
- KMS
- Rekognition
- AWS Backup
- CodeBuild
- EMR
- Kinesis
- RoboMaker

\* Required

Cancel Next: Permissions

## Ss3: Select AmazonS3FullAccess in permission policies

**Create role**

1 2 3 4

▼ Attach permissions policies

Choose one or more policies to attach to your new role.

Create policy

Filter policies s3 Showing 6 results

	Policy name	Used as
<input type="checkbox"/>	AmazonDMSRedshiftS3Role	None
<input checked="" type="checkbox"/>	AmazonS3FullAccess	None
<input type="checkbox"/>	AmazonS3OutpostsFullAccess	None
<input type="checkbox"/>	AmazonS3OutpostsReadOnlyAccess	None
<input type="checkbox"/>	AmazonS3ReadOnlyAccess	None
<input type="checkbox"/>	QuickSightAccessForS3StorageManagementAnalyticsReadOnly	None

\* Required

Cancel Previous Next: Tags

Ss4: Enter Role name as S3\_full\_access and create role.

The screenshot shows the 'Create role' page in the AWS IAM console, specifically the 'Review' step. The page has a progress indicator at the top right with steps 1, 2, 3, and 4, where 4 is the active step. The 'Role name' field contains 'S3\_full\_access'. The 'Role description' field contains 'Allows EC2 instances to call AWS services on your behalf.' The 'Trusted entities' field shows 'AWS service: ec2.amazonaws.com'. The 'Policies' section shows 'AmazonS3FullAccess'. The 'Permissions boundary' is 'Permissions boundary is not set'. At the bottom, there are 'Cancel', 'Previous', and 'Create role' buttons. The footer includes 'Feedback', 'English (US)', and copyright information.

Create role

Review

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

Role name\*

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

Role description

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

Trusted entities AWS service: ec2.amazonaws.com

Policies AmazonS3FullAccess

Permissions boundary Permissions boundary is not set

The new role will receive the following tag

\* Required

Cancel Previous Create role

The screenshot shows the 'Roles' page in the AWS IAM console. A green notification box at the top states 'The role S3\_full\_access has been created.' Below this, there are 'Create role' and 'Delete role' buttons. A search bar is present, and a table displays the results. The table has columns for 'Role name', 'Trusted entities', and 'Last activity'. Two roles are listed: 'AWSServiceRoleForElasticLoadBalancing' and 'AWSServiceRoleForSupport'. The footer includes 'Feedback', 'English (US)', and copyright information.

Identity and Access Management (IAM)

Dashboard

Access management

Groups

Users

**Roles**

Policies

Identity providers

Account settings

Access reports

Access analyzer

Archive rules

Analysts

Settings

Credential report

Organization activity

The role S3\_full\_access has been created.

Create role Delete role

Search

Showing 4 results

Role name	Trusted entities	Last activity
<input type="checkbox"/> AWSServiceRoleForElasticLoadBalancing	AWS service: elasticloadbalancing (Service-Linked role)	53 days
<input type="checkbox"/> AWSServiceRoleForSupport	AWS service: support (Service-Linked role)	None

## Ss5: Create EC2 instance with S3\_full\_access (IAM Role).

The screenshot shows the 'Step 3: Configure Instance Details' page of the AWS Launch Instance Wizard. The page is titled 'Step 3: Configure Instance Details' and includes a sub-header 'Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.'

The configuration options are as follows:

- Number of instances:** 1 (with a link to 'Launch into Auto Scaling Group')
- Purchasing option:** ☐ Request Spot instances
- Network:** vpc-f936d292 (default) (with a link to 'Create new VPC')
- Subnet:** No preference (default subnet in any Availability Zone) (with a link to 'Create new subnet')
- Auto-assign Public IP:** Use subnet setting (Enable)
- Placement group:** ☐ Add instance to placement group
- Capacity Reservation:** Open
- Domain join directory:** No directory (with a link to 'Create new directory')
- IAM role:** S3\_full\_access (with a link to 'Create new IAM role')

The 'IAM role' dropdown menu is open, showing the following options: None, S3\_full\_access, and S3\_full\_access (selected).

At the bottom of the wizard, there are buttons for 'Cancel', 'Previous', 'Review and Launch', and 'Next: Add Storage'.

## Ss6: list of ec2 instances with description

The screenshot shows the 'Connect to instance' page in the AWS Management Console. The page is titled 'Connect to instance' and includes a sub-header 'Connect to your instance i-072193847dd329424 (IAM) using any of these options'.

The page displays the following information:

- Instance ID:** i-072193847dd329424 (IAM)
- Public IP address:** 3.7.69.151
- User name:** ec2-user

Below the user name, there is a note: 'Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.'

The page also includes a 'Connect to instance' button and a 'Session Manager' button.

A screenshot of a terminal window running on an Amazon Linux 2 instance. The terminal shows the following sequence of events:

- A logo made of underscores and pipes.
- The text "Amazon Linux 2 AMI".
- The URL "https://aws.amazon.com/amazon-linux-2/" followed by the message "2 package(s) needed for security, out of 13 available".
- The instruction "Run 'sudo yum update' to apply all updates."
- The user runs "sudo su" to become root.
- The user runs "aws s3 ls" and receives the output "2020-10-16 12:49:50 jeevil23456".
- The user runs "aws s3 mb s3://Assignment123".
- An error message: "make\_bucket failed: s3://Assignment123 An error occurred (InvalidBucketName) when calling the CreateBucket operation: The specified bucket is not valid."
- The prompt returns to the user "ec2-user@ip-172-31-11-227 ec2-user]#".

The terminal window has a title bar with browser tabs for "Assignment - Google Drive", "S3 Management Console", and "i-072193847dd329424 (IAM)". The address bar shows the console URL. The system tray at the bottom indicates the time as 18:25 on 16-10-2020.

Assignment - Google Drive

S3 Management Console

i-072193847dd329424 (IAM) | EC2

Learn with LetsUpgrade - Online

s3.console.aws.amazon.com/s3/home?region=ap-south-1

aws Services

Access S3-backed file shares on premises and reduce local storage costs using AWS Storage Gateway. [Learn more »](#) [Documentation](#)

We've temporarily re-enabled the previous version of the S3 console while we continue to improve the new S3 console experience. [Switch to the new console.](#)

S3 buckets [Discover the console](#)

Search for buckets All access types

+ Create bucket Edit public access settings Empty Delete

1 Buckets 1 Regions

Bucket name	Access	Region	Date created
<input type="checkbox"/> jeevi123456	Bucket and objects not public	Asia Pacific (Mumbai)	Oct 16, 2020 6:19:50 PM GMT+0530

Feedback English (US)

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Type here to search

18:23 16-10-2020

```
Assignment - Google Drive x S3 Management Console x i-072193847dd329424 (IAM) | EC x Learn with LetsUpgrade - Online x +
ap-south-1.console.aws.amazon.com/ec2/v2/connect/ec2-user/i-072193847dd329424
Last login: Fri Oct 16 12:48:21 2020 from ec2-13-233-177-1.ap-south-1.compute.amazonaws.com

  _ _ _ _ _
 _ _ _ _ _ /
 _ _ _ _ _

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
2 package(s) needed for security, out of 13 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-11-227 ~]$ sudo su
[root@ip-172-31-11-227 ec2-user]# aws s3 ls
2020-10-16 12:49:50 jeevi123456
[root@ip-172-31-11-227 ec2-user]# aws s3 mb s3://Assignment123
make_bucket failed: s3://Assignment123 An error occurred (InvalidBucketName) when calling the CreateBucket operation: The
specified bucket is not valid.
[root@ip-172-31-11-227 ec2-user]# aws s3 mb s3://assignment123
make_bucket failed: s3://assignment123 An error occurred (BucketAlreadyExists) when calling the CreateBucket operation: Th
e requested bucket name is not available. The bucket namespace is shared by all users of the system. Please select a diffe
rent name and try again.
[root@ip-172-31-11-227 ec2-user]# aws s3 mb s3://assign12345
make_bucket: assign12345
[root@ip-172-31-11-227 ec2-user]#
```

i-072193847dd329424 (IAM)

Public IPs: 3.7.69.151 Private IPs: 172.31.11.227



Assignment - Google Drive x S3 Management Console x i-072193847dd329424 (IAM) | EC x Learn with LetsUpgrade - Online x +

s3.console.aws.amazon.com/s3/home?region=ap-south-1

aws Services

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We've temporarily re-enabled the previous version of the S3 console while we continue to improve the new S3 console experience. [Switch to the new console.](#)

S3 buckets [Discover the console](#)

Search for buckets All access types

+ Create bucket Edit public access settings Empty Delete

2 Buckets 2 Regions

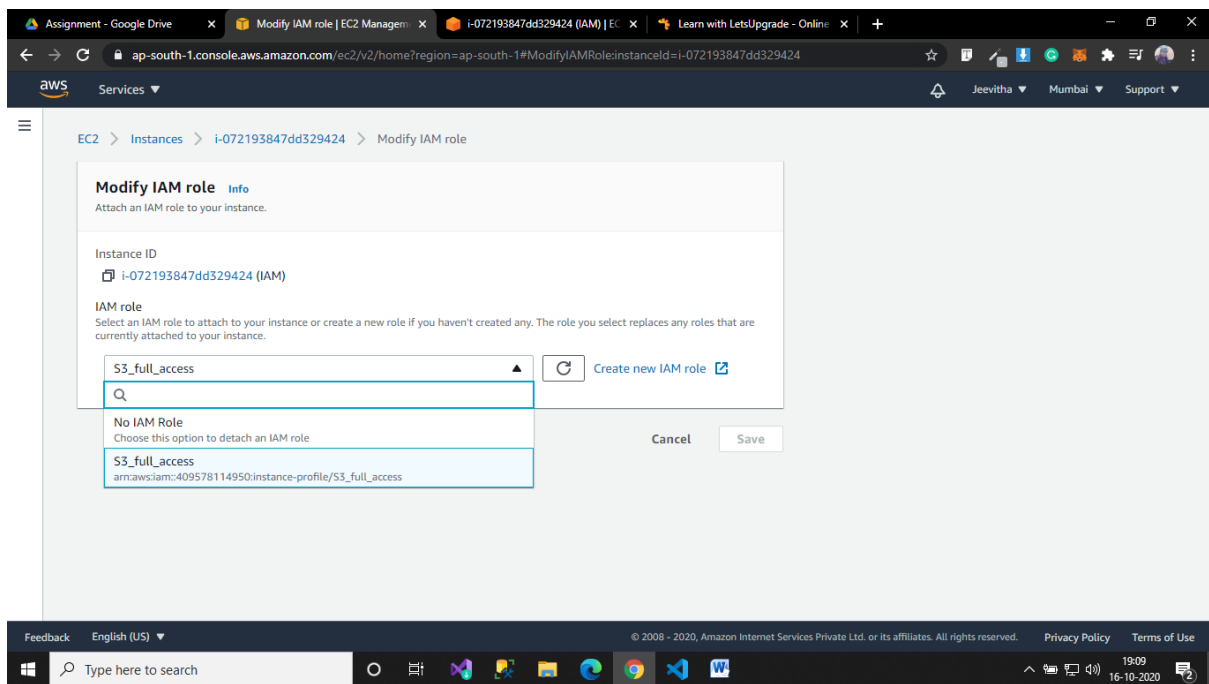
Bucket name	Access	Region	Date created
<input type="checkbox"/> assign12345	Objects can be public	US East (N. Virginia)	Oct 16, 2020 6:27:17 PM GMT+0530
<input type="checkbox"/> jeevi123456	Bucket and objects not public	Asia Pacific (Mumbai)	Oct 16, 2020 6:19:50 PM GMT+0530

Feedback English (US) © 2008 - 2020, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use

18:27 16-10-2020

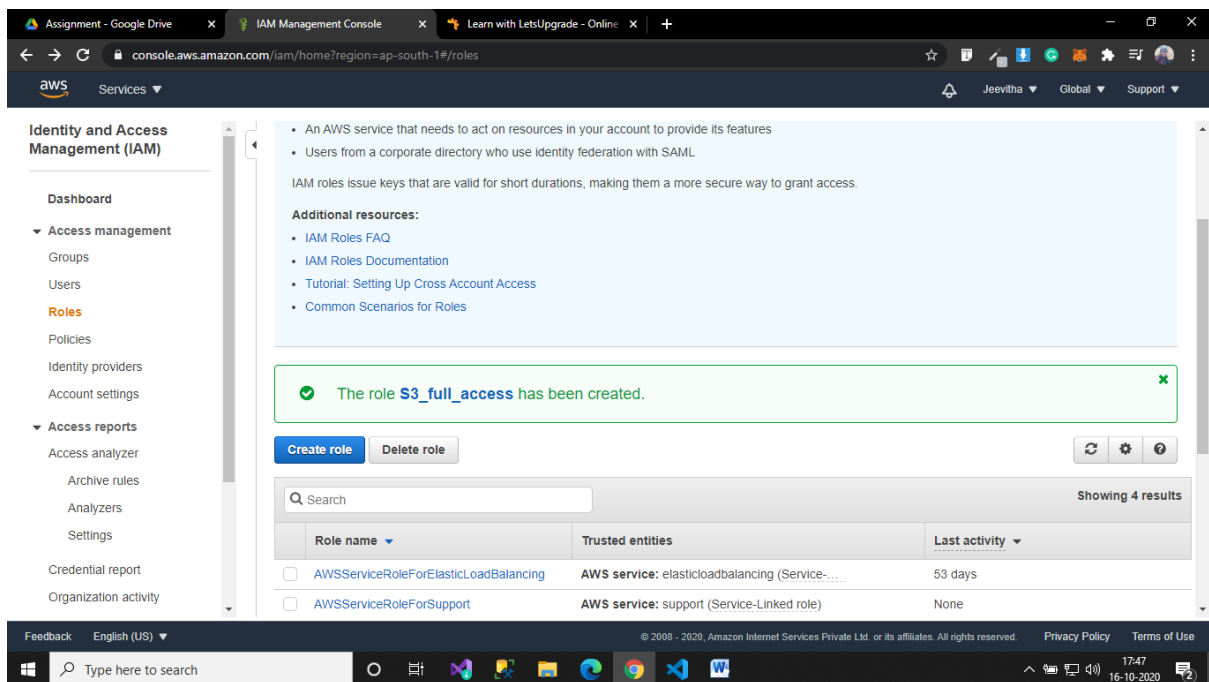


## Ss8: Modify the IAM Role.

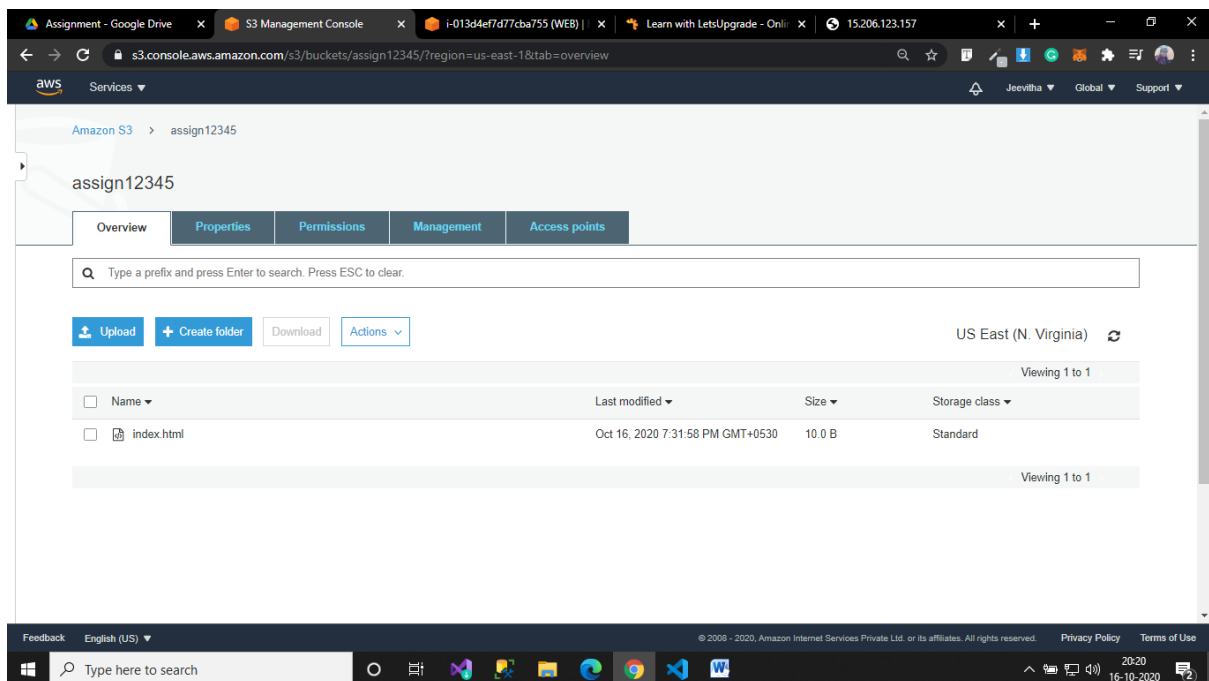


## Task 3: Hosting a webpage using the bootstrap script on ec2.

### Ss1: Create IAM Role EC2 with S3

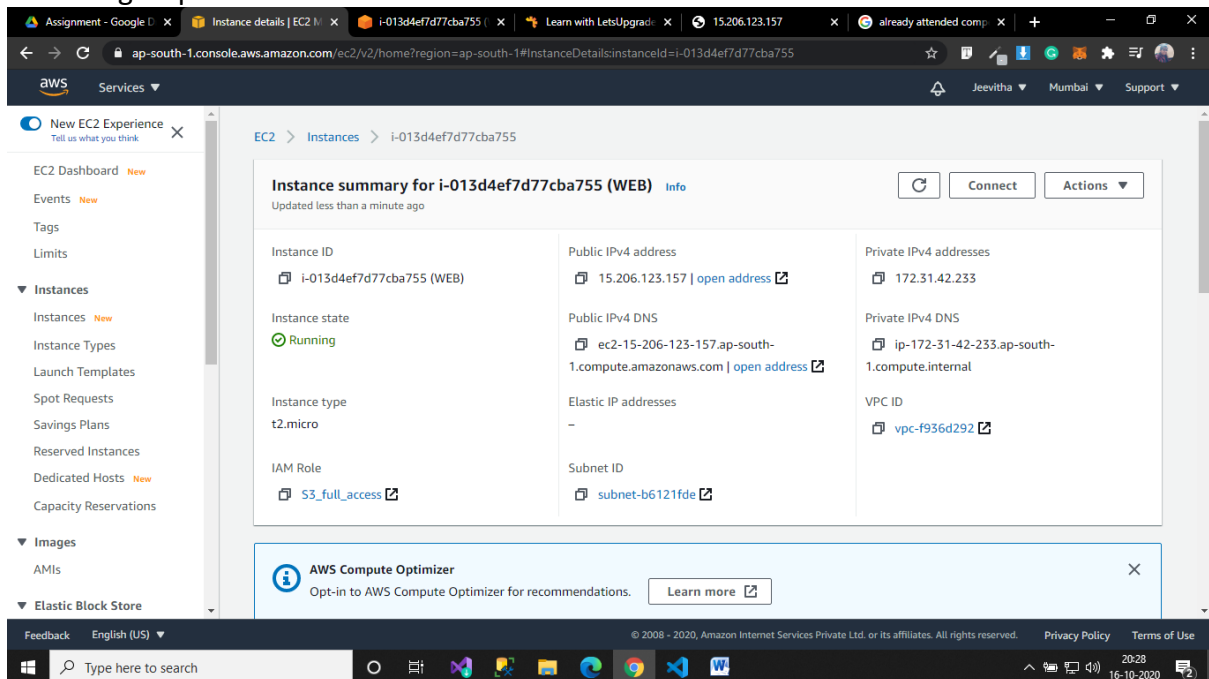


Ss2: Create s3 bucket as assign12345, upload index.html inside the bucket.

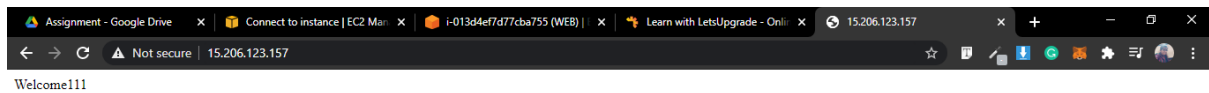


Ss3: Create EC2 instance and add user data with created IAM Role.

```
#!/bin/bash
yum install httpd -y
aws s3 cp s3://assign12345/index.html /var/www/html
service httpd start
chkconfig httpd on
```



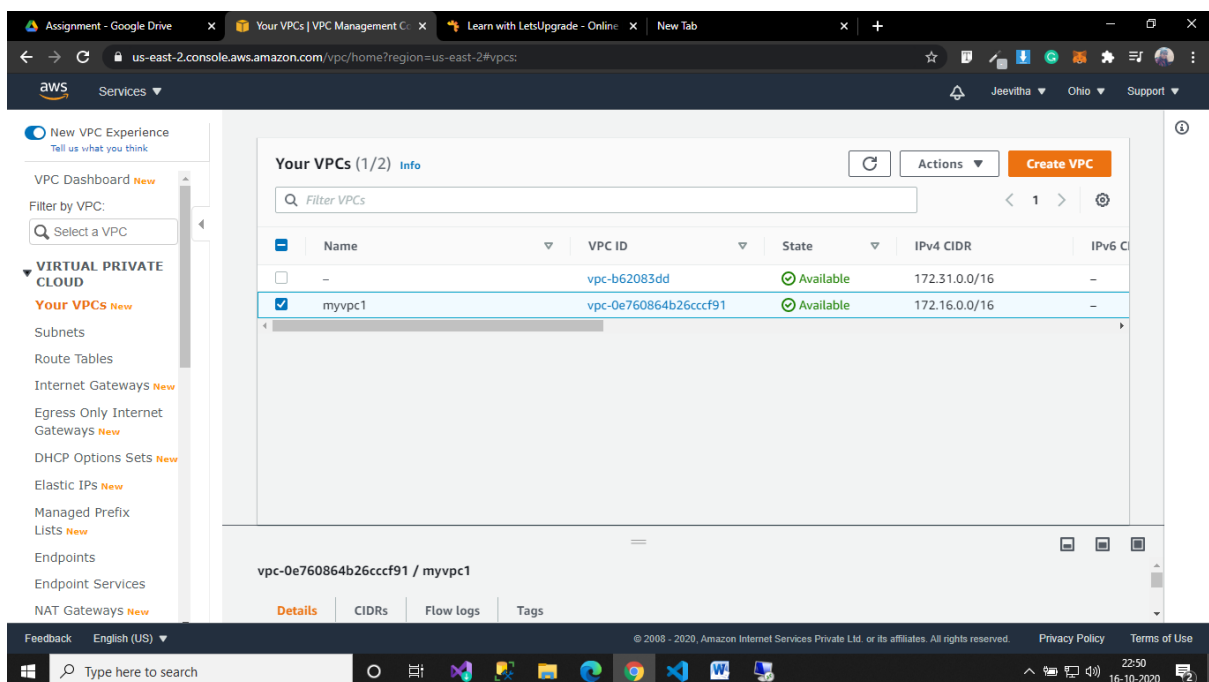
## Ss4: Test the page with public ip



## PROJECT 2: Creating an EC2 instance in custom VPC

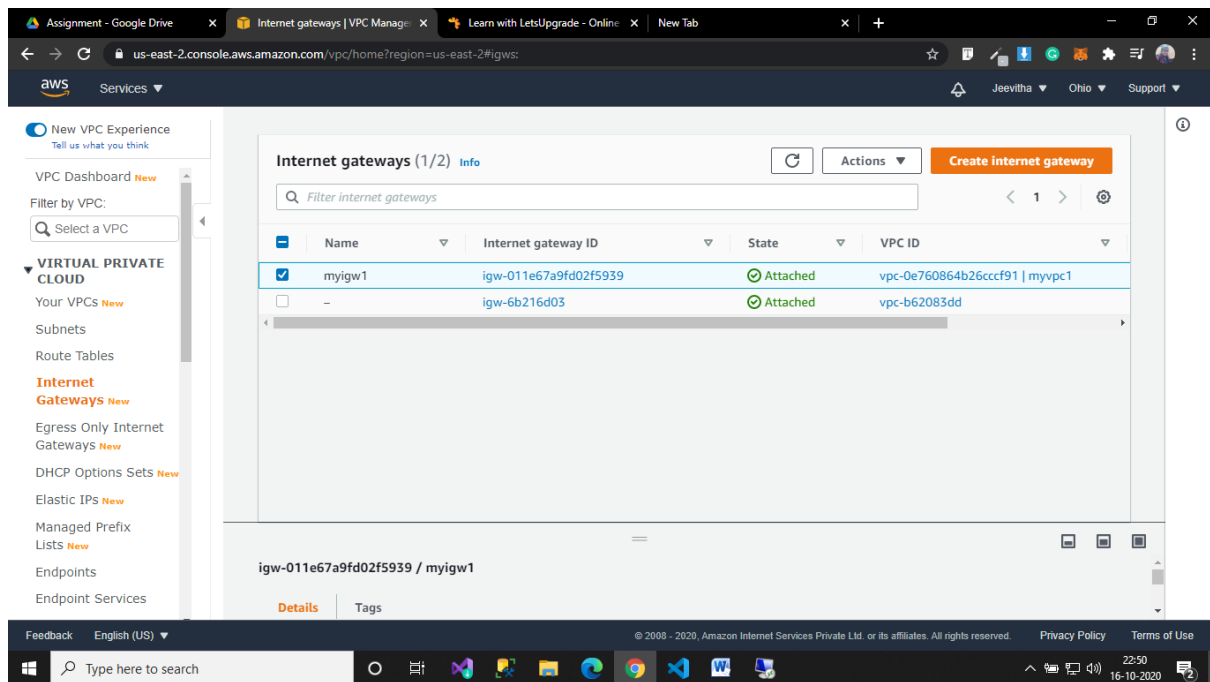
### Task1: Create a VPC

#### Ss1: vpc created



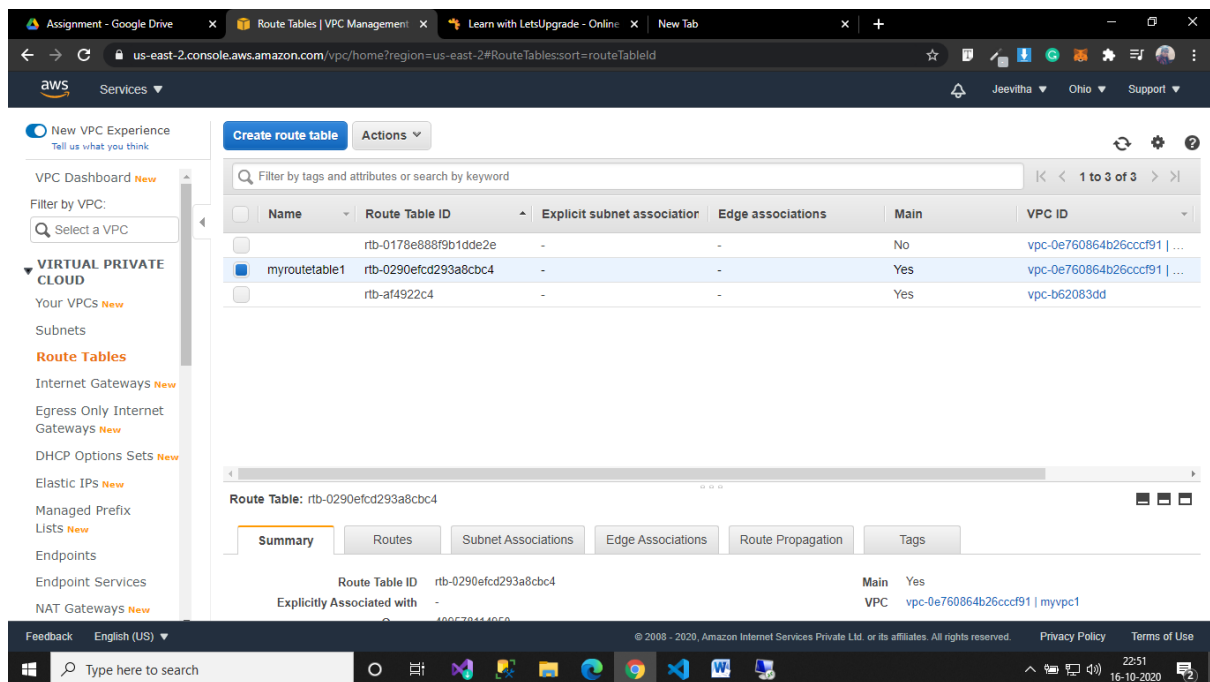
## Task 2: Create an Internet gateway

### Ss2: igw with vpc associated



## Task3: Create a route table

### Ss3: route table with routes



## Task4: Create a subnet

### Ss4: subnet screen

The screenshot shows the AWS VPC console. On the left, the navigation pane includes 'VIRTUAL PRIVATE CLOUD', 'Subnets', 'Route Tables', 'Internet Gateways', 'Egress Only Internet Gateways', 'DHCP Options Sets', 'Elastic IPs', 'Managed Prefix Lists', 'Endpoints', 'Endpoint Services', and 'NAT Gateways'. The main area displays a table of subnets:

Name	Subnet ID	State	VPC	IPv4 CIDR	Available IPv4	IPv6 CIDR	Av
mysubnet1	subnet-0033d02dc9a203f85	available	vpc-0e760864b26cccf91   ...	172.16.0.0/24	250	-	us-
	subnet-418de50d	available	vpc-b62083dd	172.31.32.0/20	4091	-	us-
	subnet-860d0dfc	available	vpc-b62083dd	172.31.16.0/20	4091	-	us-
	subnet-fe844e95	available	vpc-b62083dd	172.31.0.0/20	4091	-	us-

Below the table, the details for 'Subnet: subnet-0033d02dc9a203f85' are shown. The 'Description' tab is active, displaying the Subnet ID (subnet-0033d02dc9a203f85), VPC (vpc-0e760864b26cccf91 | myvpc1), State (available), and IPv4 CIDR (172.16.0.0/24).

## Task5: Create an EC2 in custom vpc

### Ss5: ec2 dashboard

The screenshot shows the AWS EC2 console. A blue banner at the top reads: 'Welcome to the new instances experience! We're redesigning the EC2 console to make it easier to use. To switch between the old console and the new console, use the New EC2 Experience toggle above the navigation panel. We'll release updates continuously based on customer feedback.' The left navigation pane includes 'EC2 Dashboard', 'Events', 'Tags', 'Limits', 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity Reservations', 'Images', 'AMIs', and 'Elastic Block Store'. The main area displays a table of instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm Status	Availability zone
myec2	i-0de9ec3a9b8caea02	Running	t2.micro	2/2 checks ...	No alarms	us-east-2b

Below the table, the details for 'Instance: i-0de9ec3a9b8caea02 (myec2)' are shown. The 'Details' tab is active, displaying information about the instance.

Task 6: Check ipconfig in VM command prompt.

Ss6: cmd prompt: ipconfig

