Secure Starter Kit Cloud Connect Quick Start Guide

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FINAL

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1 INTRODUCTION

1.1 Purpose of the Document

The Cloud Connect Quick Start Guide provides an overview of How to Provision/Create and configure EC2 instance, RDS, S3 buckets and IAM User. This AWS services required to run the demo's provided in the Security Starter Quick Start Guides, as well as detailed instructions to setup and configure those required services. Each of these services MUST be setup and configured (only once), prior to running the demo's outlined in the Security Starter Quick Start Guides.

1.2 AWS Cloud Services Descriptions and its background information

For AWS Cloud Services descriptions and its background information, follow the SSK_Cloud_Connect Installation Setup Guide v1.0 - FINAL

2 AWS ACCOUNT CREATION

2.1 Login or Create your AWS Account

Note: If the User does not have an AWS Account, you will need to create one and this is used as the basis for the configuration of the other services required to run the demo's provided in the Security Starter Kits.

Login URL: https://aws.amazon.com/console/

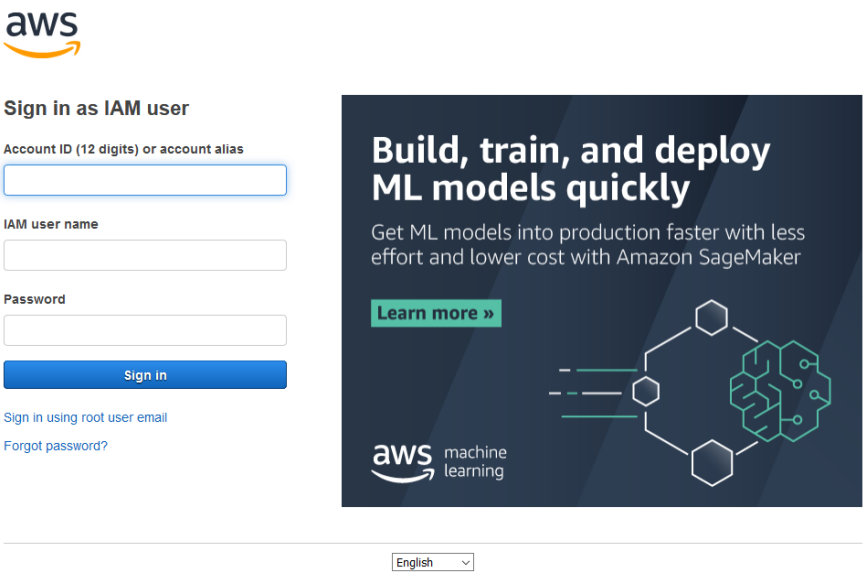


Figure 1: Login page

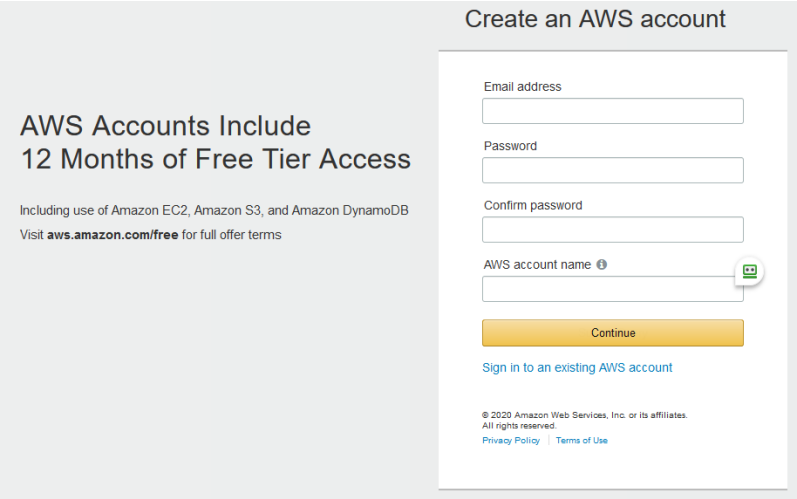


Figure 2: Create New Account page

2.2 Create New Key Pair to enable SSH access to the EC2 instance

1. Please choose **AWS Console** >> **Services** >> Select **EC2** (Under Compute section) >> **Network & Security** >> **Select Key Pairs**
2. Click on "**Create key pair**" as shown in below image

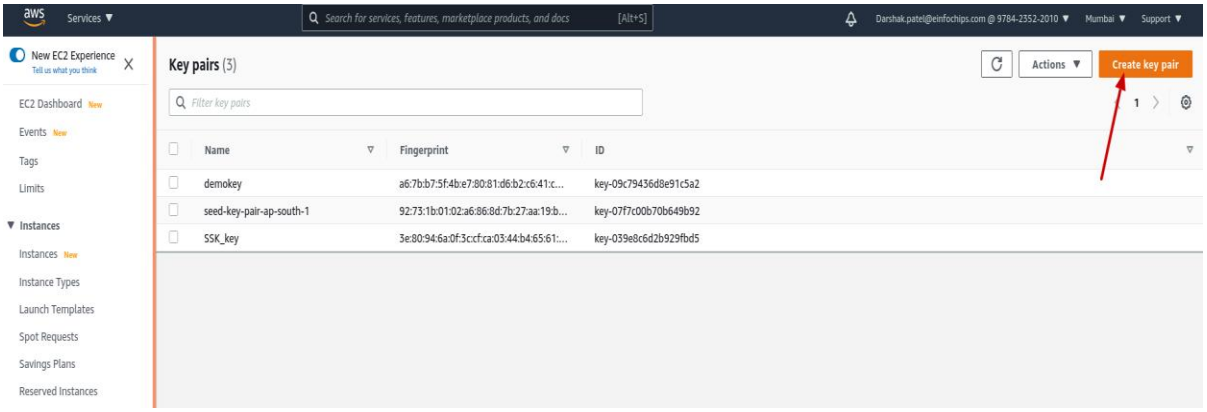


Figure 1: Create Key Pair page

3. Follow the below instructions as depicted in screenshot:
   - Enter a Name for the key pair
   - Select appropriate file format (**.pem** for Linux users and **.ppk** for Windows user) to download private key
   - Add tags (Optional)
   - Click on Create key pair

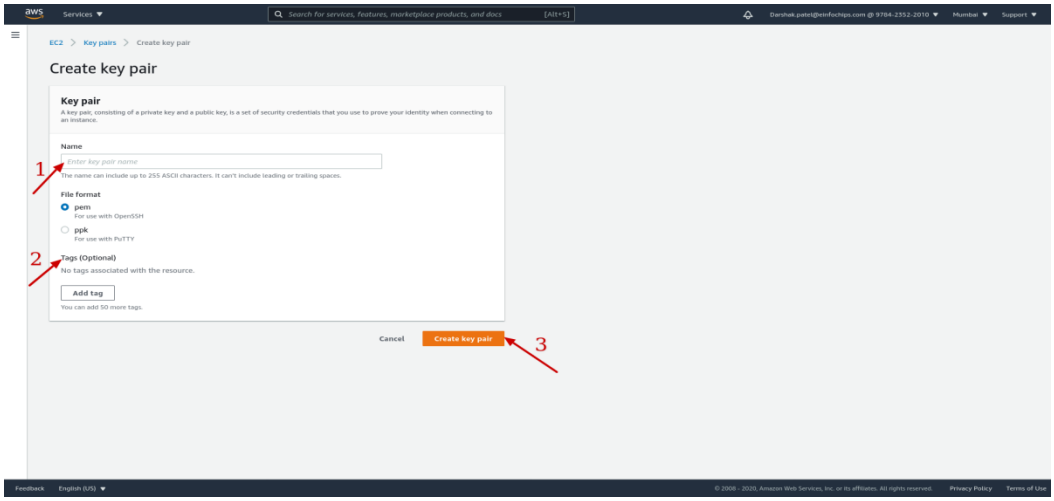


Figure 2: Creating Key Pair page

   - It will Download key pair as per the file format you have selected (To Connect EC2 Instance)

Note: Keep key file at secure place, which will be used to connect Ec2 instance.

3 CLOUDFORMATION CODE EXECUTION

1. Go to the AWS console and search for the S3 services and click on it to launch as shown in the below image:

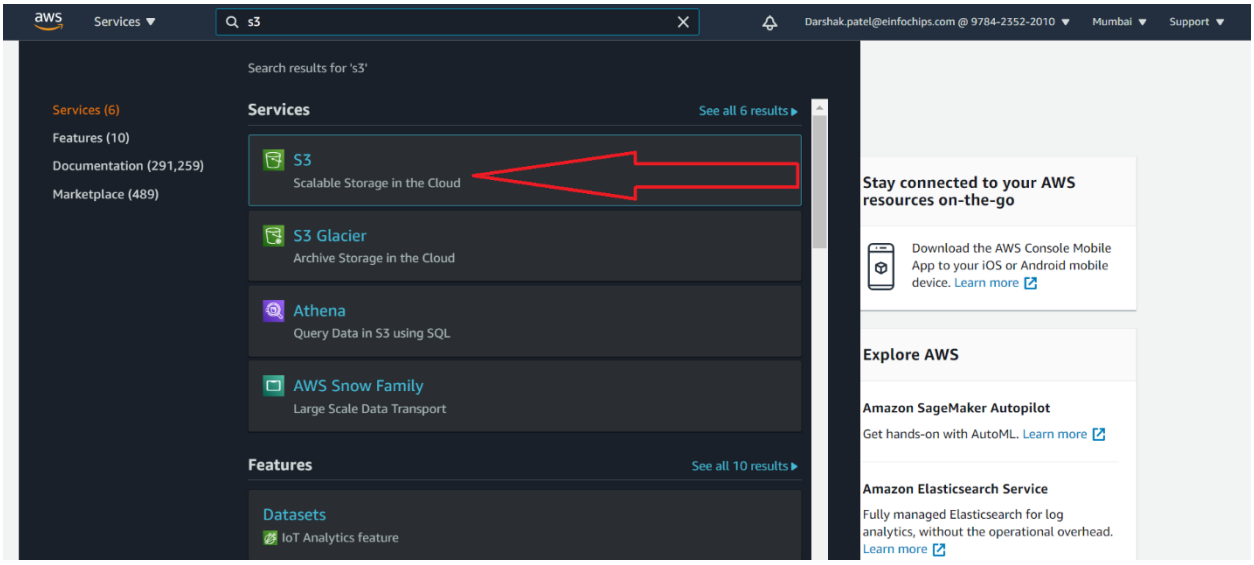


Figure 1: Searching for S3 service in Home Page

2. Click on create bucket as shown in figure below:

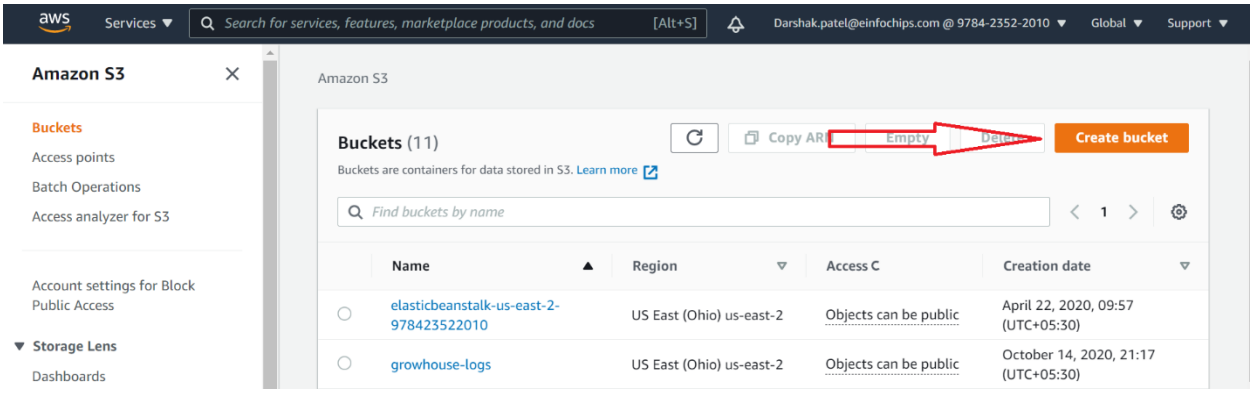


Figure 2: Create bucket

3. Enter unique bucket name after create bucket page is launched as shown below and then click on create bucket option provided at the end of the page. This will create your S3 bucket with the unique

name you provided.

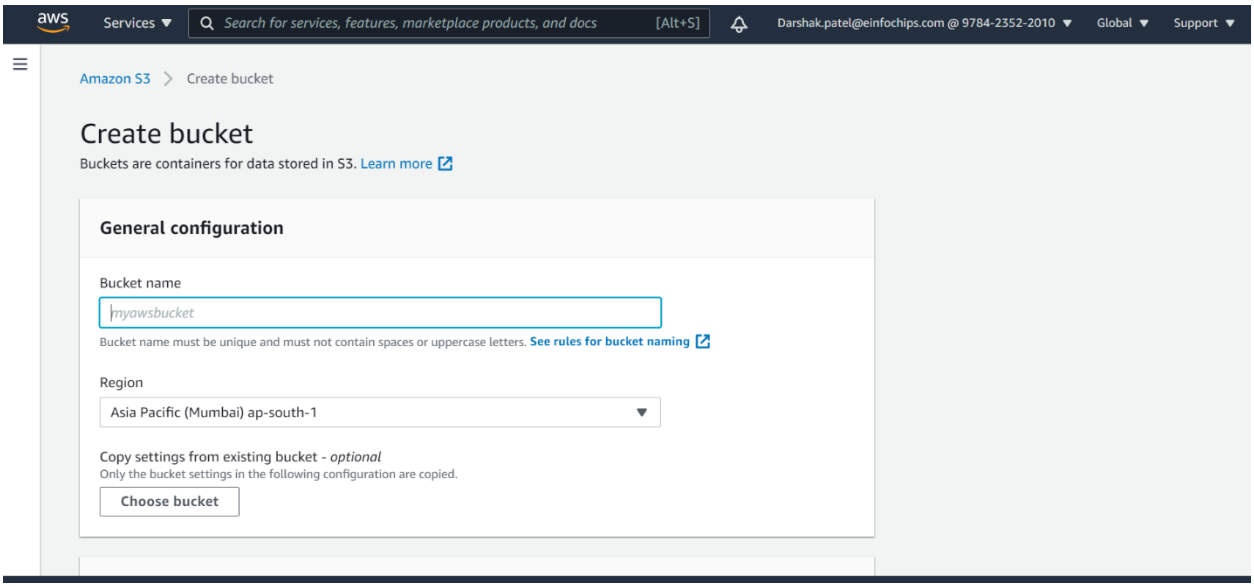


Figure 3: Creating S3 bucket

4. After creating bucket successfully, download the provided SSK_Database.zip from the SSK_Cloud_Connect folder on GitHub to upload files to the newly created S3 bucket.
5. Unzip the SSK_Database.zip and you will find below contents:

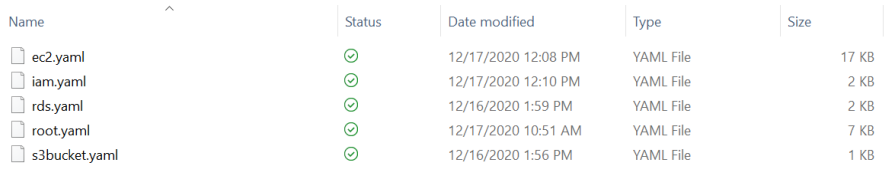


Figure 4: Extracting Contents of SSK_Database.zip

6. Open the newly created S3 Bucket and choose “upload” option as shown below:

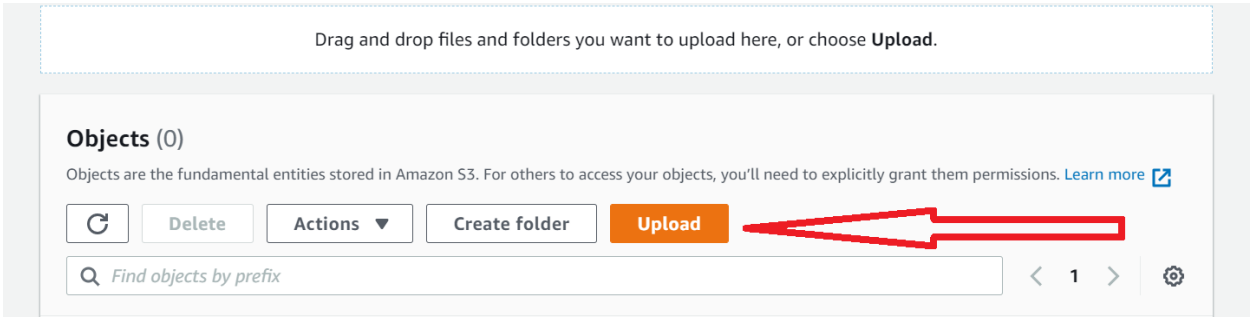


Figure 5: To upload files in S3 bucket

7. Choose the “Add files“ option provided in your S3 bucket and select all files except “root.yaml” from provided folder “SSK_Database”, then click on “upload” and this will upload files like shown below:

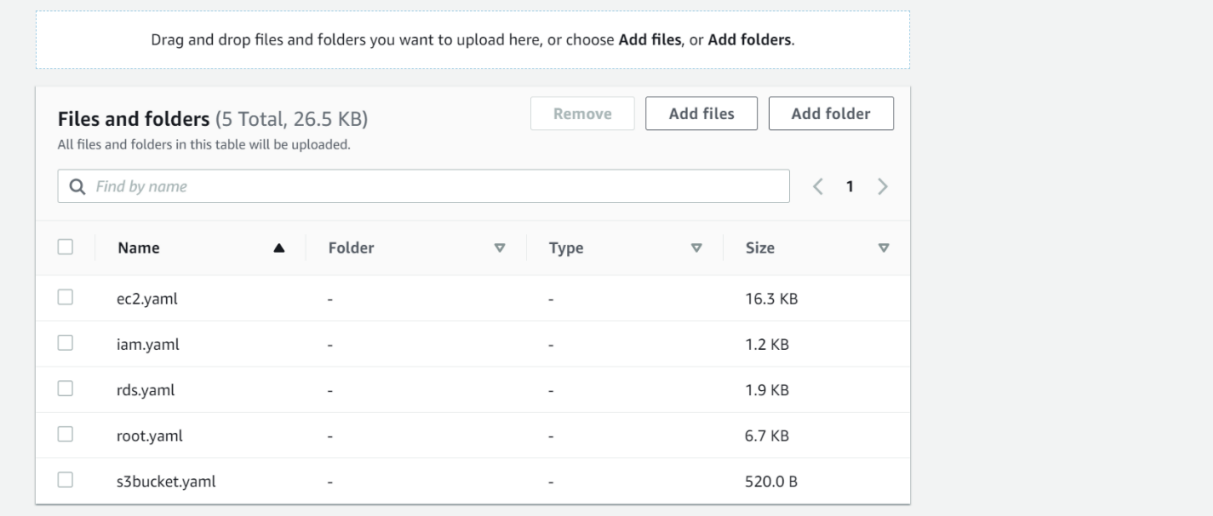


Figure 6: Uploading files in S3 bucket

8. Select each of the uploaded “.yaml” files as depicted below and copy the object URLs; you will need these to modify the “root.yaml” with your new s3-bucket name.

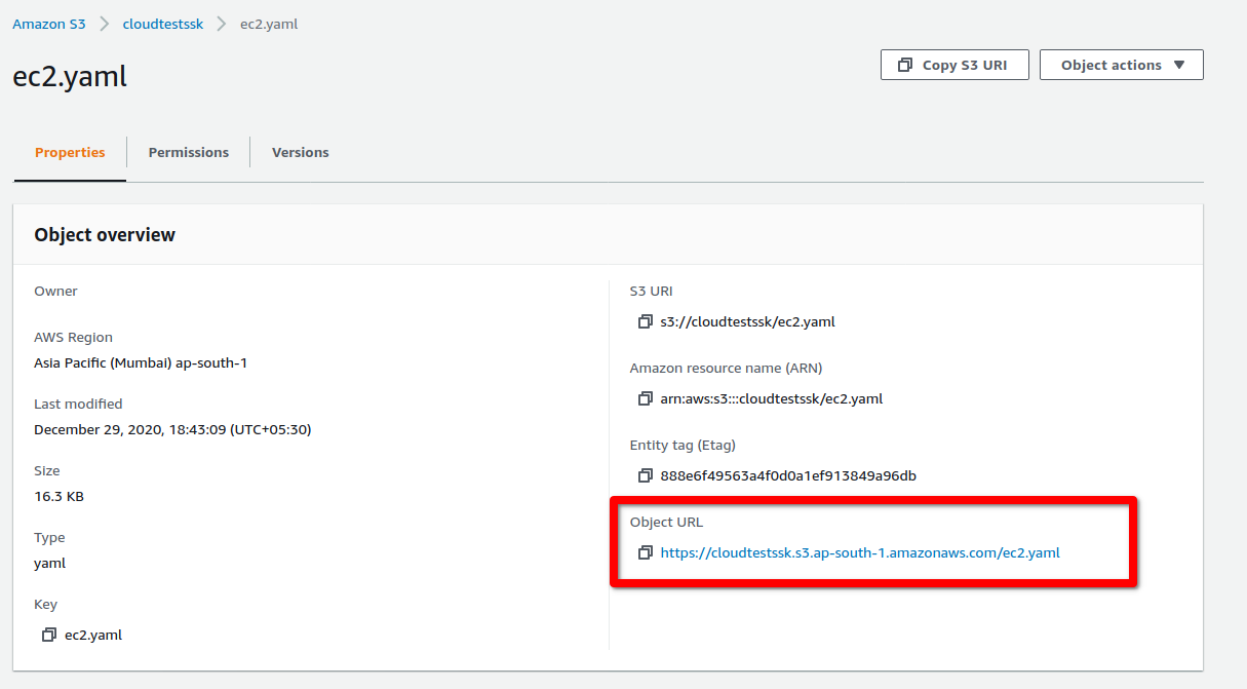


Figure 7: copying object URL

9. Please update the root.yaml file using a text editor with the copied Object URLs from above steps.

```
    Type: AWS::CloudFormation::Stack
    Properties:
      TemplateURL: "https://cloudtestssk.s3.ap-south-1.amazonaws.com/rds.yaml"
      Parameters:
        DBInstanceID: !Ref DBInstanceID
        DBName: !Ref DBName
        DBInstanceClass: !Ref DBInstanceClass
        DBAllocatedStorage: !Ref DBAllocatedStorage
        DBUsername: !Ref DBUsername
        DBPassword: !Ref DBPassword
        ProjectName: !Ref ProjectName

  # Create webserver (Ec2 instance)
  ServerStack:
    Type: AWS::CloudFormation::Stack
    DependsOn: ['DatabaseStack', 'IAMStack']
    Properties:
      TemplateURL: "https://cloudtestssk.s3.ap-south-1.amazonaws.com/ec2.yaml"
      Parameters:
        AWSIOTCoreEndpoint: !Ref AWSIOTCoreEndpoint
        InstanceType: !Ref InstanceType
        KeyName: !Ref KeyName
        SSHLocation: !Ref SSHLocation
        DBUsername: !GetAtt DatabaseStack.Outputs.DBUserName
        DBPassword: !GetAtt DatabaseStack.Outputs.DBPassword
        DBName: !GetAtt DatabaseStack.Outputs.DBName
        DBHost: !GetAtt DatabaseStack.Outputs.DBEndpointAddress
        IAMUserID:  !GetAtt IAMStack.Outputs.UserID
        IAMUserName: !Ref IAMUserName
        IAMAccessKey: !GetAtt IAMStack.Outputs.AccessKey
        IAMSecretKey: !GetAtt IAMStack.Outputs.SecretKey
        DockerHubUserName: !Ref DockerHubUserName
        DockerHubPassword: !Ref DockerHubPassword
        OTABucketName: !GetAtt S3BucketStack.Outputs.OTABucketName
        LogBucketName: !GetAtt S3BucketStack.Outputs.LogBucketName

  # Create IAM Group and User
  IAMStack:
    Type: AWS::CloudFormation::Stack
    Properties:
      TemplateURL: "https://cloudtestssk.s3.ap-south-1.amazonaws.com/iam.yaml"
      Parameters:
        IAMUserName: !Ref IAMUserName
        ProjectName: !Ref ProjectName

  # Create S3 Bucket
  S3BucketStack:
    Type: AWS::CloudFormation::Stack
    Properties:
      TemplateURL: "https://cloudtestssk.s3.ap-south-1.amazonaws.com/s3bucket.yaml"
      Parameters:
        ProjectName: !Ref ProjectName
```

Figure 8: Updating object URL into the “root.yaml”.

10. Upload your edited root.yaml to your s3-bucket. After successfully uploading above file, click on the newly uploaded **“root.yaml”** file.

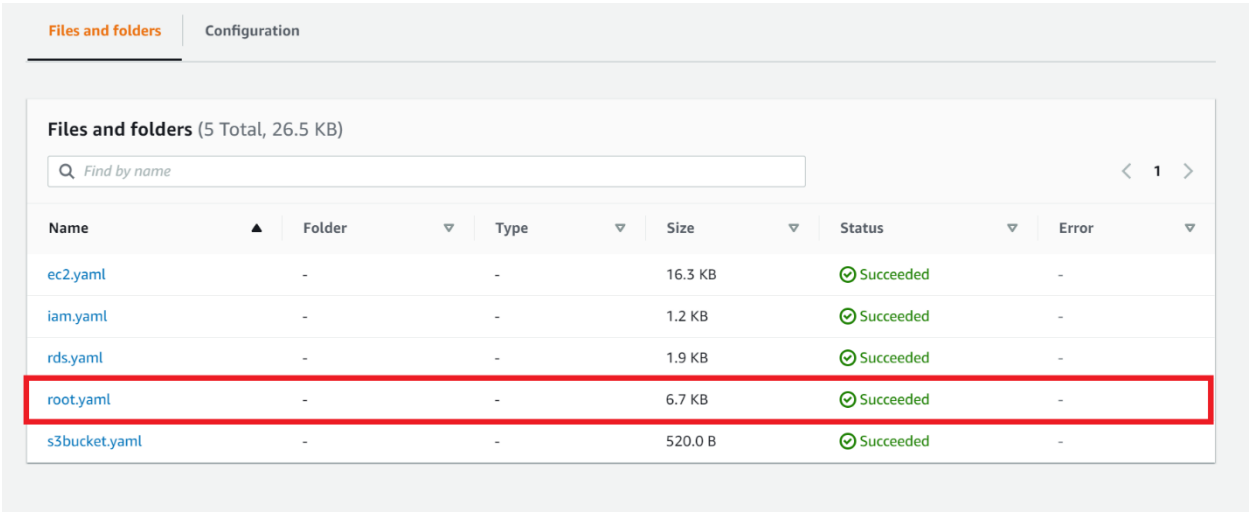


Figure 9: Launching root.yaml page

11. Once **root.yaml** page is launched, copy **object URL** for further use in step 14 as shown below.

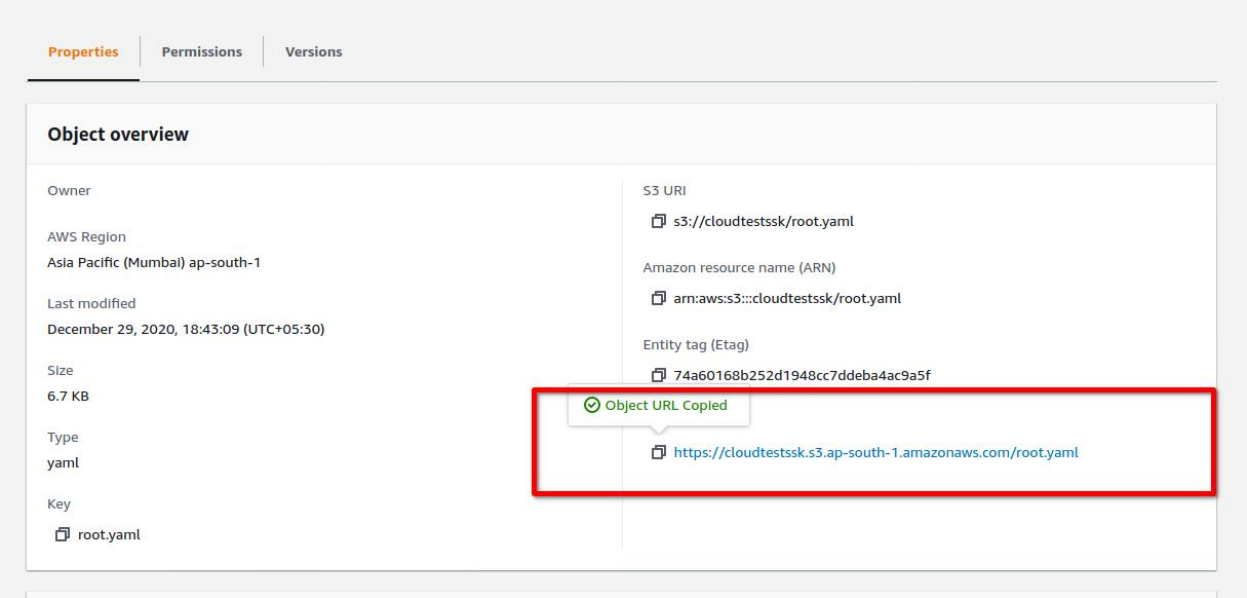


Figure 10: Copying Object URL

12. Now search for the **CloudFormation** service as shown in the below image and click on it.

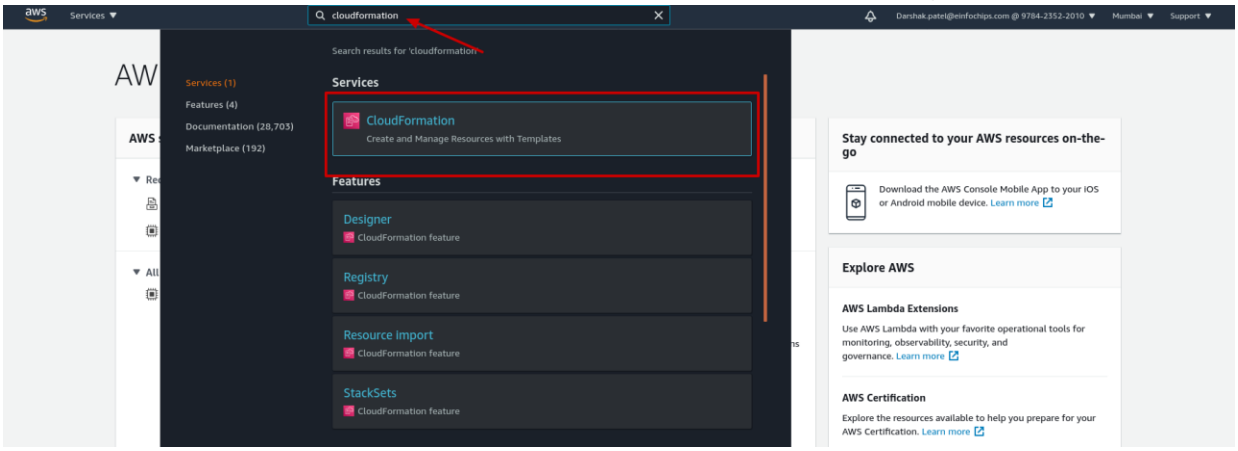


Figure 11: Searching for CloudFormation in Home Page

13. It will display page as shown below, Click on Create Stack button.

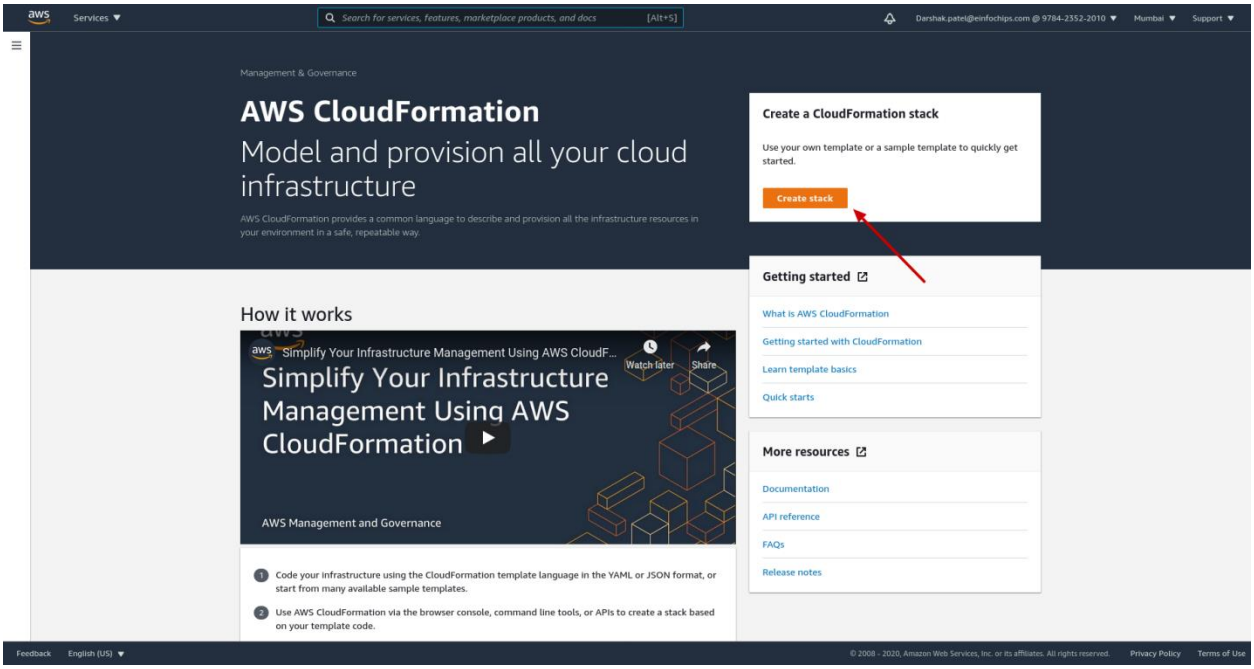


Figure 12: Create Stack

14. Enter the Object URL for your root.yaml which you have copied from step 11 in Amazon S3 URL and click on **Next** Button.

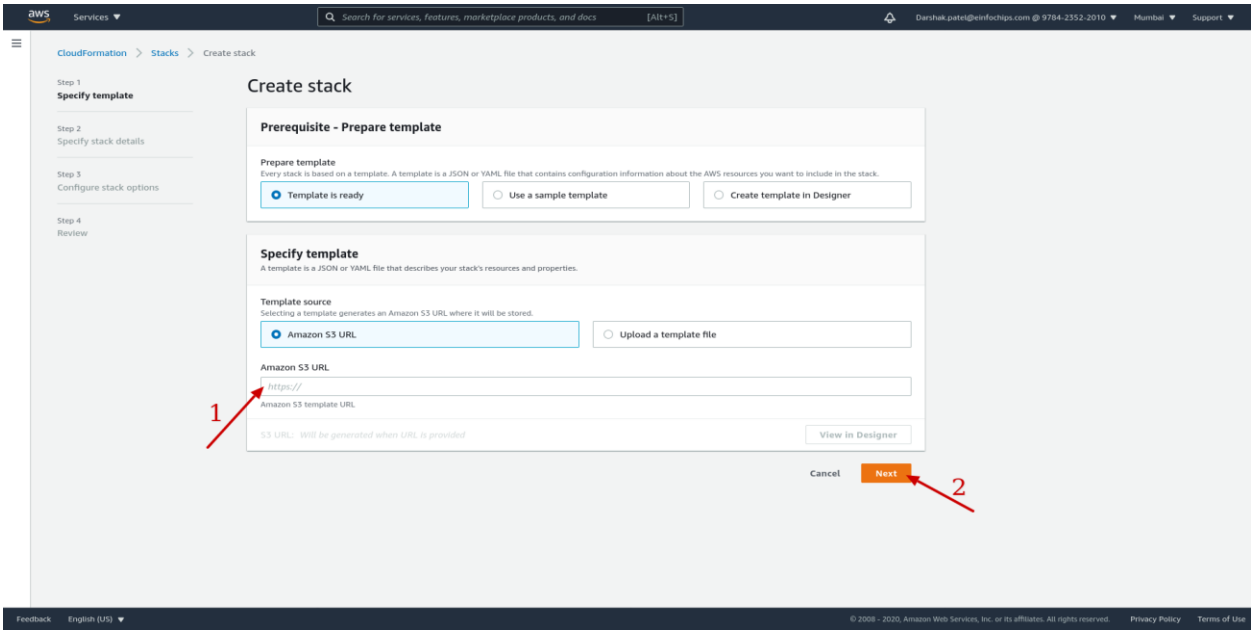


Figure 13: Creating Stack step1

15. Enter the **unique** stack **name** and fill the required parameters in the page while keeping in mind the below rules:
    - In **KeyName** parameter, need to select **keypair** name which we have created in section 2.2.
    - For **DBUsername** parameter, username should not contain any special characters.
    - Enter **unique IAMUserName** and **ProjectName** here. Remember-repeat use of IAMUsername and ProjectName can create problem while creating stack.
    - For Dockerhub username and Password, please provide below credentials:
        - **Dockerhub ID**: arrowelectronics
        - **Password**: Arrow1234
    - After filling, all the details click next.

Example:

AWSIOTCoreEndpoint	xxxxxx-ats.iot.ap-south-1.amazonaws.com
DBAllocatedStorage	20
DBInstanceClass	db.t2.micro
DBInstanceID	sskdbinstance
DBPassword	einfochips123 (should be alpha-numeric)
DBUsername	admin
DockerHubPassword	Arrow1234
DockerHubUserName	arrowelectronics
IAMUserName	testusr (should be unique)
InstanceType	t2.micro
KeyName	SSK_Test
ProjectName	abcseed (should be unique)

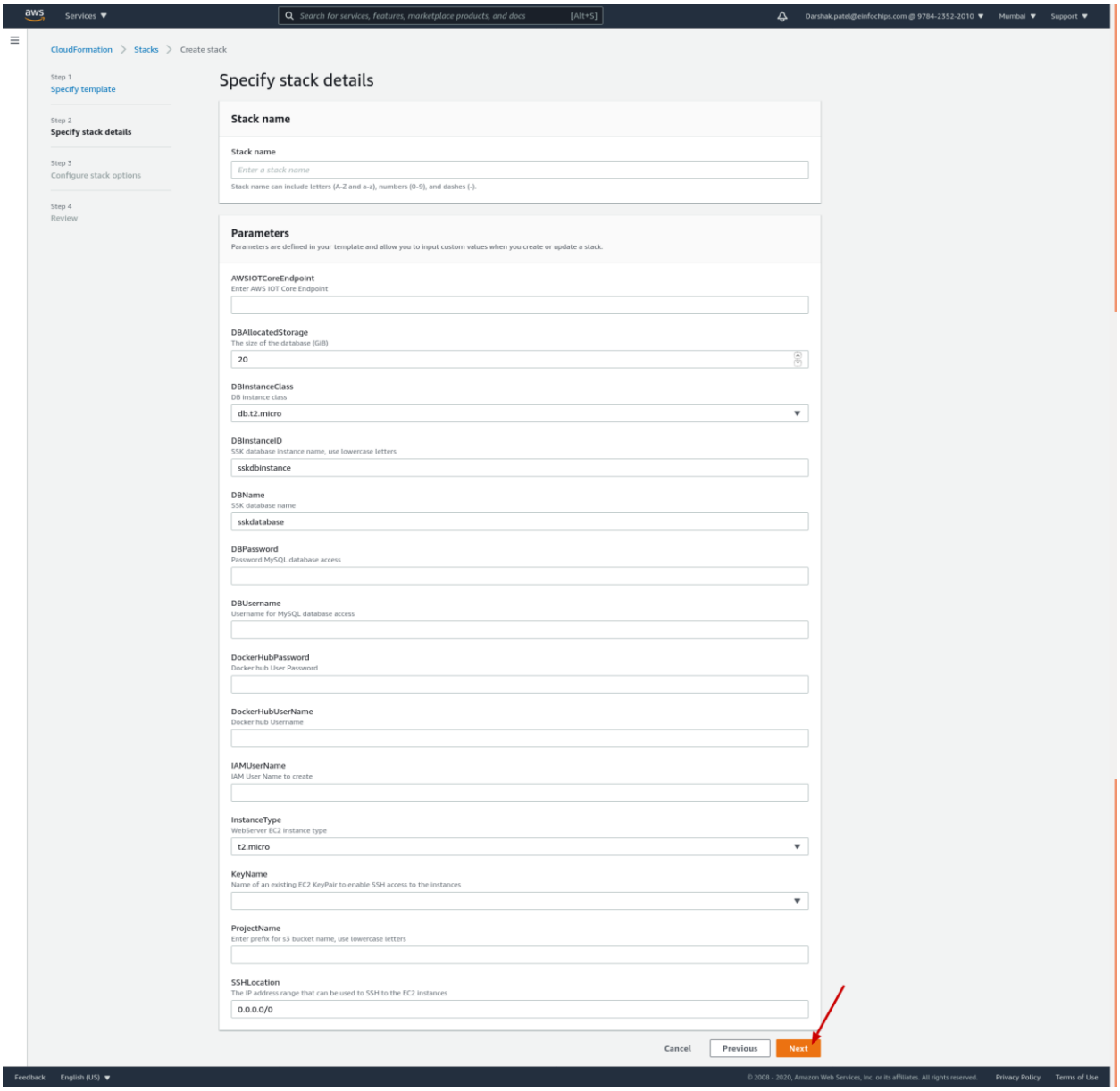


Figure 14: Creating Stack step2

16. On next page, you can optionally add tags (Tags are used for billing/cost management). Click on **Next** Button.

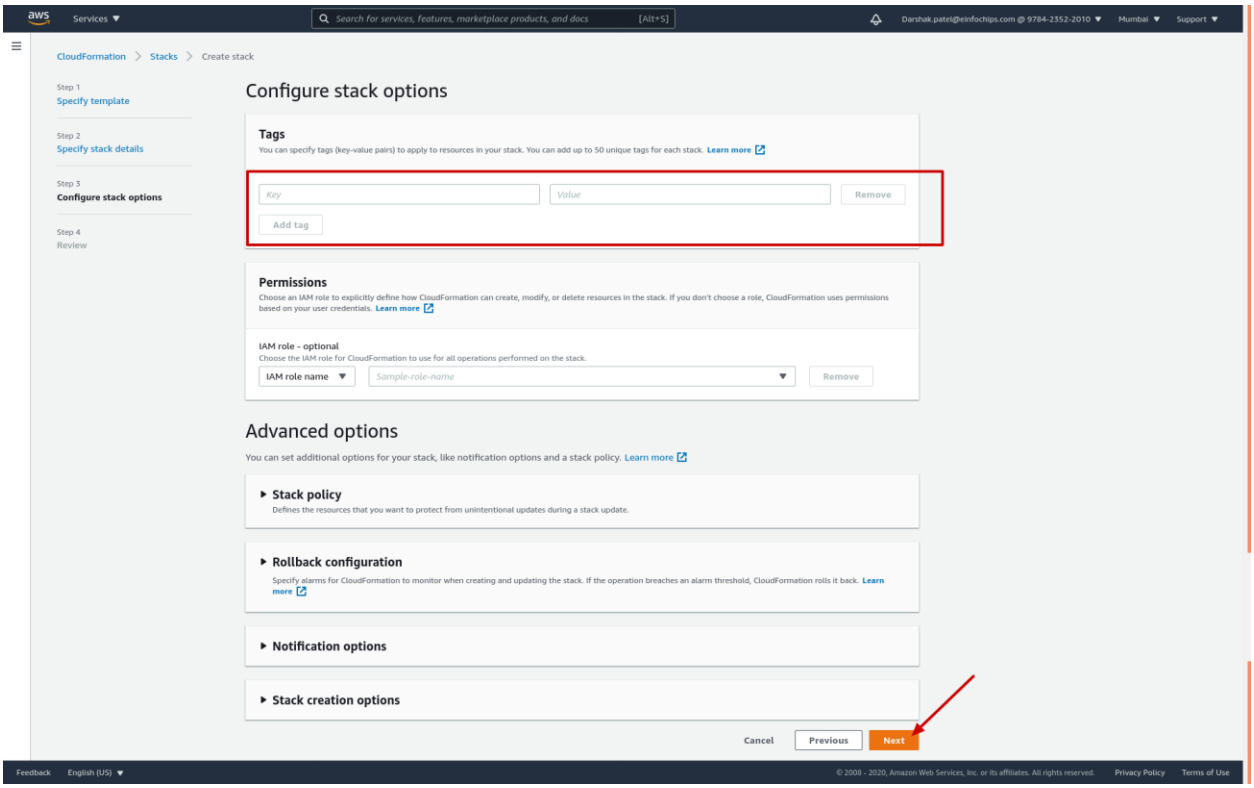


Figure 15: Creating Stack step3

17. Review the stack details (for parameters value and tags value). Then select the check-boxes for acknowledgment as shown in below image and Click on **Create Stack** Button.

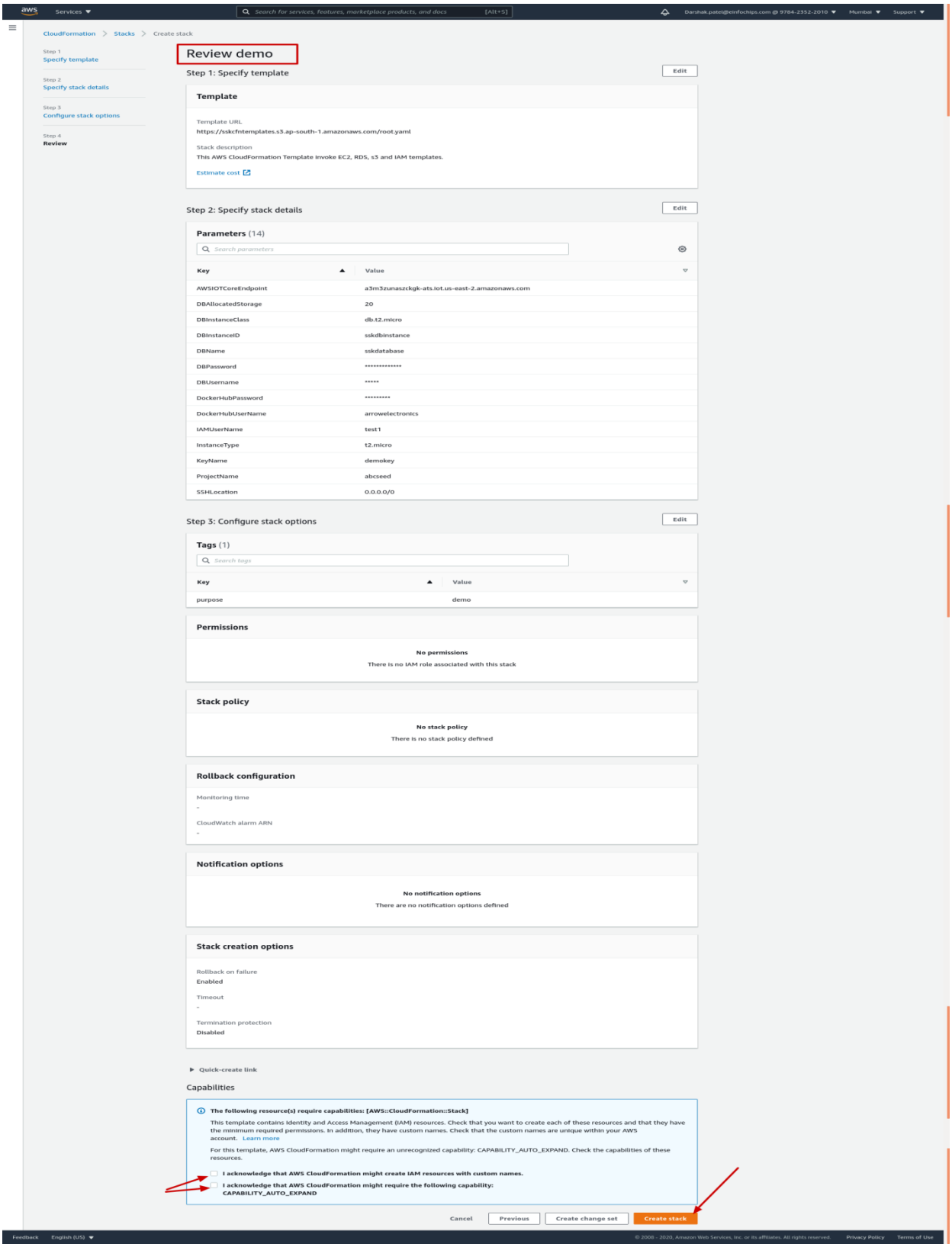


Figure 16: Creating Stack step4

18. It will start creating stacks for IAM User, RDS, EC2 instance and S3 Bucket. You can see the stack status and refresh the events as shown in below image.

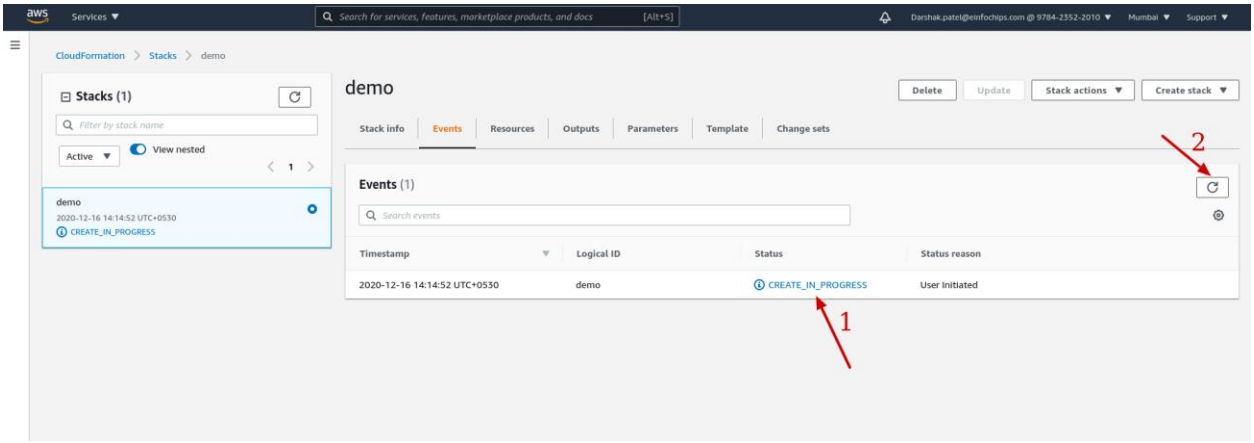


Figure 17: Stack Creation event/status page

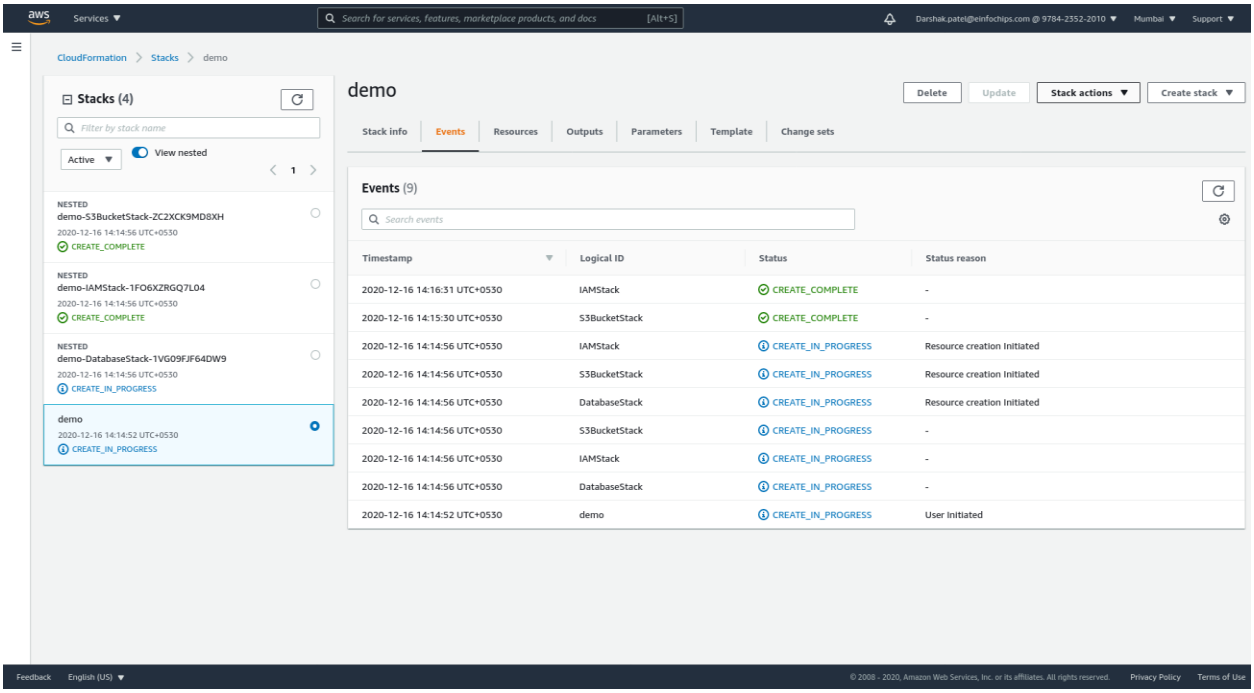
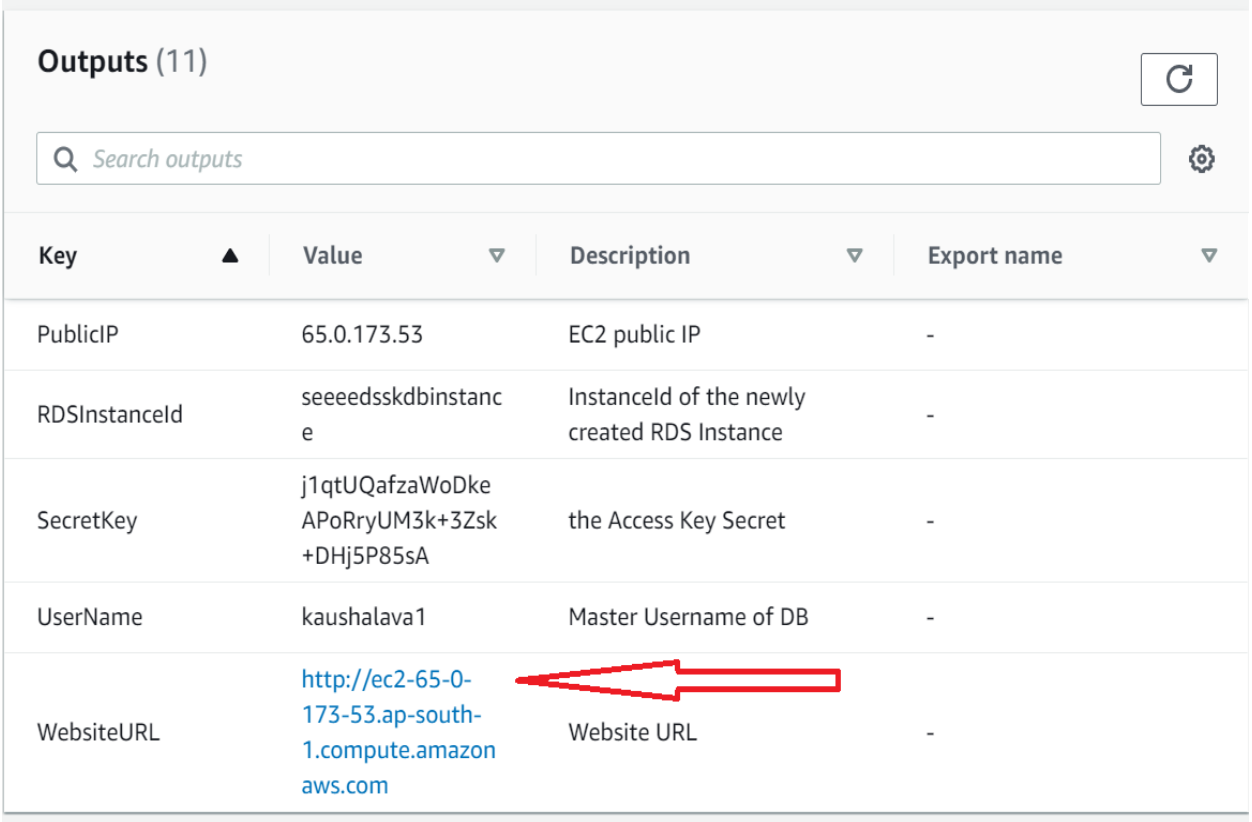


Figure 18: Stack Creation event/status page

19. After Stack creation, you can check for the website URL in the last row of Output section.



Outputs (11)

Search outputs

Key	Value	Description	Export name
PublicIP	65.0.173.53	EC2 public IP	-
RDSInstanceId	seeeedsskdbinstance	InstanceId of the newly created RDS Instance	-
SecretKey	j1qtUQafzaWoDkeAPoRryUM3k+3Zsk+DHj5P85sA	the Access Key Secret	-
UserName	kaushalava1	Master Username of DB	-
WebsiteURL	http://ec2-65-0-173-53.ap-south-1.compute.amazonaws.com	Website URL	-

Figure 19: Checking Website URL in output tab after Stack Creation

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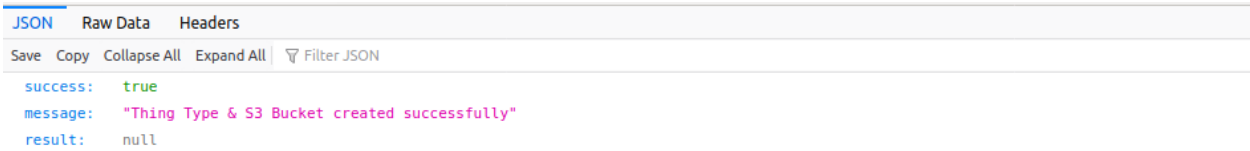
Note:

[Please login once with the below api link in order to provide access
http://<ec2 domain name>/api/v1/aws/thing/configthingtypeandbucket
i.e.
http://ec2-xx-xxx-xxx-xx.ap-south 1.compute.amazonaws.com/api/v1/aws/thing/configthingtypeandbucket]

User will be able to check the thing created successful page as per below.



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20. Double clicking on above **website URL**, user will be launched to the login SSK Cloud Connect Portal as shown below:

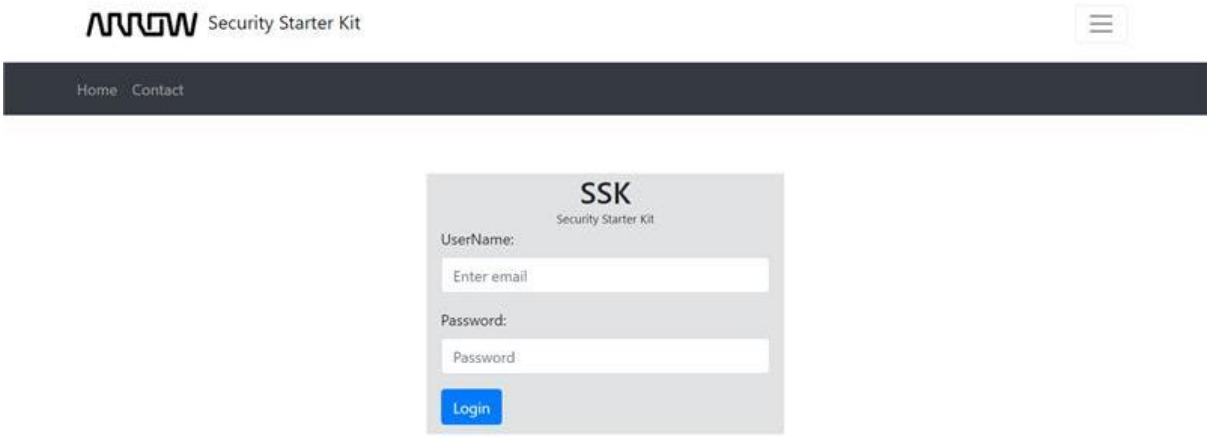


Figure 20: SSK Login page

Note: **Username**: IAMUsername (User entered while creating Cloud Stack)
Password: ArrowSSKportal@2020 (Created for Temporary use only)

21. After logging in, user can also edit default username "null null" with their desired name.

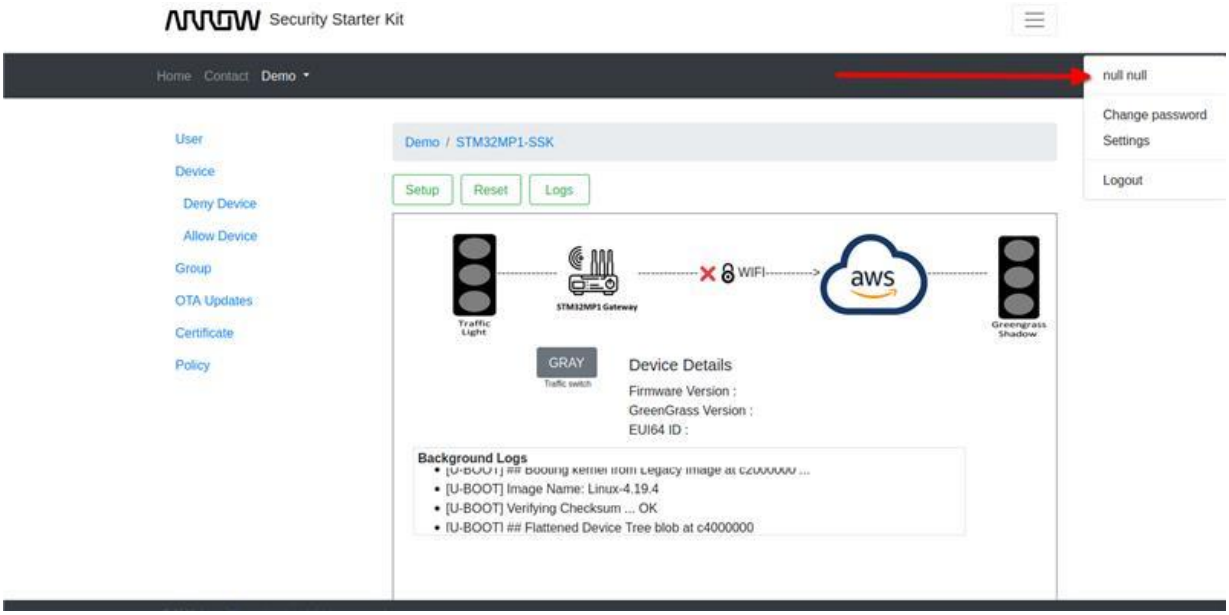


Figure 21: SSK Home page

22. By clicking on “null null”, the below screen will display for the user to change their details as they want them to display.

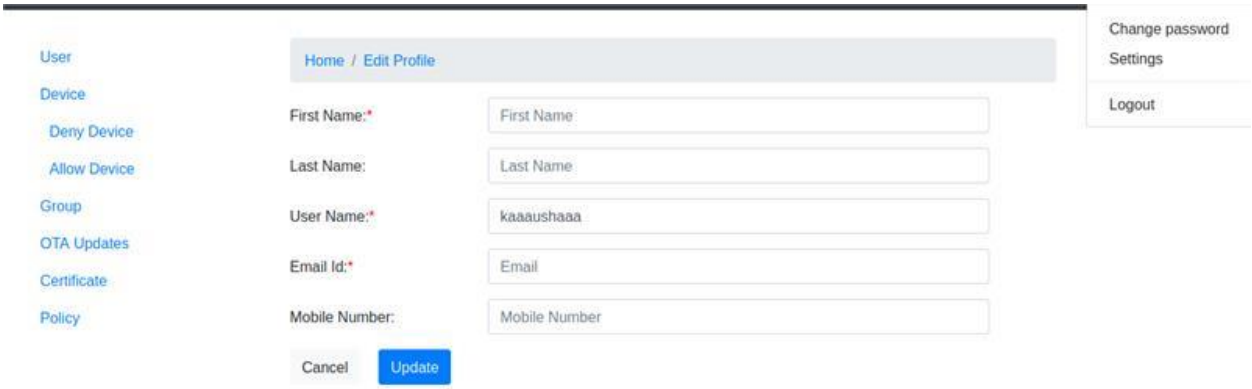
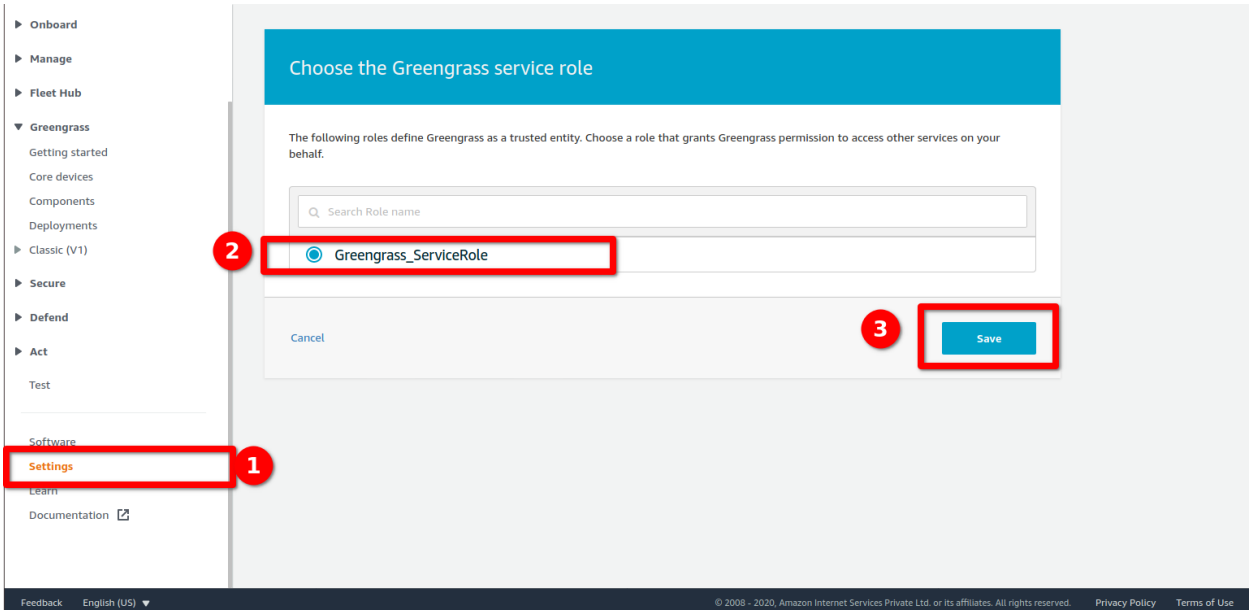


Figure 22: SSK Home/Edit profile page

23. User needs to Login into the AWS Console Account. Now search for **IOT Greengrass>>Settings>>Greengrass service role**

Now select Attach role option available there.



As we have successfully installed the cloud connect portal, please refer SSK Quick Start Guides to ensure performance of SSK Demos.