

# Course-End Project: Email Notification and Movement Process in an Organization

This section will guide you to:

1. Create a website where a user can upload a file on the localhost
2. Create a Lambda handler
3. Create an empty S3 bucket
4. Add an event for email notification using the Lambda function
5. Create and configure a queue using the SQS service
6. Verify the email address using SES service
7. Create and verify the domain using the SES service
8. Create a hosted zone along with two record sets of type MX and TXT using Route 53
9. Create a receipt rule using Route 53
10. Check whether the file that is removed from the email moves to the empty bucket

**Step 1:** Create a website where a user can upload a file on the localhost

- Here, HTML+CSS+JAVASCRIPT has been used

## HTML

```
<input type="file" id="real-file" hidden="hidden" />
<button type="button" id="custom-button">CHOOSE A
FILE</button>
<span id="custom-text">No file chosen, yet.</span>
```

## CSS

```
#custom-button {
  padding: 10px;
  color: white;
  background-color: #009578;
  border: 1px solid #000;
  border-radius: 5px;
  cursor: pointer;
}
```

```
#custom-button:hover {
  background-color: #00b28f;
```

```
}
```

```
#custom-text {  
  margin-left: 10px;  
  font-family: sans-serif;  
  color: #aaa;  
}
```

### Javascript

```
const realFileBtn = document.getElementById("real-file");  
const customBtn = document.getElementById("custom-button");  
const customTxt = document.getElementById("custom-text");  
customBtn.addEventListener("click", function() {  
  realFileBtn.click();  
});  
realFileBtn.addEventListener("change", function() {  
  if (realFileBtn.value) {  
    customTxt.innerHTML = realFileBtn.value.match(  
      /[V\\|](\\w|d|s|.|-|\\(|\\)|)+$/  
    )[1];  
  } else {  
    customTxt.innerHTML = "No file chosen, yet.";  
  }  
});
```

CHOOSE A FILE

No file chosen, yet.

### Step 2: Create a Lambda handler

- Click on **Create Lambda function**
- Select author from scratch
- Give a name for the Lambda function
- Choose **Runtime** as node.js 8.10
- Choose an existing role, and select the name which you have created in the previous step

- Click on Create Function

**Basic information**

**Function name**  
Enter a name that describes the purpose of your function.  
demolambda  
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](#)  
Lambda will create an execution role with permission to upload logs to Amazon CloudWatch Logs. You can configure and modify permissions further when you add triggers.  
[► Choose or create an execution role](#)

Cancel Create function

- Type the code below in your Lambda function and save it

```
var aws = require('aws-sdk');
var ses = new aws.SES({
  region: 'us-east-1'
});
exports.handler = function(event, context){
  console.log("Incoming:", event);
  var eParams = {
    Destination: {
      ToAddress: ["test@simplilearn.com"] //give the email id verified
      by SES
    },
    Message: {
      Body: {Text: {
        Data: "Lambda is working"
      }
    },
    Subject: { Data: "mail from ses"}
  },
  Source: test@simplilearn.com //give the email ID which is
  verified by SES
};
console.log('===SENDING EMAIL===');
var email = ses.sendEmail(eParams, function(err, data){
  if(err) console.log(err);
  else {
    console.log("===Email Sent===");
    console.log(data);
    console.log("EMAIL CODE END");
    console.log('EMAIL: ',email);
```

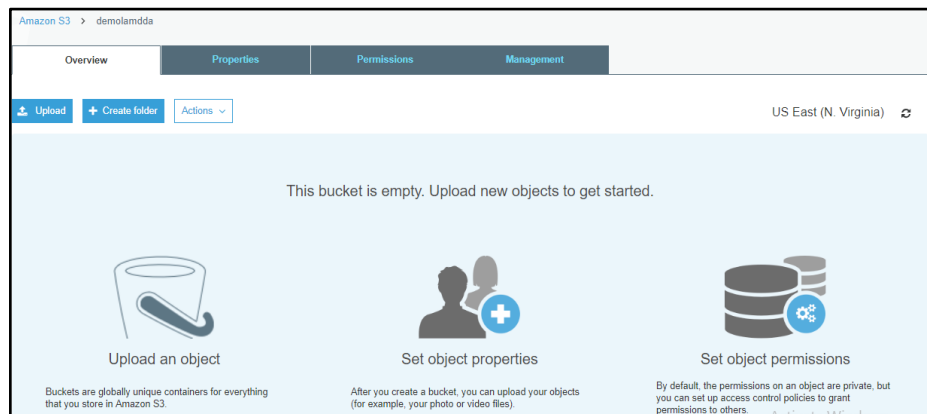
```

context.succeed(event);
}
});
};

```

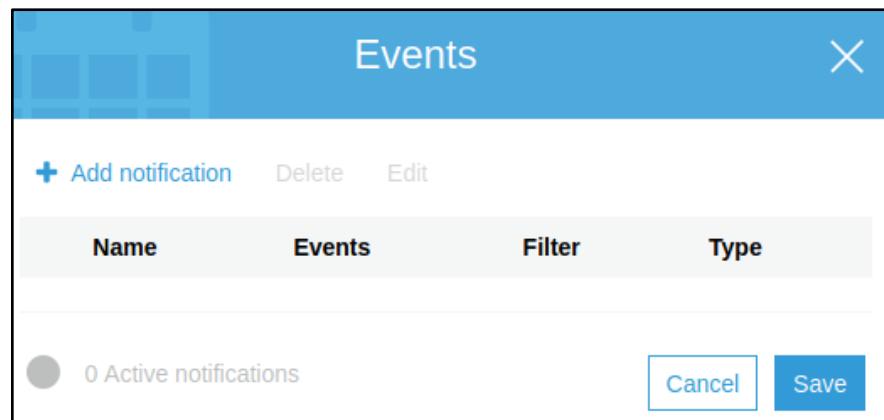
### Step 3: Create an empty S3 bucket

- Click on **Create Bucket**
- Provide name to your bucket and keep the rest of the properties as default and click on **Create**



### Step 4: Add an event for email notification using the Lambda function

- In **Properties**, select **Events**
- Click on **Add notifications**



- Select an event, and under the **Send to** option, select **Lambda Function**
- In Lambda, choose the Lambda function you have created and save it

| Name   | Events   | Filter | Type |  |                                 |   |  |                               |   |                               |   |  |  |
|--|--|--------|------|--|---------------------------------|---|--|-------------------------------|---|-------------------------------|---|--|--|
| New event <span>×</span>   |  |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <b>Name</b> ⓘ<br><input type="text" value="e.g. MyEmailEventForPut"/>  |  |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <b>Events</b> ⓘ <table border="0"> <tr> <td><input type="checkbox"/> RRSObjectLost</td> <td><input type="checkbox"/> Delete</td> </tr> <tr> <td><input checked="" type="checkbox"/> Put</td> <td><input type="checkbox"/> Delete Marker Created</td> </tr> <tr> <td><input type="checkbox"/> Post</td> <td><input type="checkbox"/> ObjectCreate (All)</td> </tr> <tr> <td><input type="checkbox"/> Copy</td> <td><input type="checkbox"/> ObjectDelete (All)</td> </tr> <tr> <td colspan="2"><input type="checkbox"/> Complete Multipart Upload</td> </tr> </table> |  |        |      | <input type="checkbox"/> RRSObjectLost | <input type="checkbox"/> Delete | <input checked="" type="checkbox"/> Put | <input type="checkbox"/> Delete Marker Created | <input type="checkbox"/> Post | <input type="checkbox"/> ObjectCreate (All) | <input type="checkbox"/> Copy | <input type="checkbox"/> ObjectDelete (All) | <input type="checkbox"/> Complete Multipart Upload |  |
| <input type="checkbox"/> RRSObjectLost   | <input type="checkbox"/> Delete                |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <input checked="" type="checkbox"/> Put  | <input type="checkbox"/> Delete Marker Created |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <input type="checkbox"/> Post  | <input type="checkbox"/> ObjectCreate (All)    |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <input type="checkbox"/> Copy  | <input type="checkbox"/> ObjectDelete (All)    |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <input type="checkbox"/> Complete Multipart Upload   |  |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <b>Prefix</b> ⓘ<br><input type="text" value="e.g. images/"/>   |  |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <b>Suffix</b> ⓘ<br><input type="text" value="e.g. .jpg"/>  |  |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <b>Send to</b> ⓘ<br><input type="text" value="Lambda Function"/>   |  |        |      |  |                                 |   |  |                               |   |                               |   |  |  |
| <b>Lambda</b><br><input type="text" value="demolambda"/>   |  |        |      |  |                                 |   |  |                               |   |                               |   |  |  |

#### Step 5: Create and configure a queue using the SQS service

- In your AWS Management Console, search for SQS Service and select it
- Click on **Create queue**
- Give a name to the queue and click on **Create**

Name  
Q-demo

A queue name is case-sensitive and can have up to 80 characters. You can use alphanumeric characters, hyphens (-), and underscores (\_).

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**Configuration**  
Set the maximum message size, visibility to other consumers, and message retention. [Info](#)

Visibility timeout [Info](#)  
30 Seconds  
Should be between 0 seconds and 12 hours.

Message retention period [Info](#)  
4 Days  
Should be between 1 minute and 14 days.

Delivery delay [Info](#)  
0 Seconds  
Should be between 0 seconds and 15 minutes.

Maximum message size [Info](#)  
256 KB  
Should be between 1 KB and 256 KB.

Receive message wait time [Info](#)  
0 Seconds  
Should be between 0 and 20 seconds.

---

**Access policy**  
Define who can access your queue. [Info](#)

- In Queue lambda triggers, click on **Configure a lambda function trigger**
- Select the Lambda function you have created and click on Save as shown below:

**Lambda function**  
Set incoming messages to trigger a Lambda function.

Region  
us-east-1

Specify an AWS Lambda function available for this queue.  
Choose a function

Cancel Save

- Under SNS subscription, click on **Subscribe to Amazon SNS topic**
- Choose the SNS topic for the queue

Amazon SQS > Queues > Q-demo > Subscribe to Amazon SNS topic

**Subscribe to Amazon SNS topic** [Info](#)

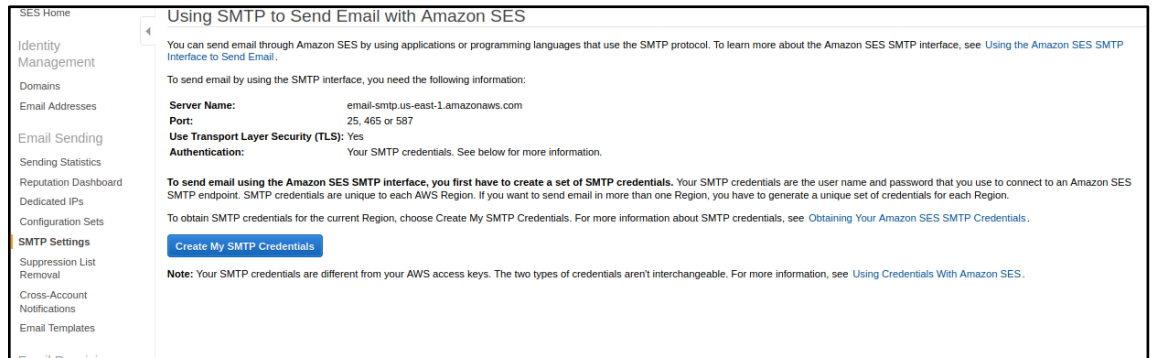
**Amazon SNS topic**  
To allow your queue to receive messages from an Amazon SNS topic, subscribe it to an Amazon SNS topic.

Specify an Amazon SNS topic available for this queue.  
Choose a topic

Cancel Save

**Step 6:** Verify the email address using SES service

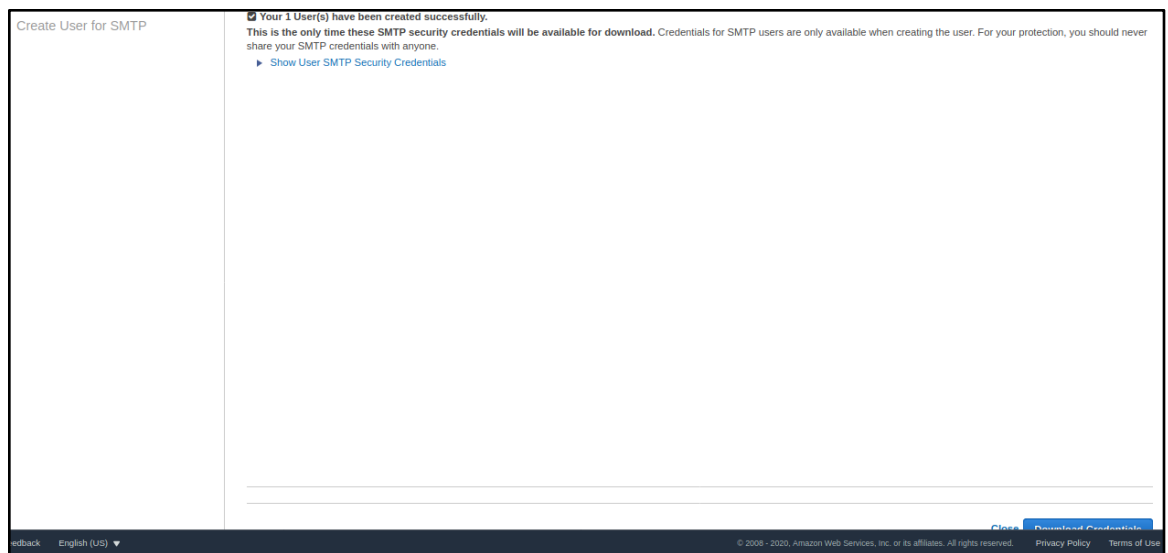
- In your SES dashboard, click on **SMTP Settings**
- Then, click on **Create My SMTP Credentials**



- Enter an IAM username and click on **Create**



- Now, click on **Download Credentials** to get the credentials
- After downloading the credentials, click on **Close**



- Download and install **G-Lock EasyMail7** software from <https://easymail7.com/>

# EasyMail7

Easy. Fast. Anywhere.

[Home](#)
[Pricing](#)
[Support](#)

## In House Email Marketing Software

**Get into more inboxes**  
Send better email newsletters, promote awesome products

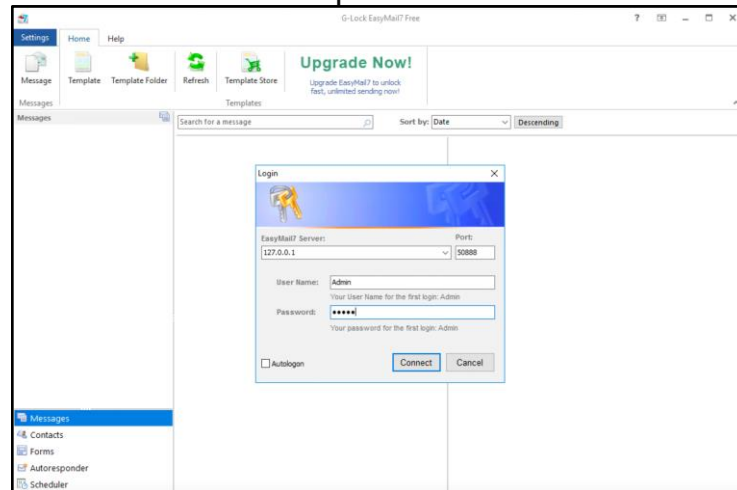
**Reduce costs**  
Send Emails via Amazon SES or in-house mail server without paying a per-email fee.

**Keep your subscribers data in house**  
Connect to a variety of CRM databases (without sharing your data).

[Download Now →](#)

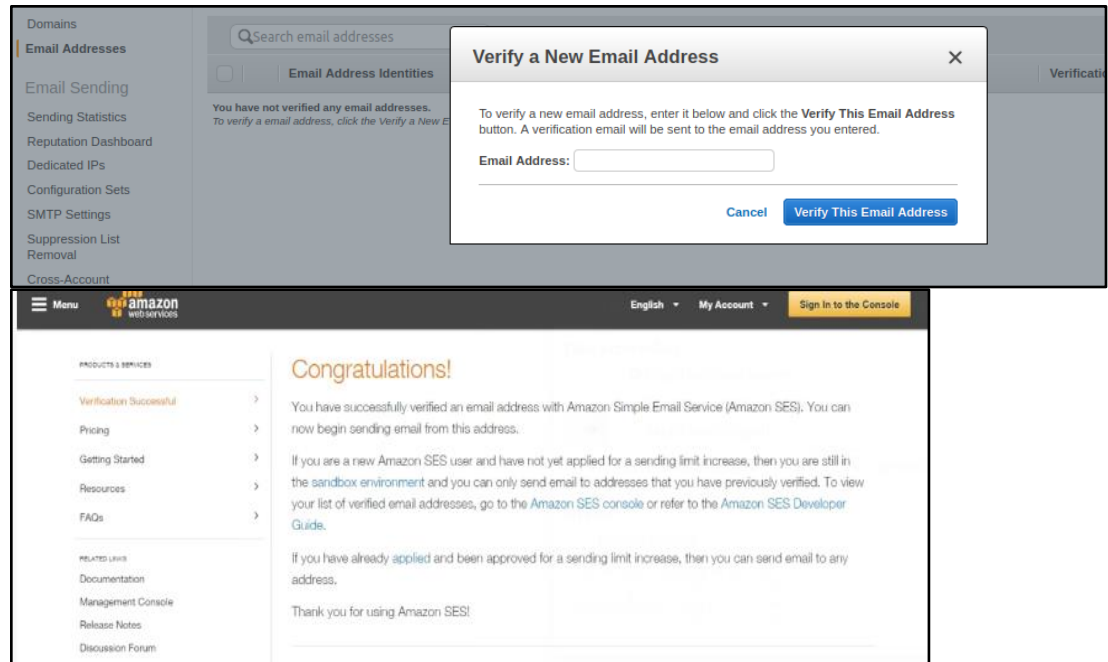
System requirements: Windows® 7, 8, 10 Windows® Server 2012 or higher

- Open the software for a first-time login and use the following credentials:  
**User name: Admin Password: Admin**
- Create a username and a password



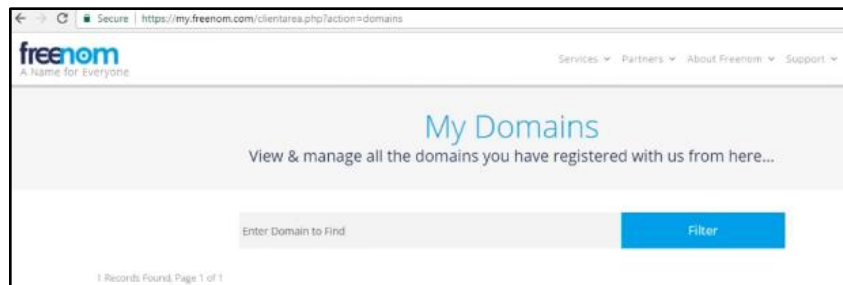
- Activate the software by entering the personal key you received in your email
- In your SES dashboard, choose the **Email Address** option and click on **Verify Email Address**
- Enter the email address and click on **Verify This Email Address**
- Approve the email you will receive



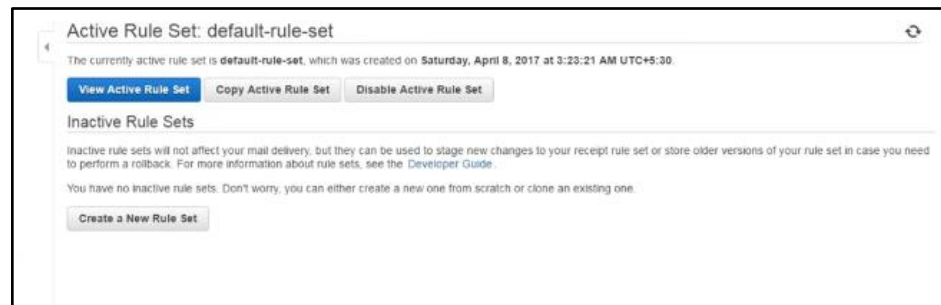


## Step 7: Create and verify the domain using the SES service

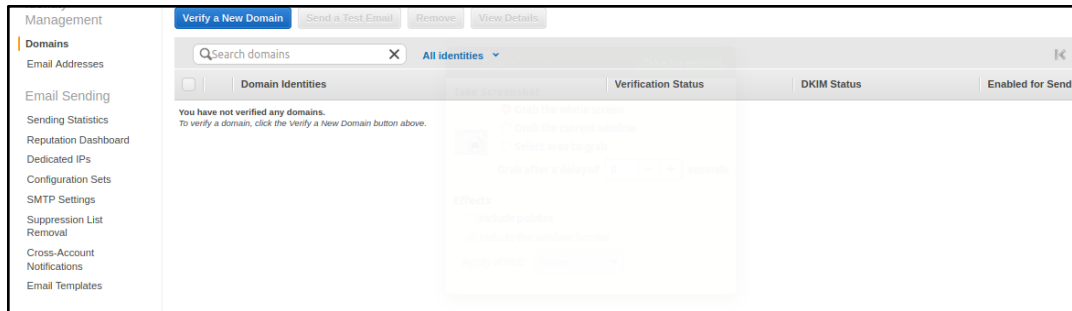
- A user can use any website to create a domain (Here, freenom has been used)



- Create a New Rule Set

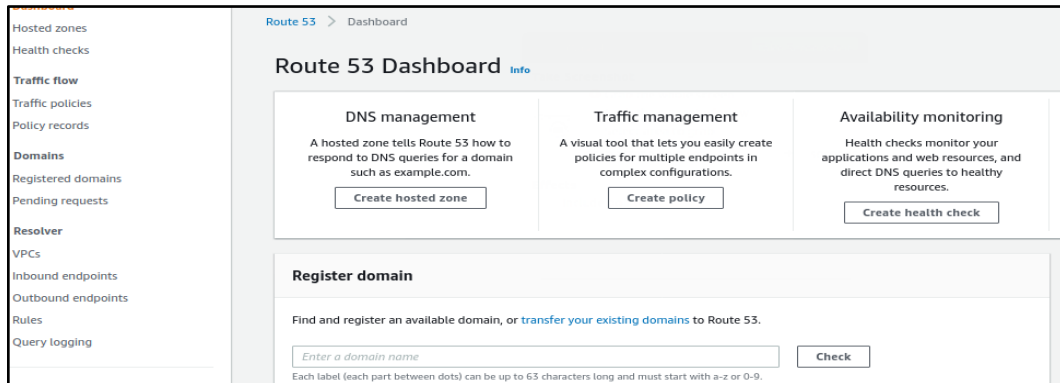


- Verify the domain on entering it

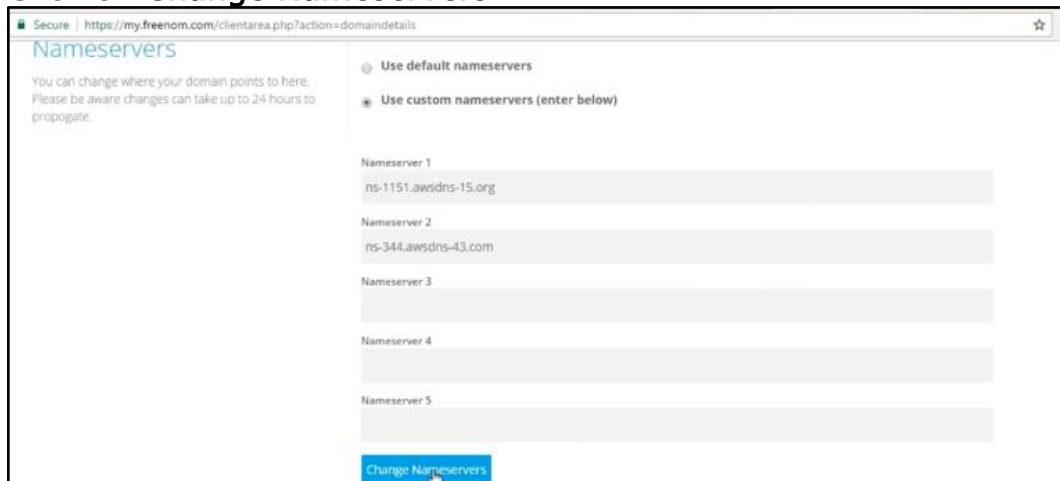


**Step 8: Create a hosted zone along with two record sets of type MX and TXT using Route 53**

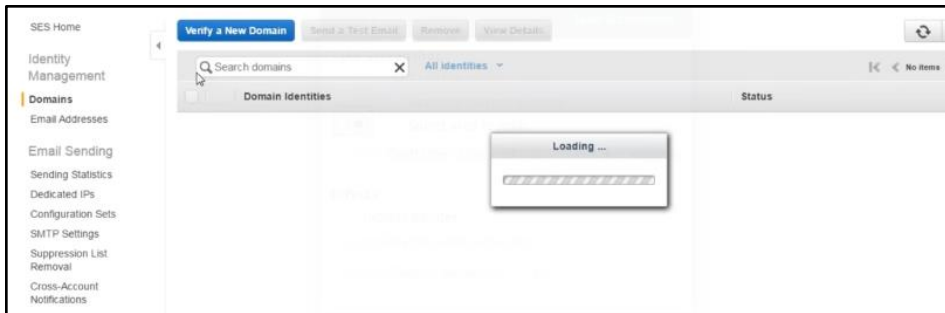
- **Select Route 53 from the dashboard**



- **Select DNS Management**
- **Enter the domain name and create the hosted zone**
- **Copy the value and paste it on freenom nameservers, 1 and 2**
- **Click on Change Nameservers**



- **Click on Create Record set**
- **Refresh the screen to check if the status is verified**

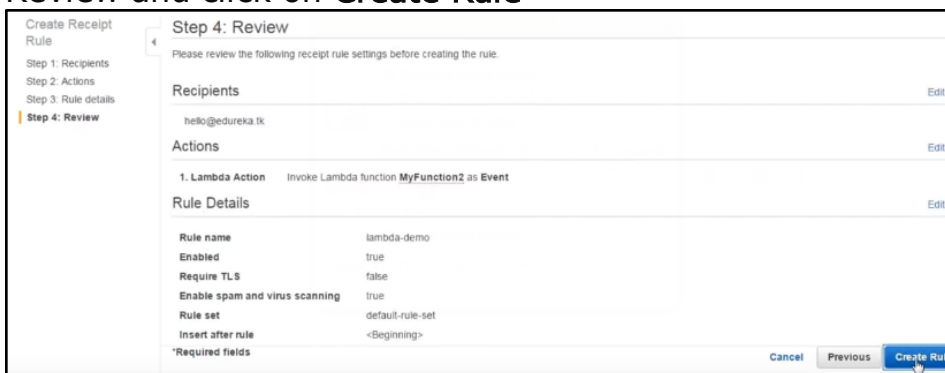


### Step 9: Create a receipt rule using Route 53

- Click on **Create Receipt Rule** under SES
- Click on **Create Rule** as shown below:



- Add recipient and rules
- Review and click on **Create Rule**



### Step 10: Check whether the file that is removed from the email moves to the empty bucket

- Upload a file from the website
- Check the S3 folder to see if the file is uploaded

Overview

Properties

Permissions

Management

Access points

Q

Type a prefix and press Enter to search. Press ESC to clear.

Upload

Create folder

Download

Actions

US East (N. Virginia)

Viewing 1 to 1

| <input type="checkbox"/> | Name        | Last modified                     | Size   | Storage class |
|--------------------------|-------------|-----------------------------------|--------|---------------|
| <input type="checkbox"/> | unnamed.jpg | Sep 17, 2020 11:14:28 PM GMT+0530 | 2.4 MB | Standard      |

Viewing 1 to 1

- Check the email to verify the folder name



- Reply **Move** to the mail thread; the file gets deleted from the existing folder and moves to another one

simplilearndemo-test

Overview

Properties

Permissions

Management

Access points

Upload

Create folder

Download

Actions

US East (N. Virginia)

This bucket is empty. Upload new objects to get started.

simplilearndemo-test

Overview

Properties

Permissions

Management

Access points

Q

Type a prefix and press Enter to search. Press ESC to clear.

Upload

Create folder

Download

Actions

US East (N. Virginia)

Viewing 1 to 1

| <input type="checkbox"/> | Name        | Last modified                     | Size   | Storage class |
|--------------------------|-------------|-----------------------------------|--------|---------------|
| <input type="checkbox"/> | unnamed.jpg | Sep 17, 2020 11:21:44 PM GMT+0530 | 2.4 MB | Standard      |