

# Experiment: 7

**Title :** Creating a lambda function in AWS to email daily reports

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**Aim :** Automate Sending Emails at a Specific Time with AWS Lambda, CloudWatch and SES

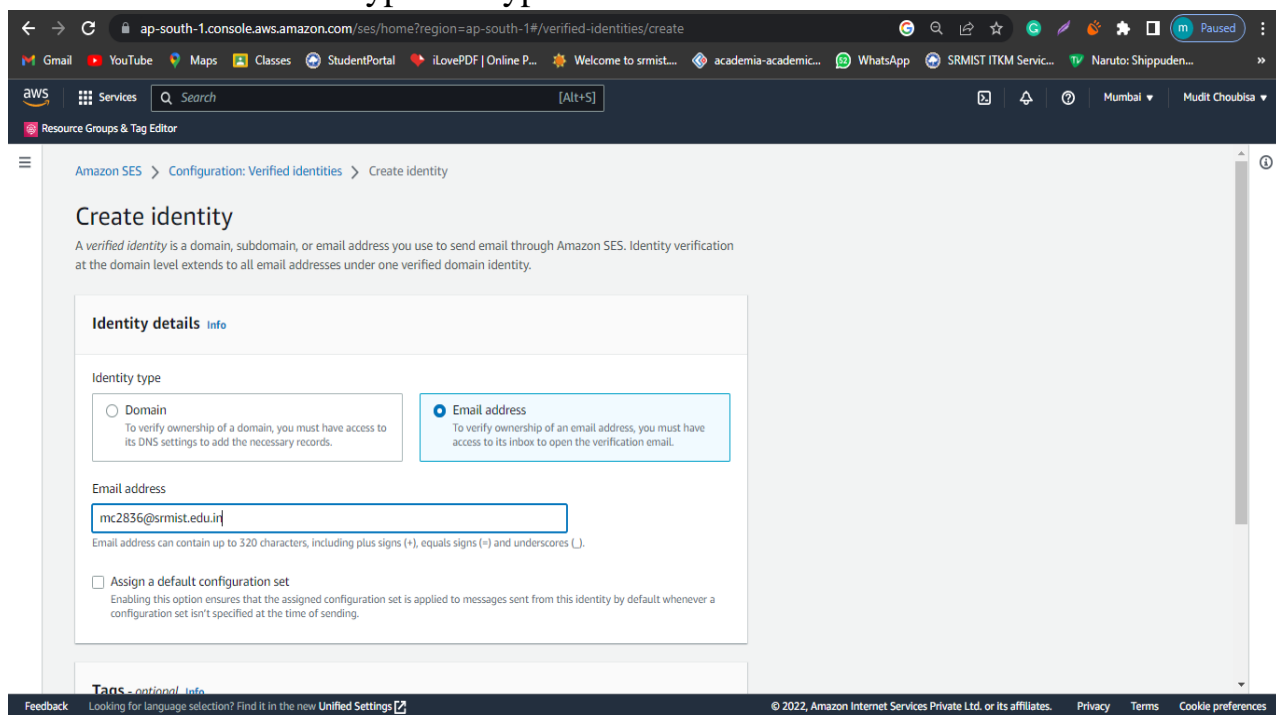
**Pre-requisites :** AWS Console, Amazon SES, Amazon Lambda, Amazon CloudWatch.

## Procedure :

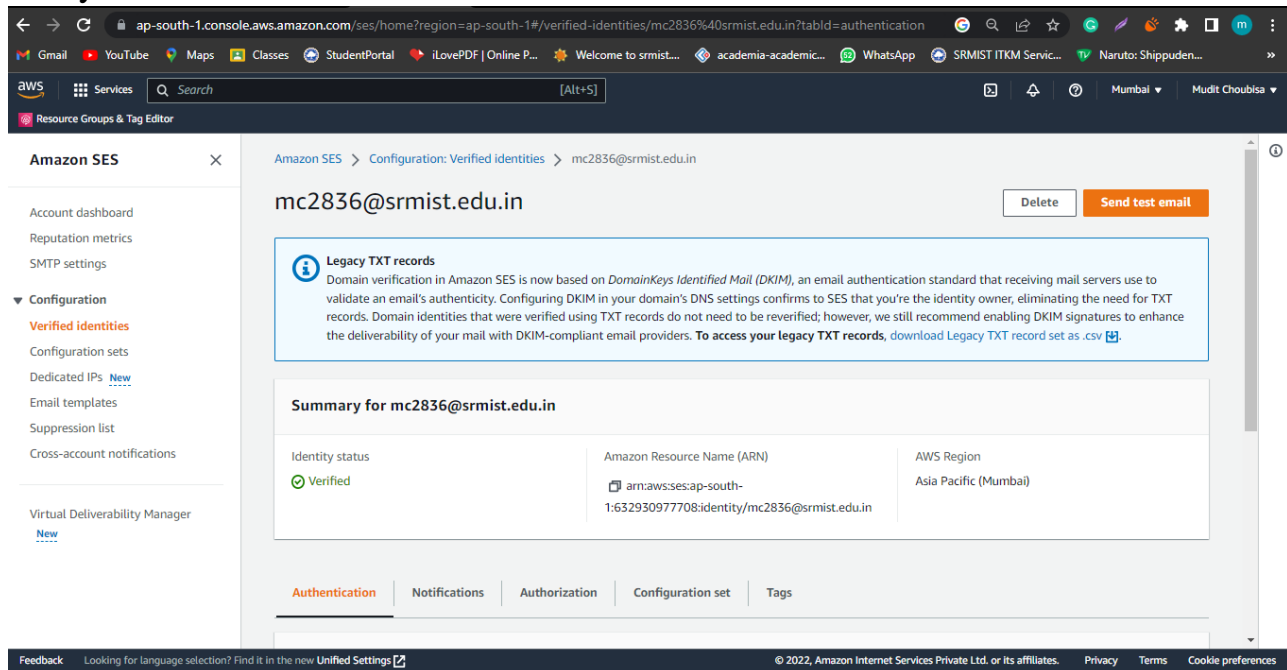
We are going automate sending email to a person or a group of people. AWS **Cloudwatch** is used to setup a schedule to trigger AWS **Lambda** function and then its going to use AWS **SES (Simple Email Service)** to send out emails to people.

Steps:

1. Go to AWS SES (Simple email service), click on “Create Identity”.  
Use email address as a type and type the email address.



2. Verify the email address that reviewed an email from aws to tell you to verify that.



3. Create two identities (email address).  
One for sending emails and another for receiving.
4. Create an IAM role.  
Give Use case as lambda and give full access to cloudwatch, SES.
5. Go to Lambda Service, create a lambda function.  
Give name, runtime as NodeJS, execution role as created IAM role previously.

**Basic information**

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

**Runtime** info  
 Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.

**Architecture** info  
 Choose the instruction set architecture you want for your function code.  
☒ x86\_64  
☐ arm64

**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.

[View the AutomateSendEmailRole role on the IAM console.](#)

6. Use this template for the code:

Successfully updated the function automate-send-emails.

Code Test Monitor Configuration Aliases Versions

**Code source** info

File Edit Find View Go Tools Window **Test** Deploy

Go to Anything (Ctrl-P)

Environment

- automate-send-emails
  - index.js

```

1
2 var aws = require("aws-sdk");
3 var ses = new aws.SES({ region: "us-west-2" });
4 exports.handler = async function(event) {
5   var params = {
6     Destination: {
7       ToAddresses: ["RecipientEmailAddress"],
8     },
9     Message: {
10      Body: {
11        Text: { Data: "Test" },
12      },
13    },
14    Source: "grubbyte@protonmail.com",
15  };
16  return ses.sendEmail(params).promise();
17 }
18
19
20

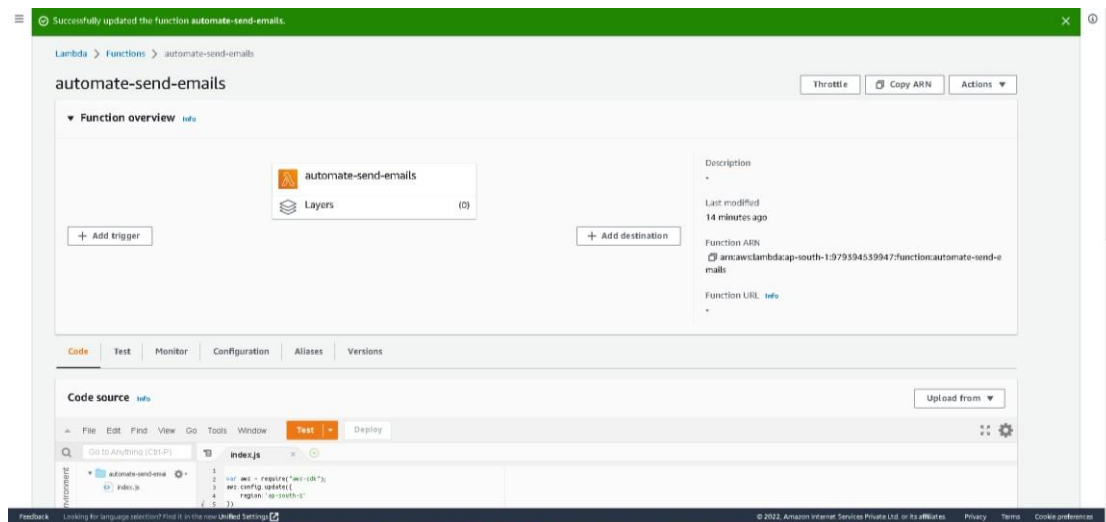
```

2341 JavaScript Spaces: 4

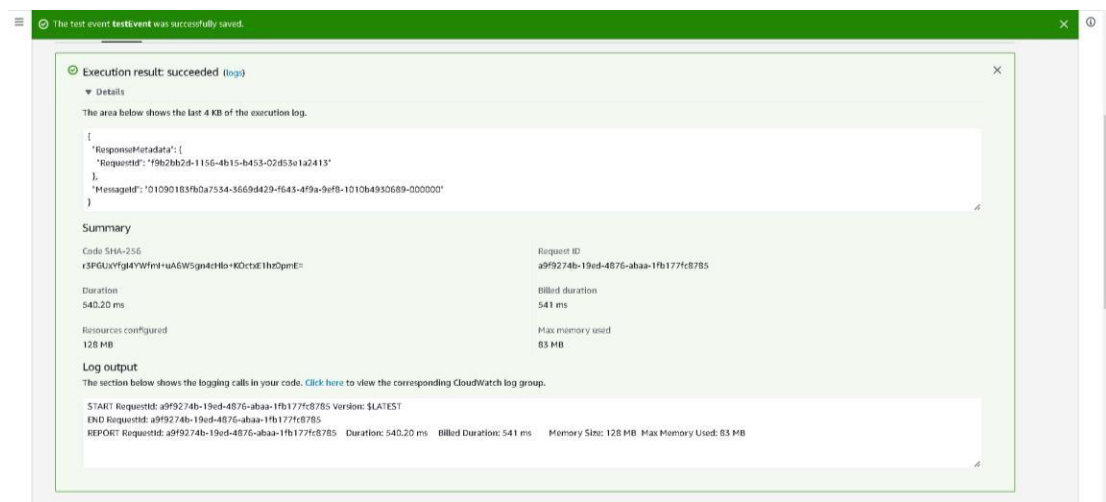
```

1)
2) var aws = require("aws-sdk");
3) var ses = new aws.SES({ region: "us-west-2" });
4) exports.handler = async function(event) {
5)   var params = {
6)     Destination: {
7)       ToAddresses: ["RecipientEmailAddress"],
8)     },
9)     Message: {
10)      Body: {
11)        Text: { Data: "Test" },

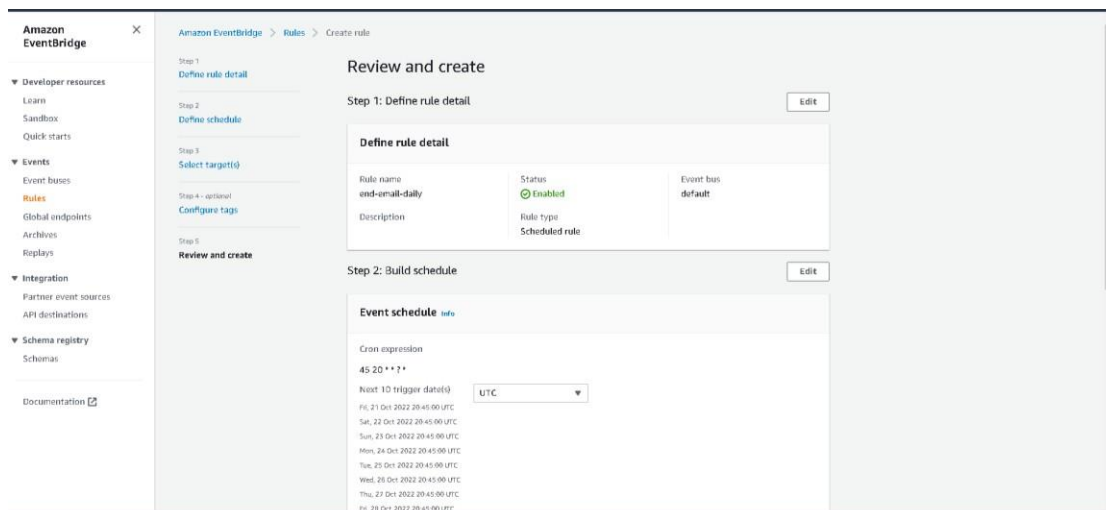
```



7. Click on Deploy and then TEST, you will receive the message in your mentioned emails.



- For scheduled daily report, go to AWS Cloudwatch , navigate to rule section (now called as eventBridge).



9. Create rule- give name, ruletype- schedule, use cron expression for schedule pattern .

For e.g. : 15 19 \* \* ? \*

Amazon EventBridge

Amazon EventBridge > Rules > Create rule

Step 1  
Define rule detail

Step 2  
**Define schedule**

Step 3  
Select target(s)

Step 4 - optional  
Configure tags

Step 5  
Review and create

### Define schedule info

#### Schedule pattern

Choose the schedule type that best meets your needs.

☒ A fine-grained schedule that runs at a specific time, such as 8:00 a.m. PST on the first Monday of every month.

☐ A schedule that runs at a regular rate, such as every 10 minutes.

#### Cron expression info

Define the cron expression for the schedule.

☒ cron (       )

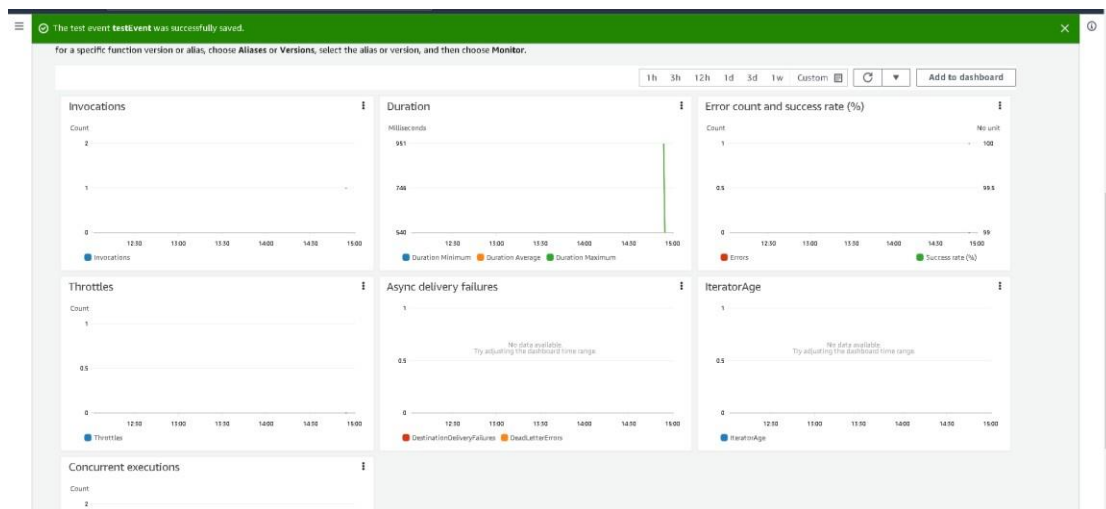
Next 10 trigger date(s)

Scheduled dates will be generated here upon resolving a valid cron expression.

Cancel Previous **Next**

10. Select Targets as lambda function, and use the above defined function.

11. Go to monitoring in Lambda service, click on View logs in cloudWatch and check your mail inbox .



**CloudWatch**

Log group does not exist  
The specific log group: `/aws/lambda/automate-send-emails` does not exist in this account or region.

View existing log groups

Retention: Never expire  
KMS key ID: -  
Creation time: 8 minutes ago  
Metric filters: 0  
Stored bytes: -  
Subscription filters: 0  
Contributor insights rules: -  
ARN: `arn:aws:logs:us-east-1:1079594559947:log-group:/aws/lambda/automate-send-emails*`

Log streams (1/1)

Filter log streams or by prefix search  Exact match

Log stream

Log stream	Last event time
2022/10/21/[\$LATEST]j22c33e18564243459f402140ea013cafe	2022-10-21 20:24:04 (UTC+05:30)

**Result:**

Hence, the lambda function is created and also implemented using SES, CloudWatch to schedule daily reports.