

AWS LAMBDA

IN SIMPLE WORDS

Run code without thinking about servers, pay for only the compute time you consume.

What is lambda?

- It is a server less compute.
- Automatically run code in response to multiple events.
- Lambda runs your code on high-availability compute infrastructure.
- Don't worry about administration of the compute resources.
- All you need to do is supply the code.

What language does AWS lambda supports?

- It is written in node.js (JavaScript's), python, java(Java 8 compatible), and C#
- Your code can include existing libraries, even native once. Please read our documentation on using Nodes.js, Python, Java and C #.

How does AWS Lambda secures my code?

- It is store the code in S3 and encrypts it is rest.
- It performs additional integrity checks while your code is in use.

How long my code runs in AWS Lambda function and execute?

- All calls made to AWS Lambda must complete execution within 300 seconds.
- The default time out is 3 seconds, but you can set the timeout to any value between 1 and 300 seconds.

Programming model

- Handler
- Context
- Event
- Logging
- Exception

Components of Lambda

- Source code where events captured (S3, Dynamo DB, Kinesis, etc...)
- Lambda service with your code.
- Cloud Watch log groups and log stream to capture logs.
- IAM role

These are the Task:

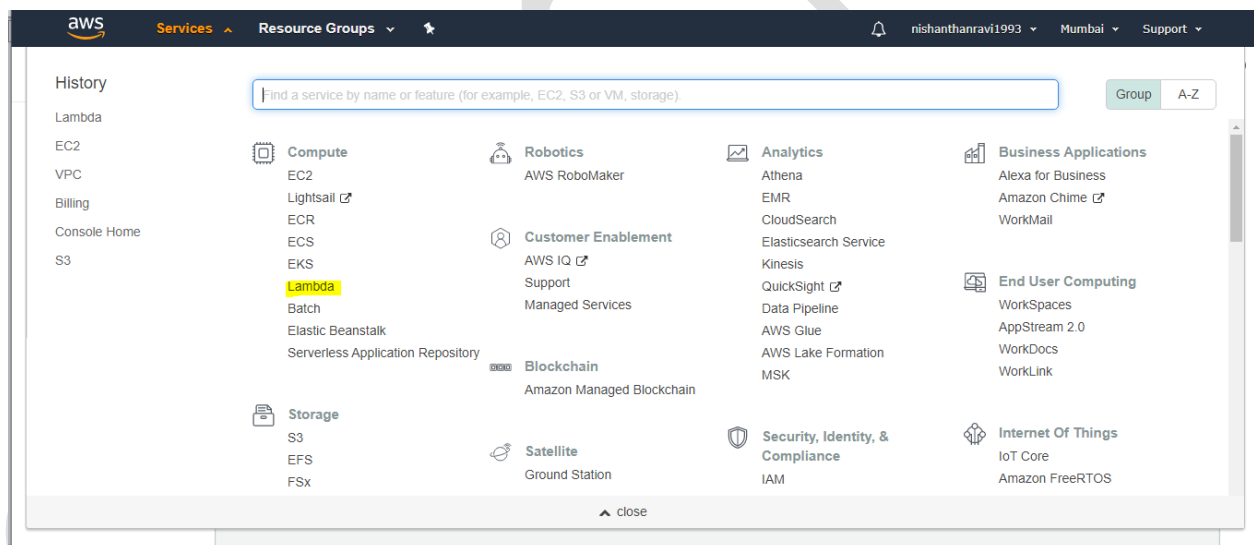
- 1. Manual triggering**
- 2. Scheduled base**
- 3. Automatic triggering**

Manual triggering:

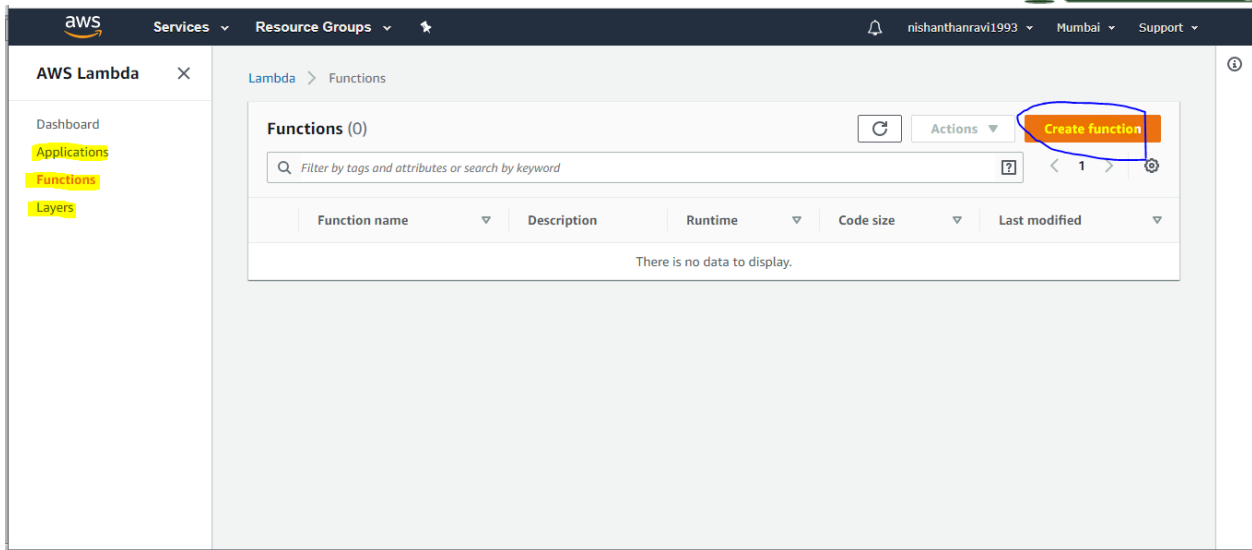
Let see the LAMBDA function

Now see the under compute

Lambda

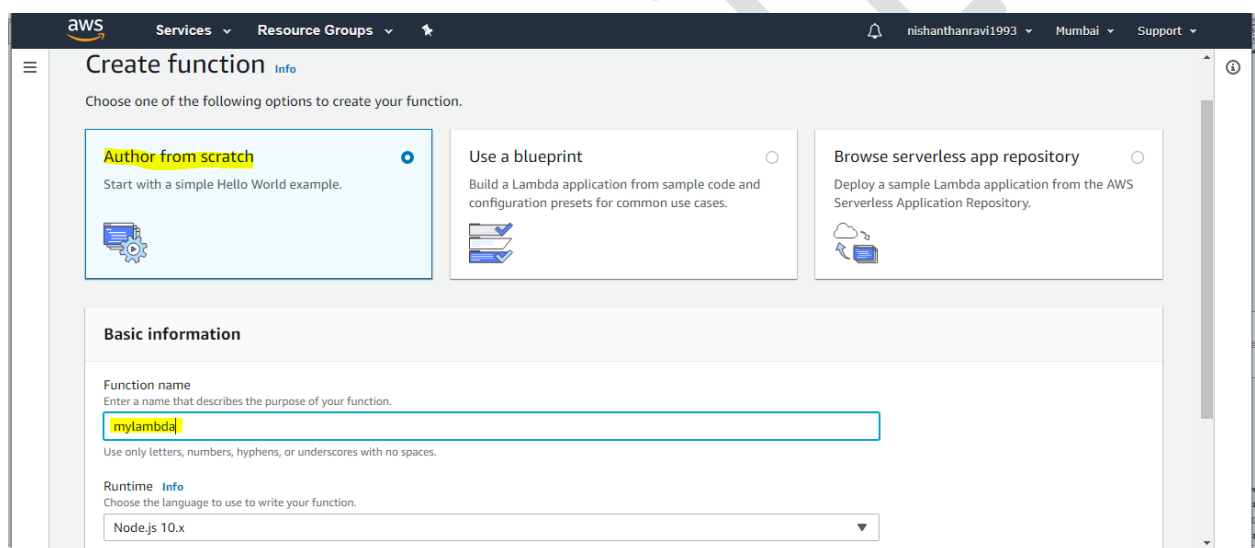


Create one function

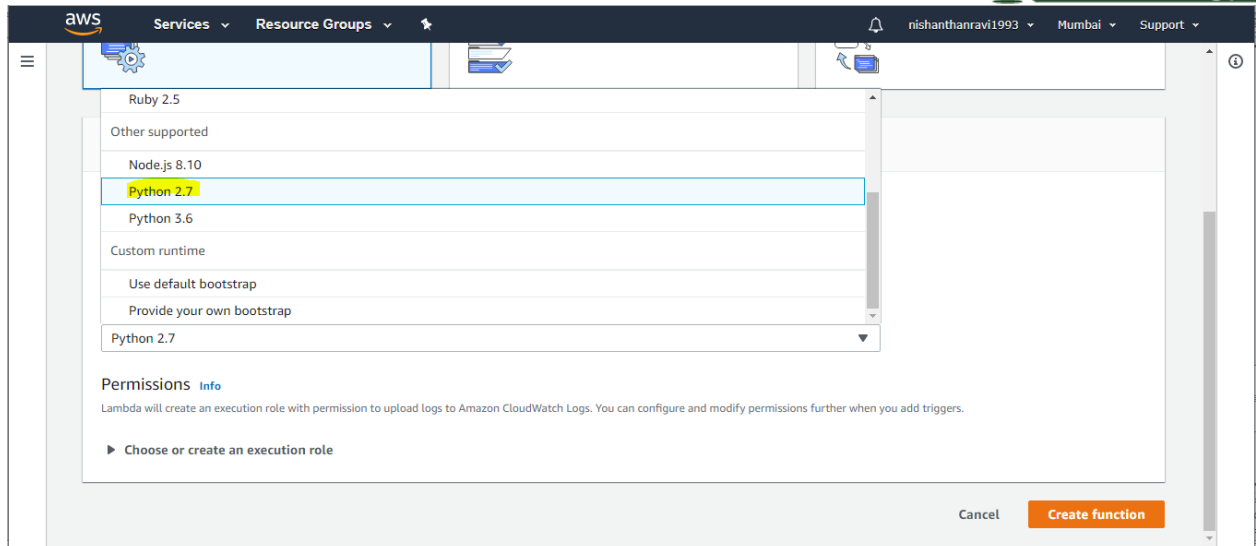


Tag the name

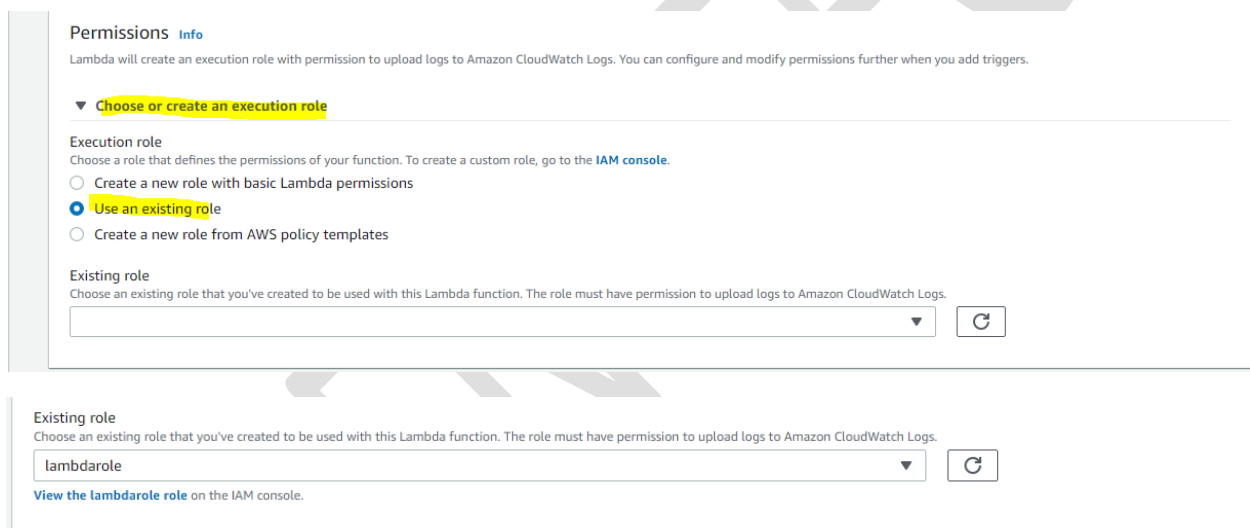
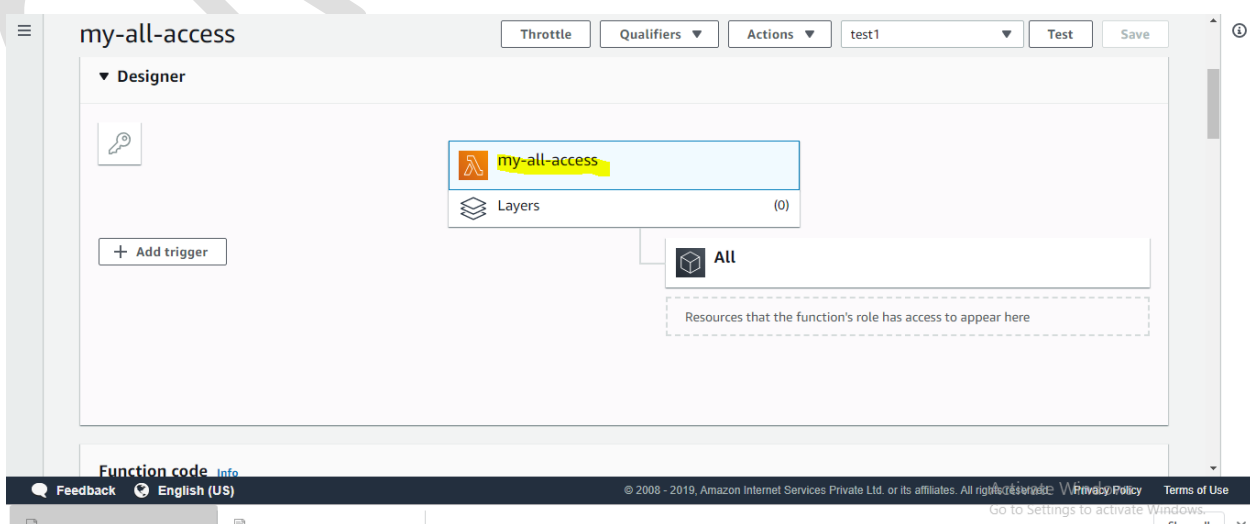
Create the function name in unique



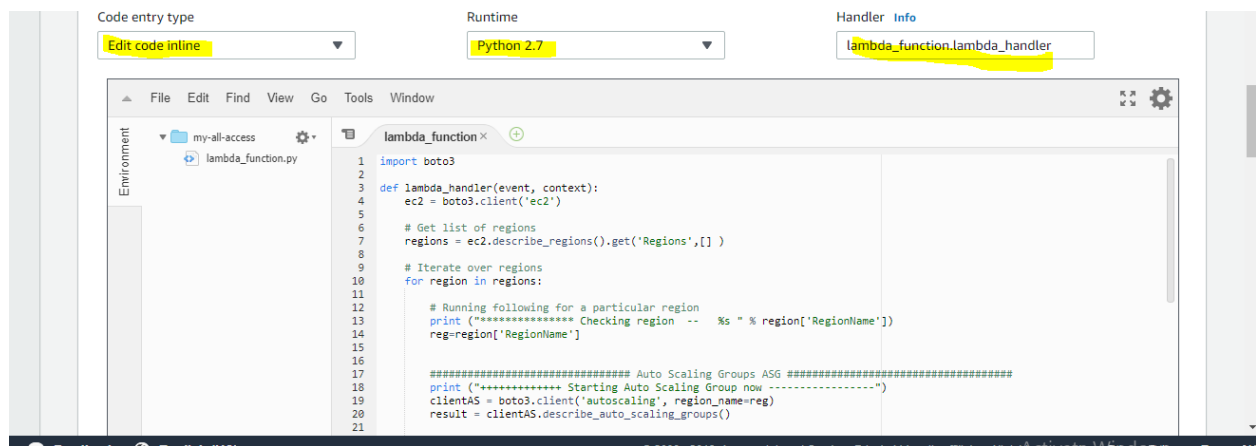
Use python2.7



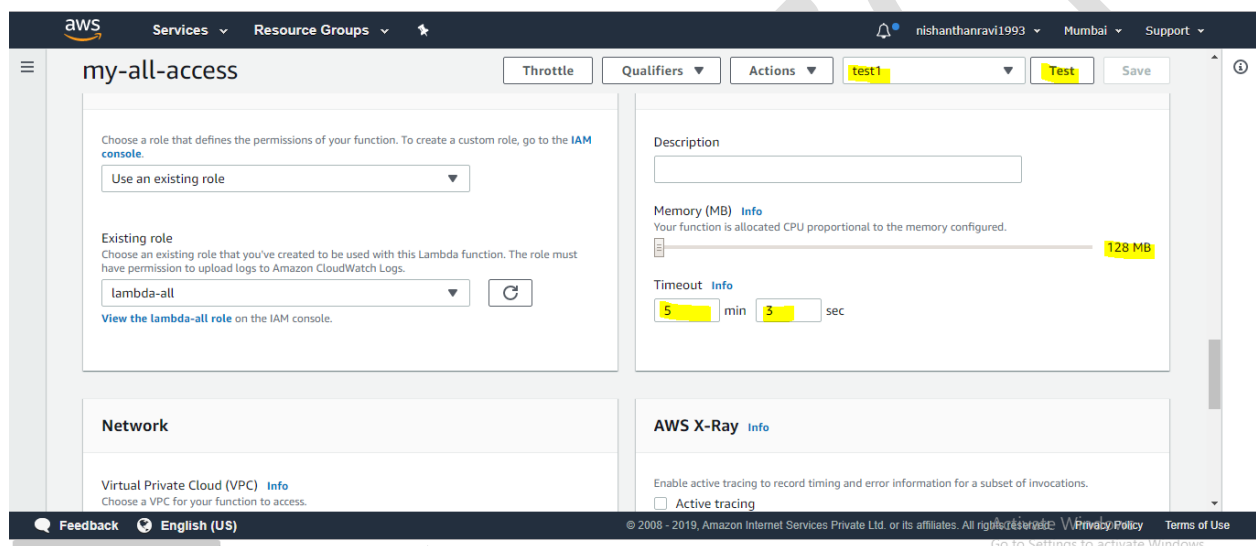
Use your IAM role

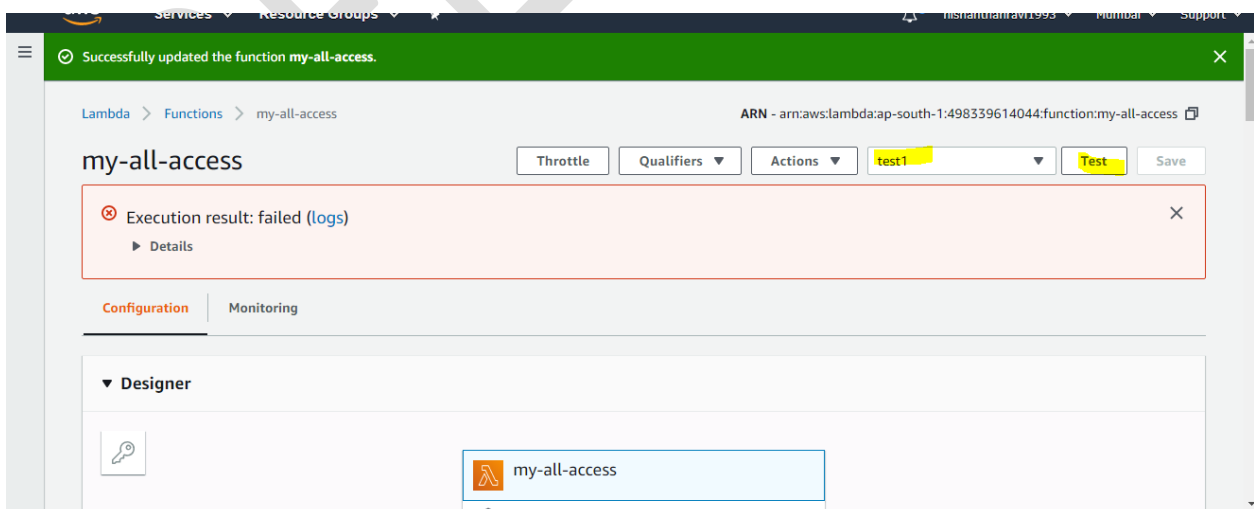
Add your code here



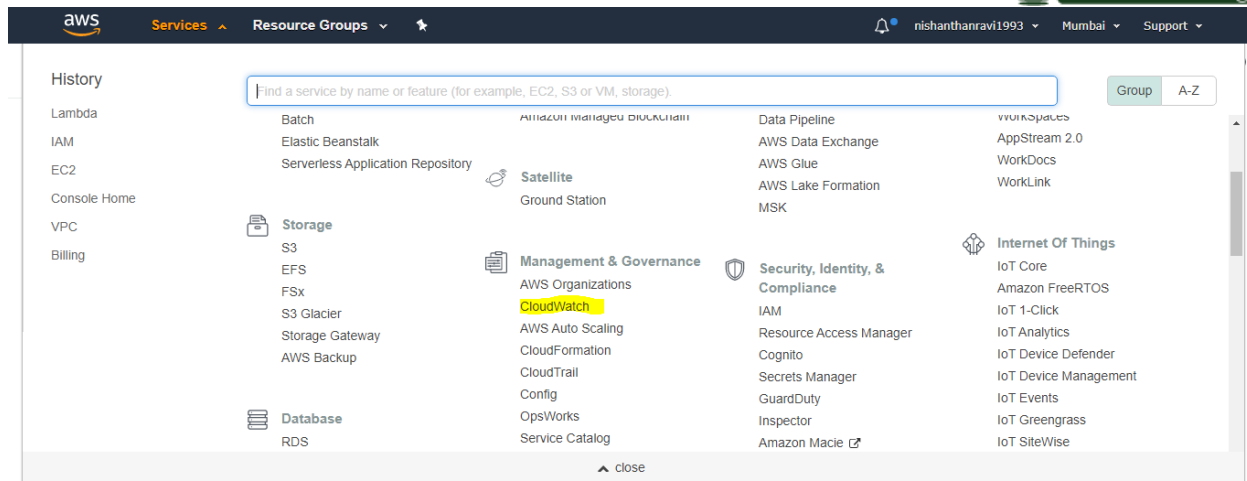
And give timing as 5mts



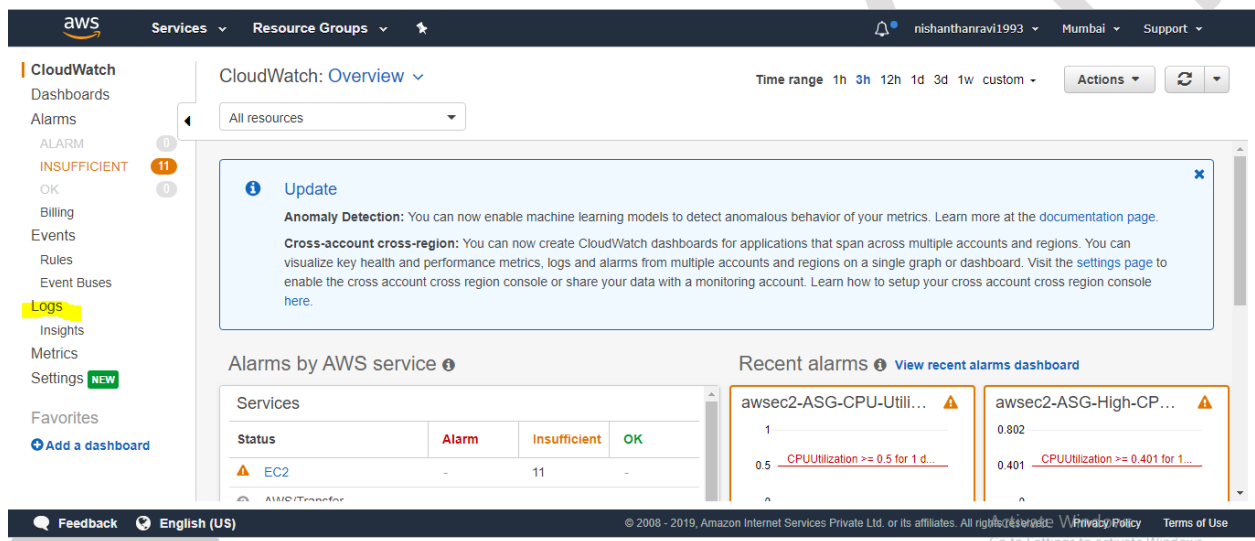
And add the event



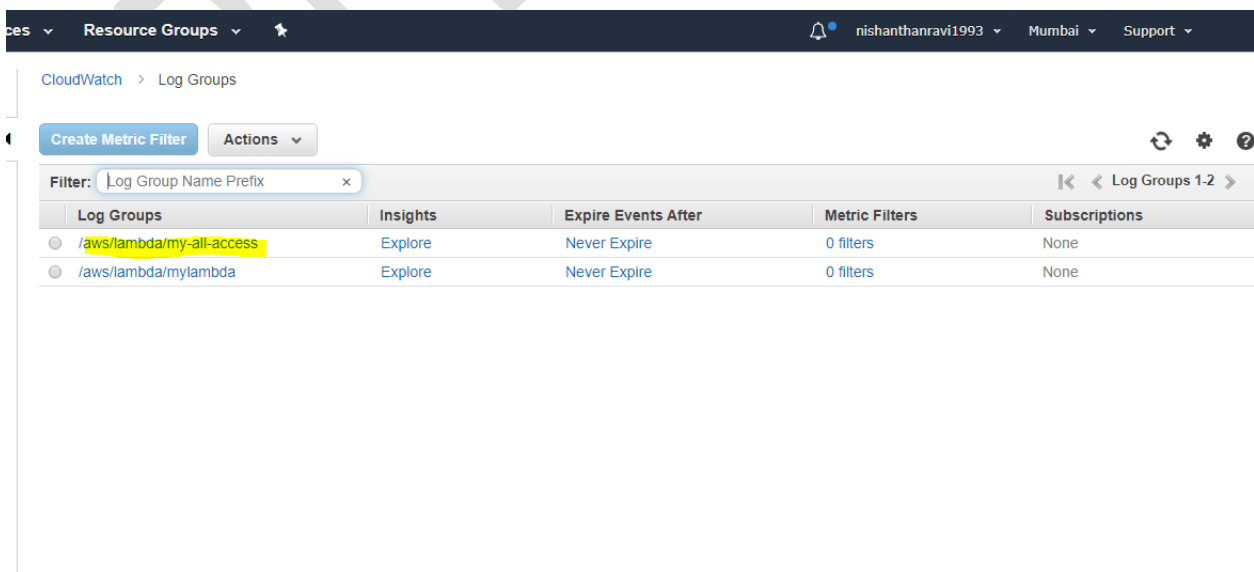
And run the code and see in the cloud watch



Login to service

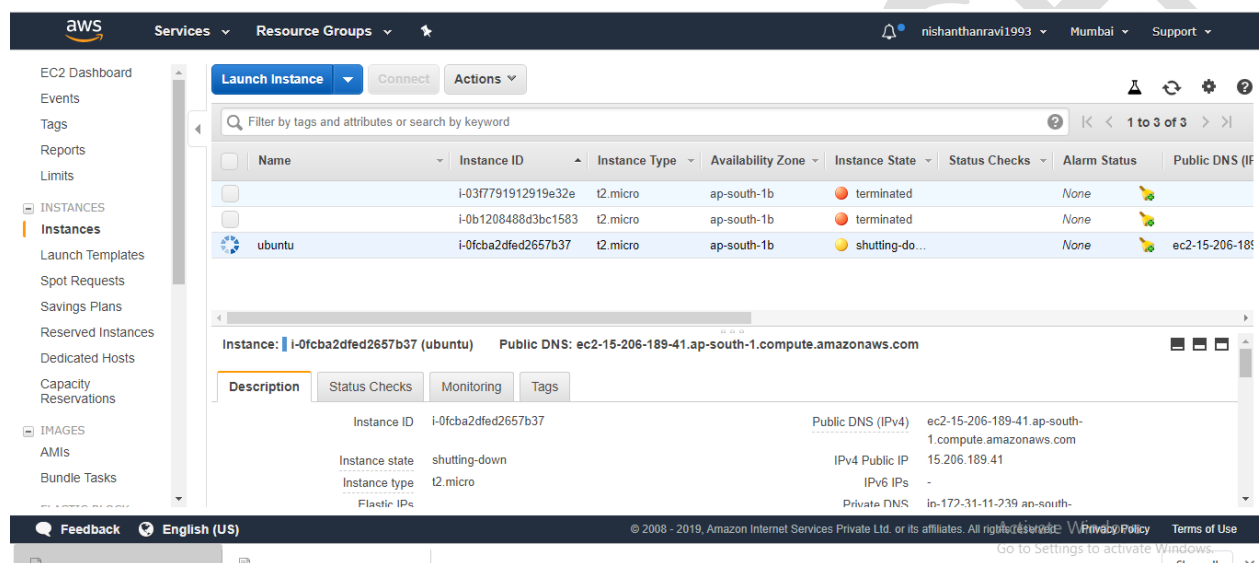


Open the file and you can see the operation is done or not



Filter events		all 2019-11-13 (05:32)
Time (UTC +00:00)	Message	
2019-11-14		
No older events found at the moment. Retry .		
05:32:12	START RequestId: c19d3ca8-df4a-4773-a1c6-e291daa7578a Version: \$LATEST	
05:32:16	***** Checking region -- eu-north-1	
05:32:16	***** Starting Auto Scaling Group now -----	
05:32:17	***** Starting LoadBalancers now [NLB & ALB] -----	
05:32:18	***** Starting LoadBalancers now [Classic LB] -----	
05:32:19	***** Starting Target Groups now -----	
05:32:20	***** Starting NAT Gateways now -----	

Now you can see the instance is shutting down



The screenshot shows the AWS Management Console interface. On the left, the navigation menu includes 'EC2 Dashboard', 'Events', 'Tags', 'Reports', 'Limits', 'INSTANCES', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity Reservations', 'IMAGES', 'AMIs', and 'Bundle Tasks'. The 'INSTANCES' section is selected, showing a table of EC2 instances. The table has columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS (if applicable). Three instances are listed: two are 'terminated' and one is 'shutting-down...'. The 'shutting-down' instance is named 'ubuntu' with Instance ID 'i-0fcba2dfed2657b37' and is in the 'ap-south-1b' Availability Zone. Below the table, the details for the 'shutting-down' instance are shown, including its Public DNS, Instance ID, Instance state (shutting-down), Instance type (t2.micro), and Private DNS.

Scheduled base:

Go to events and create it

aws Services Resource Groups

CloudWatch Dashboards Alarms **Events** Rules Event Buses Logs Insights Metrics Settings **NEW** Favorites [Add a dashboard](#)

Step 1: Create rule

Create rules to invoke Targets based on Events happening in your AWS environment.

Event Source

Build or customize an Event Pattern or set a Schedule to invoke Targets.

☐ Event Pattern ☒ **Schedule**

☒ **Fixed rate of** 9 **Minutes**

☐ Cron expression `* * * * *`

[Learn more about CloudWatch Events schedules.](#)

► Show sample event(s)

Targets

Select Target to invoke when an event matches your Event Pattern or when schedule is triggered.

SNS topic

Topic*

► Configure input

[Add target*](#)

* Required

[Cancel](#) [Configure details](#)

Feedback English (US) © 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use

CleanItAll.py lambda and cloudtr...txt

And you can add your SNS topic

Now create five instances

aws Services Resource Groups

EC2 Dashboard Events Tags Reports Limits **INSTANCES** **Instances** Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations **IMAGES** AMIs Bundle Tasks **PLACED BLOCK**

[Launch Instance](#) [Connect](#) [Actions](#)

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (If
	i-03f7791912919e32e	t2.micro	ap-south-1b	terminated		None	
	i-04ab4234923babe...	t2.micro	ap-south-1b	pending	Initializing	None	ec2-15-206-164
	i-04b2511755c103236	t2.micro	ap-south-1b	pending	Initializing	None	ec2-52-66-251-
	i-05f590d8990895234	t2.micro	ap-south-1b	pending	Initializing	None	ec2-13-126-164
	i-066bf530a450f2316	t2.micro	ap-south-1b	pending	Initializing	None	ec2-52-66-238-
	i-085eb2b2c7b72570d	t2.micro	ap-south-1b	pending	Initializing	None	ec2-15-206-17f
	i-0b1208488d3bc1583	t2.micro	ap-south-1b	terminated		None	
ubuntu	i-0fcba2fde2657b37	t2.micro	ap-south-1b	terminated		None	

Select an instance above

Feedback English (US) © 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use

The code runs after 5mins

aws Services Resource Groups

Events **Rules** Event Buses Logs Insights Metrics Settings **NEW**

[Create rule](#) [Actions](#)

Status Name

◀ < Viewing 1 to 1 of 1 Rules >

Status	Name	Description
<input checked="" type="radio"/>	deleteall	delete all

aws Services Resource Groups nishantharavi1993 Mumbai Support

my-all-access

Throttle Qualifiers Actions test1 Test Save

Execution result: failed (logs) Details

Configuration Monitoring

Designer

my-all-access

Layers (0)

+ Add trigger

Feedback English (US) © 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use

my-all-access Throttle Qualifiers Actions test1 Test Save

Executing function... Details

Configuration Monitoring

Designer

my-all-access

Layers (0)

+ Add trigger

Feedback English (US) © 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use

CleanItAll.py lambda and cloudtr...bt

Type here to search

11:16 14-11-2019

aws Services Resource Groups nishantharavi1993 Mumbai Support

EC2 Dashboard

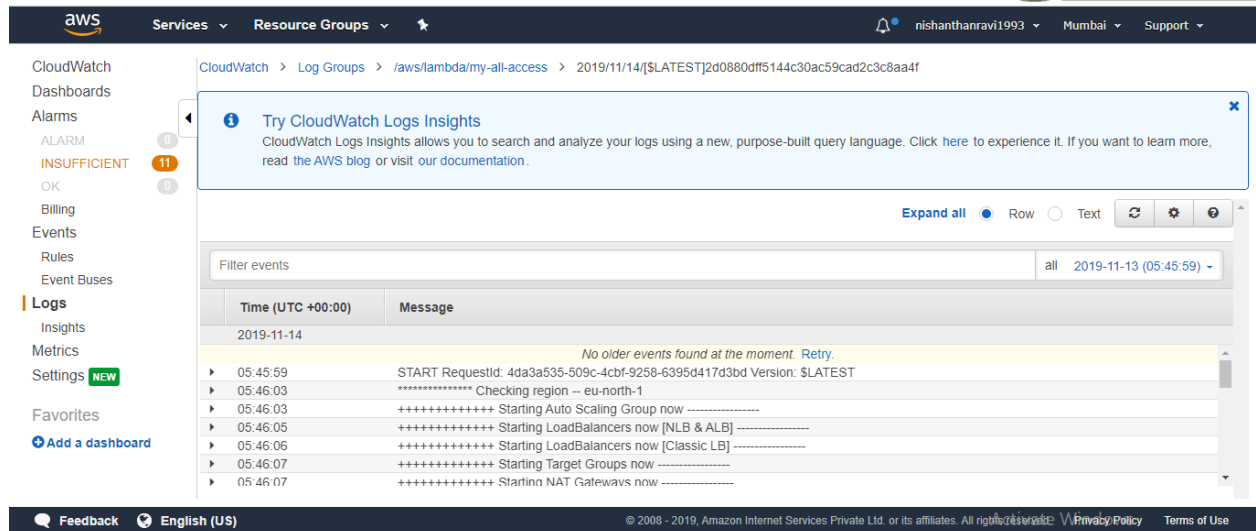
Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IF
	i-037791912919e32e	t2.micro	ap-south-1b	terminated	None		
	i-04ab4234923babe...	t2.micro	ap-south-1b	shutting-do...	None		ec2-15-206-16...
	i-04b2511755c103236	t2.micro	ap-south-1b	shutting-do...	None		ec2-52-66-251-
	i-05f590d8990895234	t2.micro	ap-south-1b	shutting-do...	None		ec2-13-126-16...
	i-066b530a450f2316	t2.micro	ap-south-1b	shutting-do...	None		ec2-52-66-238-
	i-085eb2b2c7b72570d	t2.micro	ap-south-1b	shutting-do...	None		ec2-15-206-17...
	i-0b120848d3bc1583	t2.micro	ap-south-1b	terminated	None		
ubuntu	i-0fcb2dfed2657b37	t2.micro	ap-south-1b	terminated	None		

Select an instance above

Feedback English (US) © 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use

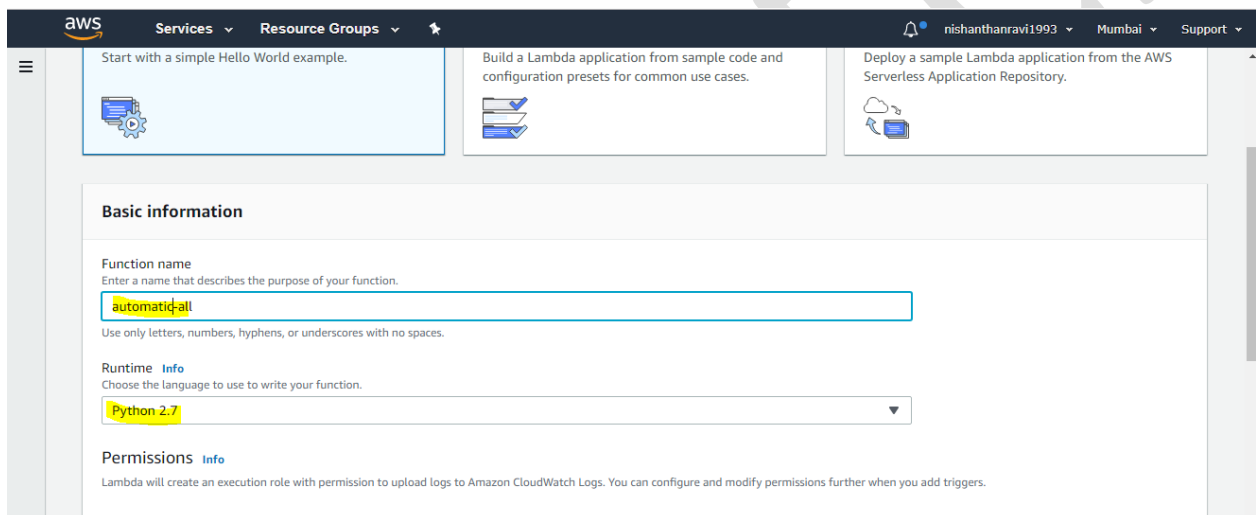


Try CloudWatch Logs Insights
CloudWatch Logs Insights allows you to search and analyze your logs using a new, purpose-built query language. Click [here](#) to experience it. If you want to learn more, read the [AWS blog](#) or visit our [documentation](#).

Filter events: all 2019-11-13 (05:45:59)

Time (UTC +00:00)	Message
2019-11-14	No older events found at the moment. Retry .
05:45:59	START RequestId: 4da3a535-509c-4cbf-9258-6395d417d3bd Version: \$LATEST
05:46:03	***** Checking region -- eu-north-1
05:46:03	***** Starting Auto Scaling Group now *****
05:46:05	***** Starting LoadBalancers now [NLB & ALB] *****
05:46:06	***** Starting LoadBalancers now [Classic LB] *****
05:46:07	***** Starting Target Groups now *****
05:46:07	***** Starting NAT Gateways now *****

Automatic triggering:



Start with a simple Hello World example.

Build a Lambda application from sample code and configuration presets for common use cases.

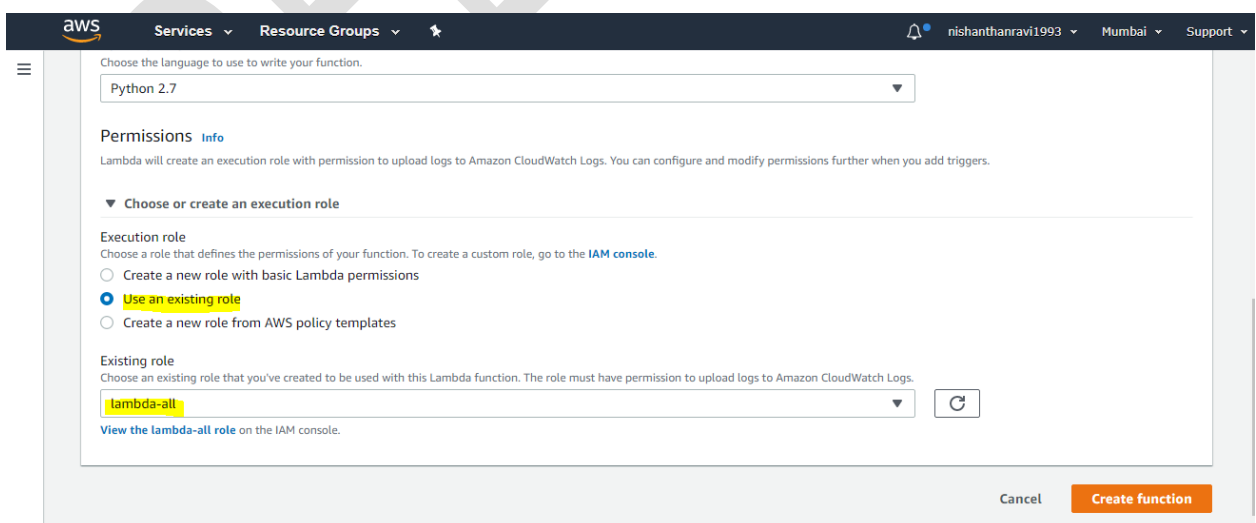
Deploy a sample Lambda application from the AWS Serverless Application Repository.

Basic information

Function name
Enter a name that describes the purpose of your function.
automatic-all

Runtime [Info](#)
Choose the language to use to write your function.
Python 2.7

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 the language to use to write your function.
Python 2.7

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

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

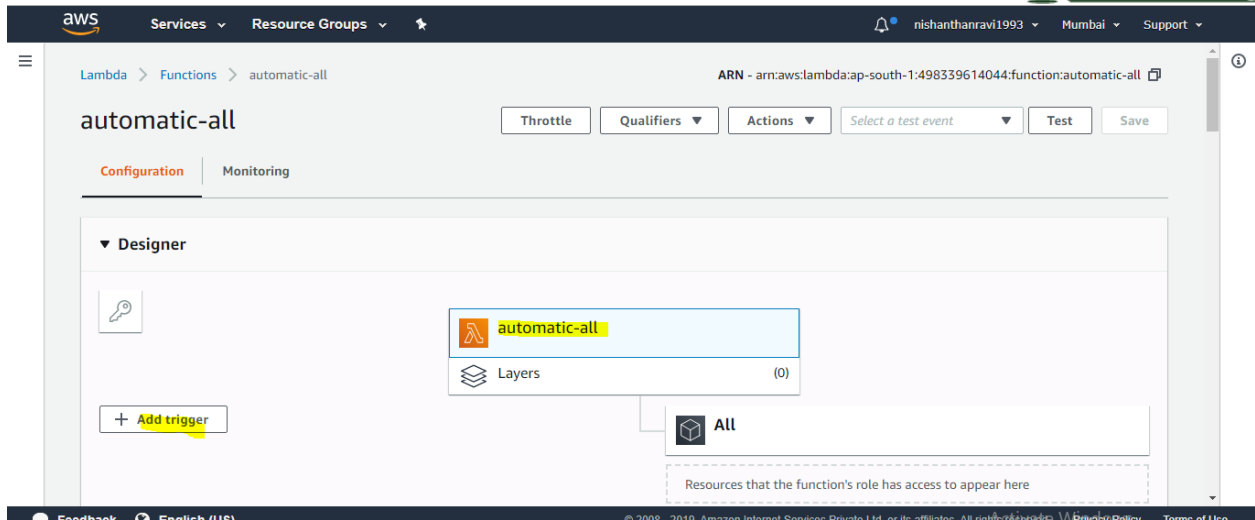
☒ **Use an existing role**

☐ 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.
lambda-all

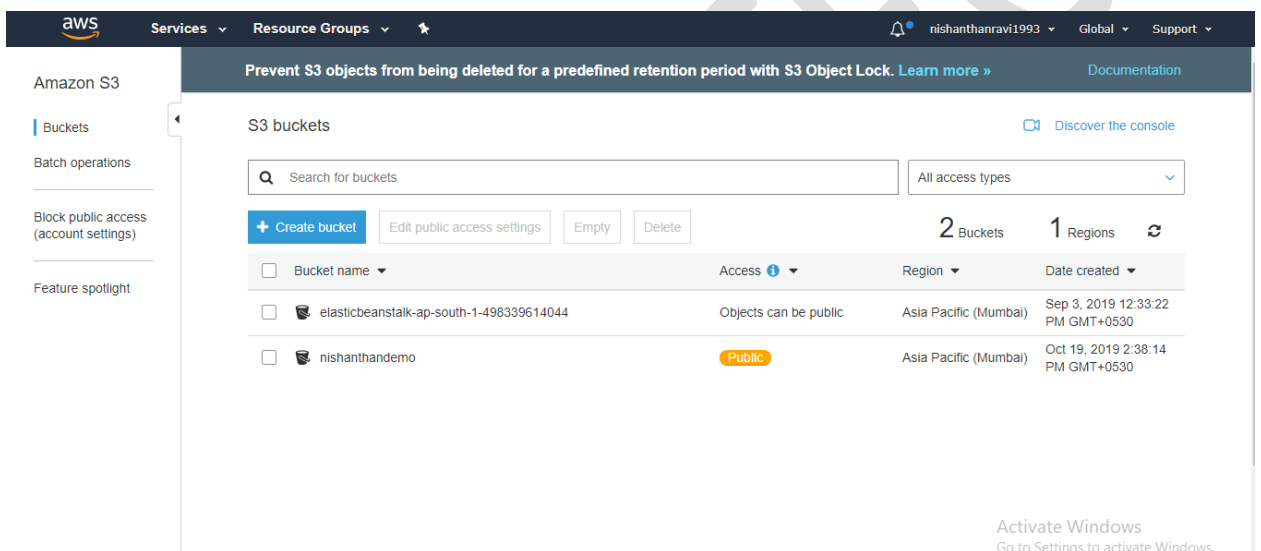
[View the lambda-all role on the IAM console.](#)

[Cancel](#) [Create function](#)



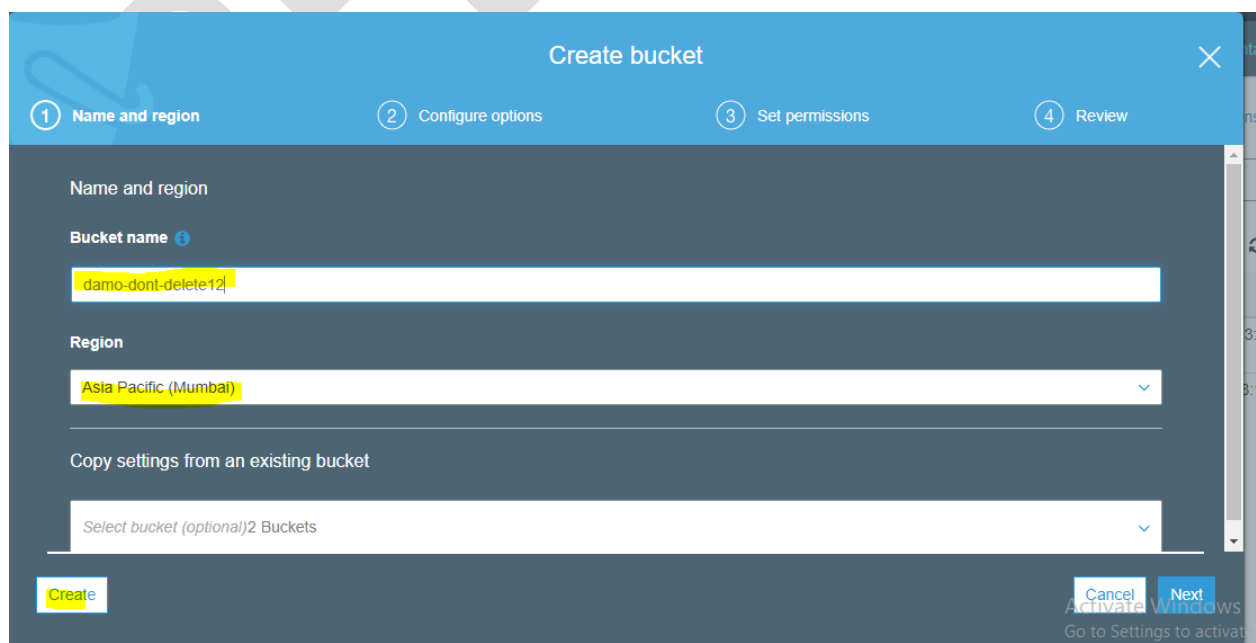
The screenshot shows the AWS Lambda console for the function 'automatic-all'. The ARN is 'arn:aws:lambda:ap-south-1:498339614044:function:automatic-all'. The configuration tab is active, showing the Designer view. The function is linked to the 'All' event source. The Layers section is empty. The bottom of the console shows the footer with '© 2008 - 2019 Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. V/A Privacy Policy Terms of Use'.

Create an S3 bucket



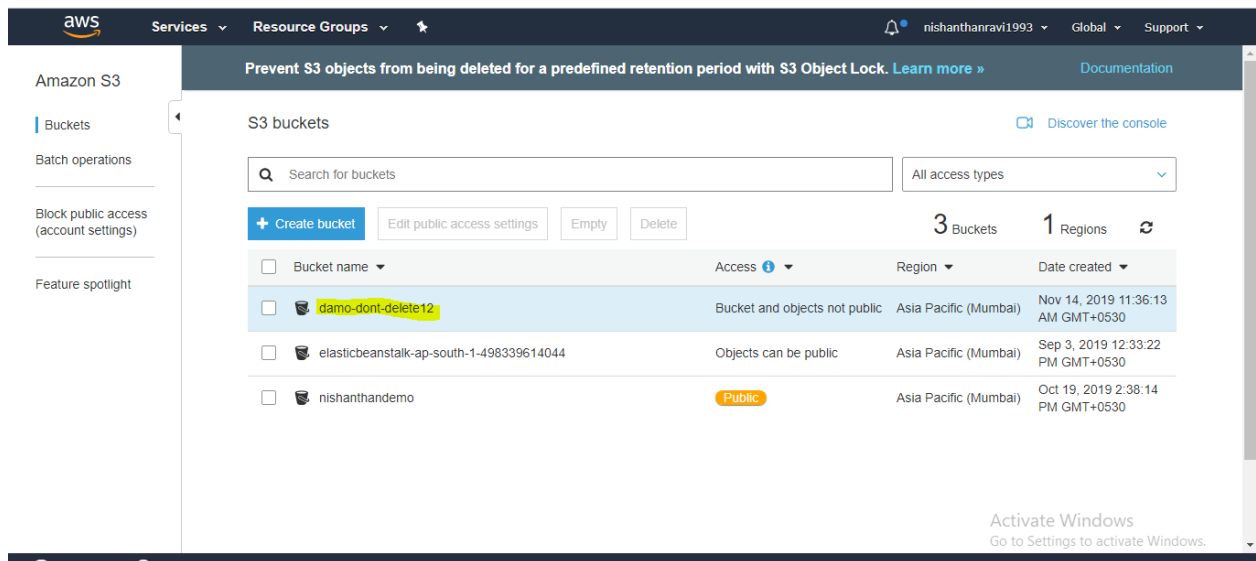
The screenshot shows the AWS S3 console 'S3 buckets' page. The left sidebar shows 'Amazon S3' with 'Buckets' selected. The main content area shows a search bar, a '+ Create bucket' button, and a table of existing buckets. The table has columns for 'Bucket name', 'Access', 'Region', and 'Date created'. Two buckets are listed: 'elasticbeanstalk-ap-south-1-498339614044' and 'nishanthandemo'.

Bucket name	Access	Region	Date created
elasticbeanstalk-ap-south-1-498339614044	Objects can be public	Asia Pacific (Mumbai)	Sep 3, 2019 12:33:22 PM GMT+0530
nishanthandemo	Public	Asia Pacific (Mumbai)	Oct 19, 2019 2:38:14 PM GMT+0530



The screenshot shows the 'Create bucket' wizard in the AWS S3 console. The wizard has four steps: 1. Name and region, 2. Configure options, 3. Set permissions, and 4. Review. The first step is active, showing the 'Bucket name' field with the value 'damo-dont-delete12', the 'Region' dropdown set to 'Asia Pacific (Mumbai)', and a 'Copy settings from an existing bucket' section with a dropdown set to 'Select bucket (optional)'. The 'Create' button is highlighted.

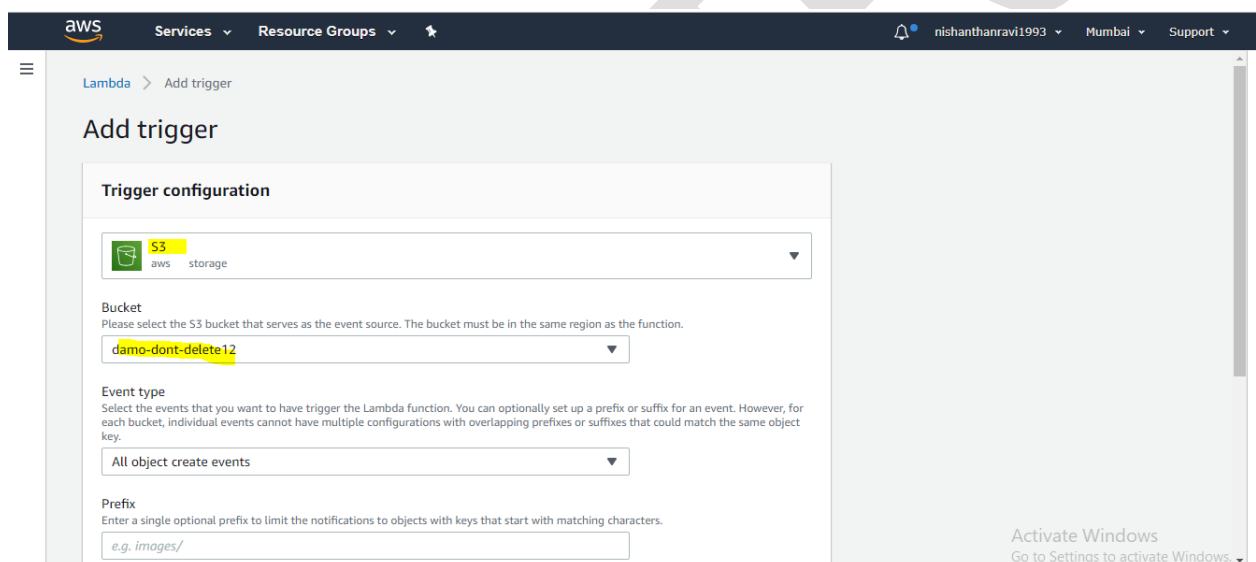
damo-dont-delete1



The screenshot shows the AWS S3 Buckets console. The left sidebar contains navigation links for Amazon S3, Buckets, Batch operations, Block public access (account settings), and Feature spotlight. The main content area is titled "S3 buckets" and includes a search bar, a "Create bucket" button, and buttons for "Edit public access settings", "Empty", and "Delete". A table lists three buckets:

Bucket name	Access	Region	Date created
damo-dont-delete12	Bucket and objects not public	Asia Pacific (Mumbai)	Nov 14, 2019 11:36:13 AM GMT+0530
elasticbeanstalk-ap-south-1-498339614044	Objects can be public	Asia Pacific (Mumbai)	Sep 3, 2019 12:33:22 PM GMT+0530
nishanthandemo	Public	Asia Pacific (Mumbai)	Oct 19, 2019 2:38:14 PM GMT+0530

At the bottom right, there is an "Activate Windows" watermark with the text "Go to Settings to activate Windows."



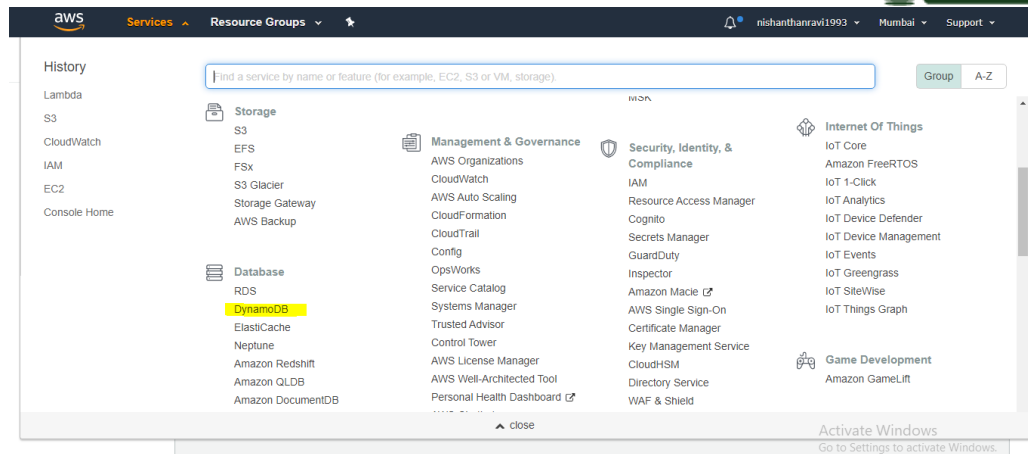
The screenshot shows the "Add trigger" configuration page in the AWS Lambda console. The "Trigger configuration" section is expanded, showing the following settings:

- Service:** S3 (aws storage)
- Bucket:** damo-dont-delete12
- Event type:** All object create events
- Prefix:** e.g. images/
- Suffix:** .csv

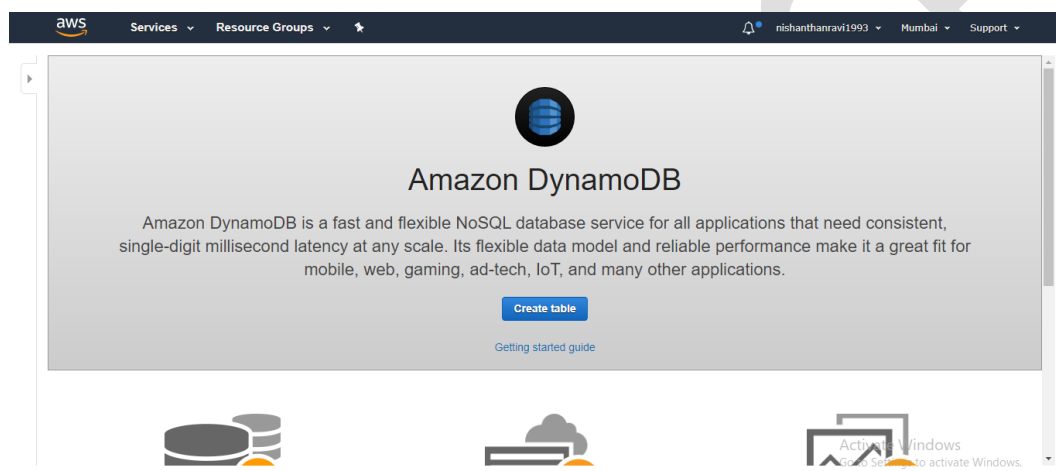
At the bottom, there is a checkbox labeled "Enable trigger" which is checked. Below it, a note states: "Lambda will add the necessary permissions for Amazon S3 to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model."

At the bottom right, there is an "Activate Windows" watermark with the text "Go to Settings to activate Windows."

Now go to dynamo db

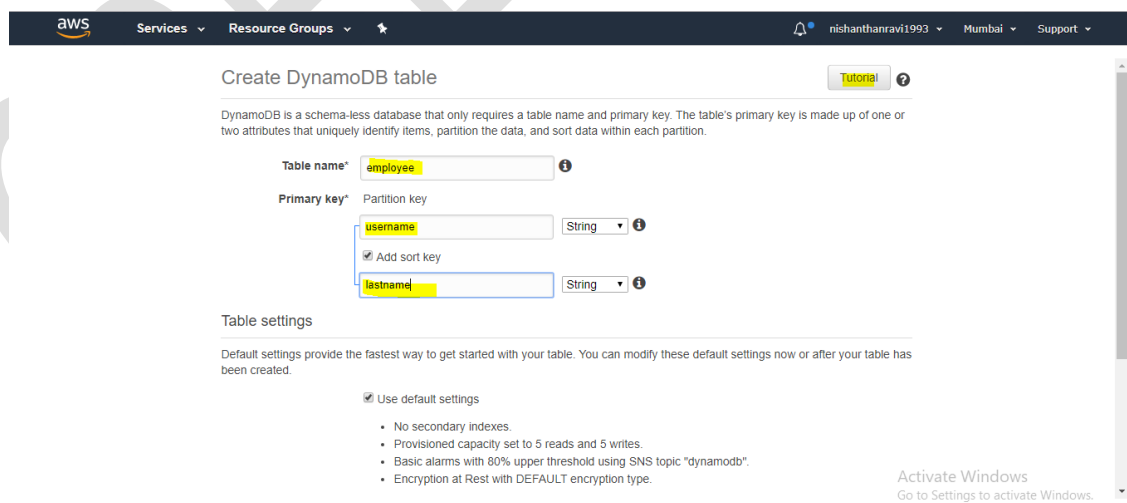


Create one table



Username

Last name



Create DynamoDB table

DynamoDB is a schema-less database that only requires a table name and primary key. The table's primary key is made up of one or two attributes that uniquely identify items, partition the data, and sort data within each partition.

Table name*

Primary key* Partition key

String

☒ Add sort key

String

Table settings

Default settings provide the fastest way to get started with your table. You can modify these default settings now or after your table has been created.

☒ Use default settings

- No secondary indexes.
- Provisioned capacity set to 5 reads and 5 writes.
- Basic alarms with 80% upper threshold using SNS topic "dynamodb".
- Encryption at Rest with DEFAULT encryption type.

Table settings

Default settings provide the fastest way to get started with your table. You can modify these default settings now or after your table has been created.

☒ Use default settings

- No secondary indexes.
- Provisioned capacity set to 5 reads and 5 writes.
- Basic alarms with 80% upper threshold using SNS topic "dynamodb".
- Encryption at Rest with DEFAULT encryption type.

i You do not have the required role to enable Auto Scaling by default.
Please refer to [documentation](#).

+ Add tags **NEW!**

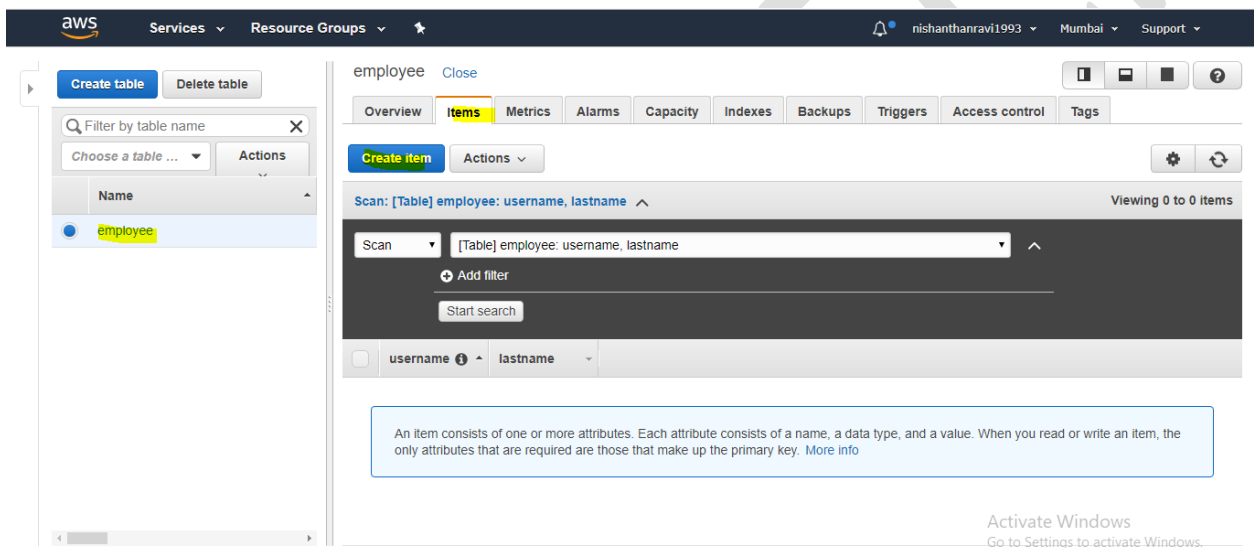
Additional charges may apply if you exceed the AWS Free Tier levels for CloudWatch or Simple Notification Service. Advanced alarm settings are available in the CloudWatch management console.

Cancel **Create** **Activate Windows**
Go to Settings to activate Windows.

h (US)

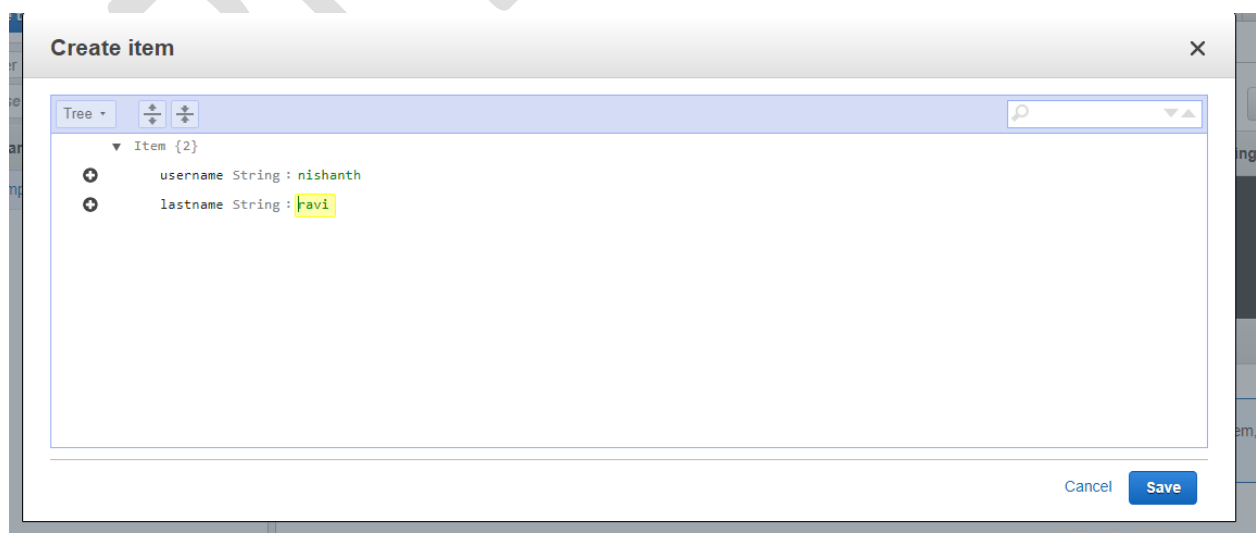
© 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. [Privacy Policy](#) [Terms of Use](#)

Go to items



The screenshot shows the AWS DynamoDB console interface. At the top, there's a navigation bar with 'Services', 'Resource Groups', and a user profile 'nishanthanravi1993'. The main content area is for a table named 'employee'. The 'Items' tab is selected, showing a search bar with the filter '[Table] employee: username, lastname'. Below the search bar, there's a list of items, but it's currently empty, showing 'Viewing 0 to 0 items'. A blue information box at the bottom explains that an item consists of one or more attributes, each with a name, data type, and value.

Add your name



The screenshot shows the 'Create item' dialog box. It has a tree view on the left showing 'Item {2}'. The main area displays the attributes being added: 'username String : nishanth' and 'lastname String : ravi'. At the bottom right, there are 'Cancel' and 'Save' buttons.

roups ▼ ★ 🔔 nishanthanravi1993 ▼ Mumbai ▼ Support ▼

employee Close

Overview **Items** Metrics Alarms Capacity Indexes Backups Triggers Access control Tags

Create item Actions ▼ ⚙️ ↺️

Scan: [Table] employee: username, lastname ^ Viewing 1 to 1 items

Scan ▼ [Table] employee: username, lastname ^

+ Add filter

Start search

☐ username 🔍 ^ lastname ▼

☐ nishanth ravi

inputfile - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	username	lastname																			
2	archana	b																			
3	arthu	d																			
4	krishan	d																			
5	jegan	c																			
6	damo	f																			
7																					
8																					
9																					
10																					

Upload your file. CSV

Overview **Properties** Permissions Management

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

Upload + Create folder Download Actions ▼ Asia Pacific (Mumbai) 🔄

Viewing 1 to 1

<input type="checkbox"/> Name ▼	Last modified ▼	Size ▼	Storage class ▼
<input type="checkbox"/> inputfile.csv	Nov 14, 2019 12:12:05 PM GMT+0530	67.0 B	Standard

Viewing 1 to 1

Dashboards

Alarms

ALARM

INSUFFICIENT

OK

Billing

Events

Rules

Event Buses

Logs

Insights

Metrics

Settings **NEW**

Favorites

[Add a dashboard](#)

Try CloudWatch Logs Insights

CloudWatch Logs Insights allows you to search and analyze your logs using a new, purpose-built query language. Click [here](#) to experience it. If you want to learn more, read the [AWS blog](#) or visit our [documentation](#).

Expand all

Row

Text

Refresh

Settings

Help

Filter events

all

2019-11-13 (06:40:01)

Time (UTC +00:00)	Message
2019-11-14	
06:40:01	Accessing the received file and reading the same
06:40:01	response from file object
06:40:01	{u'Body': <botocore.response.StreamingBody object at 0x7f6ad7489a90>, u'AcceptRanges': 'bytes', u'ContentType': 'text/csv', 'ResponseMetadata': {'username': 'username.lastname', 'lastname': 'archana.b'}}
06:40:01	{u'username': 'arthu.d', 'lastname': 'krishan.d'}
06:40:01	{u'username': 'username.lastname', 'lastname': 'archana.b'}, {u'username': 'arthu.d', 'lastname': 'krishan.d'}}
06:40:02	END RequestId: cd71f657-d8cf-4660-9a93-74761dd6c446
06:40:02	REPORT RequestId: cd71f657-d8cf-4660-9a93-74761dd6c446 Duration: 611.94 ms Billed Duration: 700 ms Memory Size: 192 MB Max Memory
06:42:04	START RequestId: 495bcea9-5621-445b-b421-749a5d30d243 Version: \$LATEST

No newer events found at the moment. [Retry](#)

Activate Windows

Go to Settings to activate Windows.

Feedback English (US)

© 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use

aws

Services

Resource Groups

notifications

nishanthanravi1993

Mumbai

Support

Create table

Delete table

Filter by table name

Choose a table ...

Actions

Name

employee

employee Close

Overview

Items

Metrics

Alarms

Capacity

Indexes

Backups

Triggers

Access control

Tags

Create item

Actions

Scan: [Table] employee: username, lastname

Viewing 1 to 4 items

Scan

[Table] employee: username, lastname

+

Add filter

Start search

username

lastname

arthu.d

krishan.d

jegan.c

damo.f

nishanth

ravi

username.lastname

archana.b

Activate Windows

Go to Settings to activate Windows.

Feedback English (US)

© 2008 - 2019, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

Please delete after using