



OBJECTIVE:

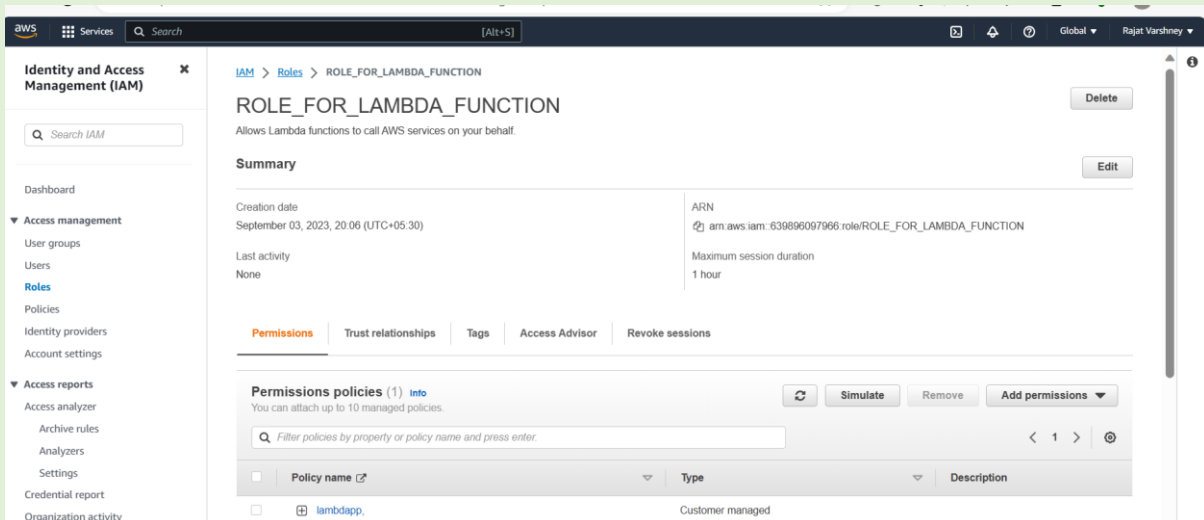
**I USED LAMBDA TO STOP AND START EC2
INSTANCE AT REGULAR INTERVALS**

REQUIREMENT:

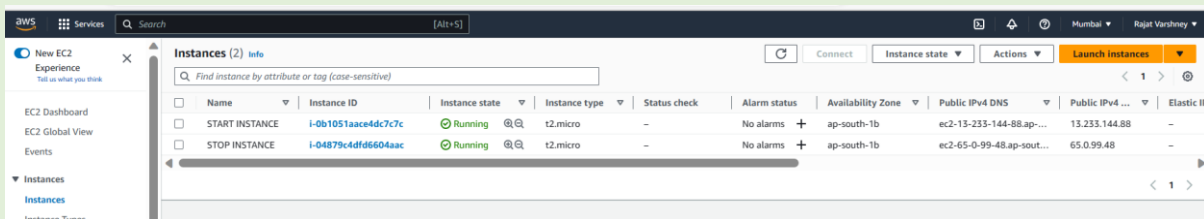
- IAM ROLE
- EC2 INSTANCE
- LAMBDA FUNCTION
- CLOUD TRAIL
- AMAZON EVENTBRIDGE

USE AWS LAMBDA AND AMAZON EVENTBRIDGE TO AUTOMATICALLY STOP AND START AMAZON EC2 INSTANCE

STEP1: Create a custom AWS Identity and Access Management (IAM) policy and IAM role for your Lambda function.

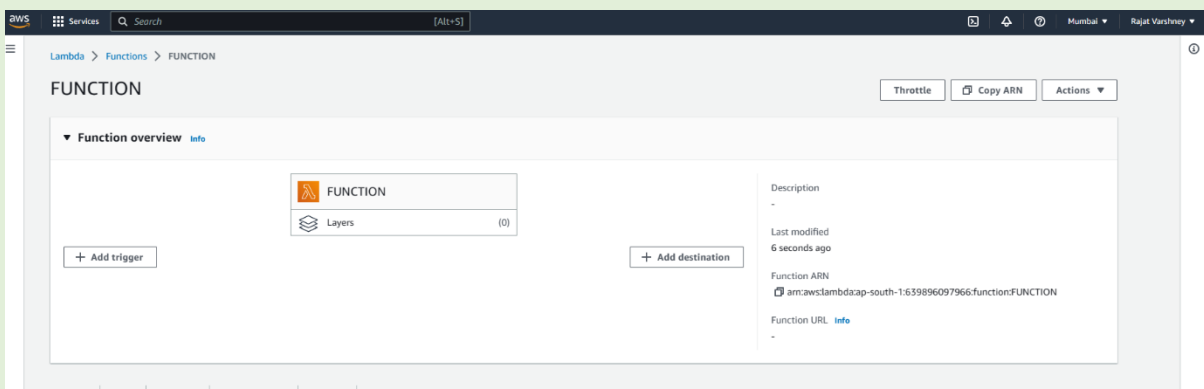


STEP2: Launch Start and Stop EC2 Instance for Ubuntu with t2.micro Instance type



STEP3: Create Lambda functions that stop and start your EC2 instances

- Choose **Author from scratch**.
- For Runtime, choose **Python 3.9**.
- Under Permissions, expand **Change default execution role**.
- Under Execution role, choose Use an existing role.
- Under Existing role, choose the **IAM role** that you created.



STEP4: On the Configuration tab, choose General configuration, and then choose Edit.

- **Set Timeout to 10 seconds, and then choose Save.**

The screenshot shows the AWS Lambda Configuration tab with the 'General configuration' sub-tab selected. The configuration details are as follows:

Property	Value
Description	-
Memory	128 MB
Ephemeral storage	512 MB
Timeout	0 min 10 sec
SnapStart	None

STEP5: Test your Lambda functions

- **Open the Lambda console, and then choose Functions.**
- **Choose one of the functions that you created.**
- **Choose the Code tab.**
- **In the Code source section, choose Test.**
- **In the Configure test event dialog box, choose Create new test event.**
- **Enter an Event name. Then, choose Create.**
- **Choose Test to run the function.**

The 'Configure test event' dialog box is shown with the following details:

- Test event action:** ☒ Create new event, ☐ Edit saved event
- Event name:** EVENT1 (Maximum of 25 characters consisting of letters, numbers, dots, hyphens and underscores.)
- Event sharing settings:** ☒ Private (This event is only available in the Lambda console and to the event creator. You can configure a total of 10. [Learn more](#)), ☐ Shareable (This event is available to IAM users within the same account who have permissions to access and use shareable events. [Learn more](#))
- Template - optional:** hello-world
- Event JSON:**

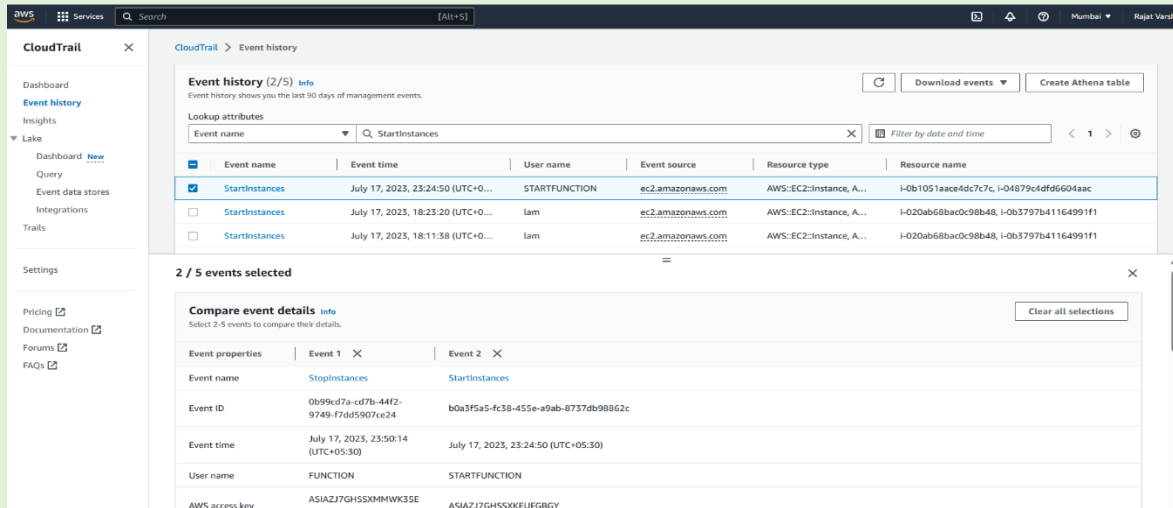
```
1 {
2   "key1": "value1",
3   "key2": "value2",
4   "key3": "value3"
5 }
```
- Buttons:** Cancel, Invoke, Save

STEP6:

Check the status of your EC2 instances

- **You can check the status of your EC2 instances before and after testing to confirm that your functions work as you expect**

STEP7: You can use CloudTrail to check for events to confirm that the Lambda function stopped or started the EC2 instance.

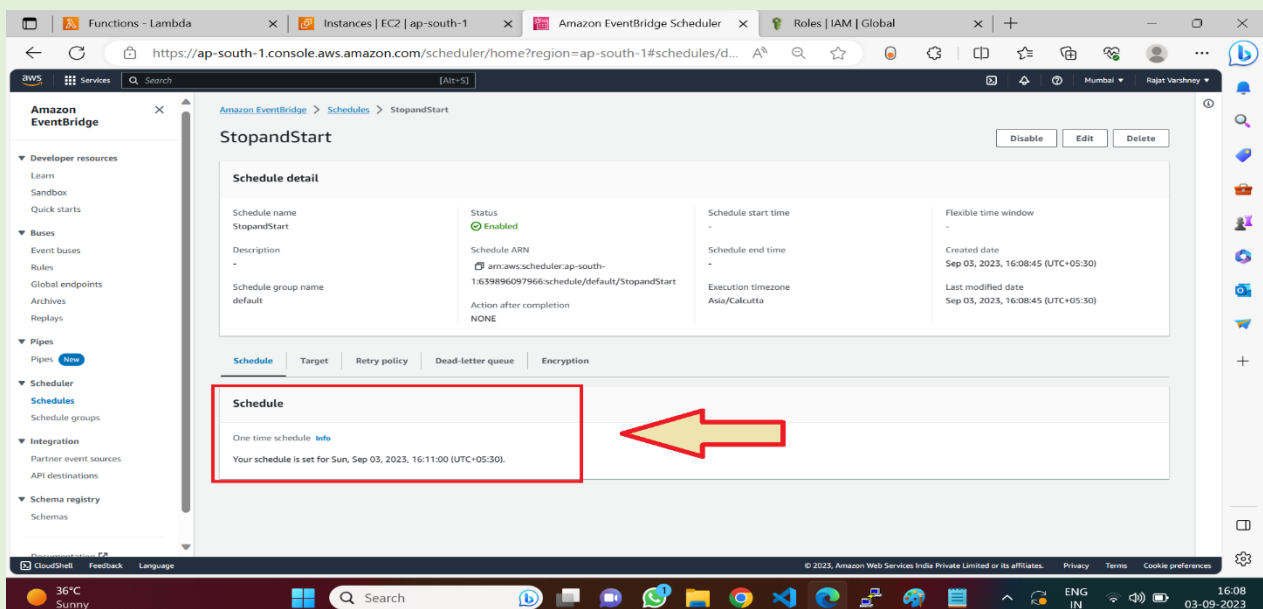


The screenshot shows the AWS CloudTrail console. The 'Event history' tab is selected, displaying a table of events. The table has columns for Event name, Event time, User name, Event source, Resource type, and Resource name. Three 'StartInstances' events are listed, all occurring on July 17, 2023, at different times (23:24:50, 18:23:20, and 18:11:38 UTC+05:30). The user 'lam' is associated with all events, and the event source is 'ec2.amazonaws.com'. The resource type is 'AWS::EC2::Instance, A...' and the resource name is an EC2 instance ID.

Event name	Event time	User name	Event source	Resource type	Resource name
StartInstances	July 17, 2023, 23:24:50 (UTC+05:30)	lam	ec2.amazonaws.com	AWS::EC2::Instance, A...	i-0b1051aace4dc7c7c, i-04879c4dfd6604aac
StartInstances	July 17, 2023, 18:23:20 (UTC+05:30)	lam	ec2.amazonaws.com	AWS::EC2::Instance, A...	i-020ab68bac0c98b48, i-0b3797b41164991f1
StartInstances	July 17, 2023, 18:11:38 (UTC+05:30)	lam	ec2.amazonaws.com	AWS::EC2::Instance, A...	i-020ab68bac0c98b48, i-0b3797b41164991f1

STEP8: Create Amazon EventBridge rules that run your Lambda functions

- For Rule type, choose Schedule, and then choose Continue in EventBridge Scheduler.
- For Schedule pattern, choose Recurring schedule.
- Under Schedule pattern, for Occurrence, choose Recurring schedule.
- For Schedule type, choose the type that's right for your need and complete the following steps:
- When Schedule type is Rate-based schedule, for Rate expression, enter a rate value and choose an interval of time in minutes, hours, or days.



The screenshot shows the Amazon EventBridge Scheduler console. The 'StopandStart' rule is selected, and the 'Schedule' tab is active. The rule is a 'Schedule' type, and the 'Schedule detail' section shows the following information:

- Schedule name:** StopandStart
- Status:** Enabled
- Description:** -
- Schedule group name:** default
- Schedule start time:** -
- Schedule end time:** -
- Execution timezone:** Asia/Kolkata
- Flexible time window:** -
- Created date:** Sep 03, 2023, 16:08:45 (UTC+05:30)
- Last modified date:** Sep 03, 2023, 16:08:45 (UTC+05:30)

The 'Schedule' tab is highlighted with a red box, and a red arrow points to it. The 'Schedule' section shows a one-time schedule for Sun, Sep 03, 2023, 16:11:00 (UTC+05:30).