Task-19

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Below is the procedure followed

1. Create a Lambda Function and trigger Event Bridge for Events to Trigger in S3 bucket.

Below is the code used in Lambda function.

Code: import boto3

import time

import datetime

```
def lambda_handler(event, context):
    # Create an EC2 client
    ec2 = boto3.client('ec2')

    # Replace 'your_instance_id' with the ID of the EC2 instance you want to check
    instance_id = 'i-0239585eb7553e292'

    try:
        # Use the describe_instances() method to get information about the instance
        response = ec2.describe_instances(InstanceIds=[instance_id])
```
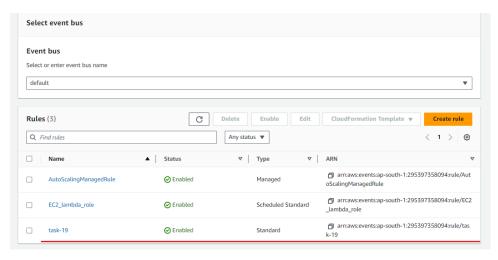
```python
        if response['Reservations']:

            instance = response['Reservations'][0]['Instances'][0]

            instance_state = instance['State']['Name']

            result = f'Instance {instance_id} is {instance_state}'

        else:

            result = f'Instance {instance_id} not found.'

    except Exception as e:

        result = f'Error: {str(e)}'


    # Create a unique file name with a timestamp

    timestamp = datetime.datetime.now().strftime("%Y-%m-%d-%H-%M-%S")

    file_name = f"ec2_instance_status_{timestamp}.txt"


    # Save the result in a file

    with open(f"/tmp/{file_name}", "w") as file:

        file.write(result)


    # Upload the file to an S3 bucket

    try:

        s3 = boto3.client('s3')

        bucket_name = 'task-18-tilak'  # Replace with your S3 bucket name

        s3.upload_file(f"/tmp/{file_name}", bucket_name, file_name)

        result += f' - File uploaded to {bucket_name}/{file_name}'

    except Exception as e:

        result += f' - Error uploading to S3: {str(e)}'


    return result
```

Code is deployed

As per below screenshot I have Created a Rule in Event Bridge

Select event bus

Event bus

Select or enter event bus name

default ▼

Rules (3)			C	Delete	Enable	Edit	CloudFormation Template ▼	**Create rule**

Q Find rules				Any status ▼			‹ 1 › ⚙

☐	**Name** ▲	**Status** ▽	**Type** ▽	**ARN** ▽
☐	AutoScalingManagedRule	⊘ Enabled	Managed	🗗 arn:aws:events:ap-south-1:295397358094:rule/AutoScalingManagedRule
☐	EC2_lambda_role	⊘ Enabled	Scheduled Standard	🗗 arn:aws:events:ap-south-1:295397358094:rule/EC2_lambda_role
☐	task-19	⊘ Enabled	Standard	🗗 arn:aws:events:ap-south-1:295397358094:rule/task-19

Below screenshot shows How the configuration is done in EventBridge

Step 1
Define rule detail

Step 2
Build event pattern

Step 3
Select target(s)

Step 4 - *optional*
Configure tags

Step 5
Review and update

Define rule detail Info

Rule detail

Name

task-19

Maximum of 64 characters consisting of numbers, lower/upper case letters, .-_,._

Description - *optional*

Autosave EC2 Instance State Before Shutdown

Event bus   Info
Select the event bus this rule applies to, either the default event bus or a custom or partner event bus.

default ▼

🔘 Enable the rule on the selected event bus

Rule type   Info

🔘 Rule with an event pattern A rule that runs when an event matches the defined event pattern. EventBridge sends the event to the specified target.	○ Schedule A rule that runs on a schedule

Event pattern Info

Event source
AWS service or EventBridge partner as source

```
AWS services ▼
```

AWS service
The name of the AWS service as the event source

```
EC2 ▼
```

Event type
The type of events as the source of the matching pattern

```
EC2 Instance State-change Notification ▼
```

Event Type Specification 1

○ Any state
● Specific state(s)

Specific state(s)

```
▼
```

shutting-down ✕   terminated ✕

Event Type Specification 2

○ Any instance
● Specific instance Id(s)

Specific instance Id(s)

```
i-0239585eb7553e292
```

Remove

Event pattern
Event pattern, or filter to match the events

```
1  {
2    "source": ["aws.ec2"],
3    "detail-type": ["EC2 Instance State-change Notification
4    "detail": {
5      "state": ["shutting-down", "terminated"],
6      "instance-id": ["i-0239585eb7553e292"]
7    }
8  }
```

⎘ Copy   ⊙ Test pattern   ✎ Edit pattern

Add

Step 1
Define rule detail

Step 2
Build event pattern

Step 3
Select target(s)

Step 4 - optional
Configure tags

Step 5
Review and update

Select target(s)

ⓘ **Permissions**
Note: When using the EventBridge console, EventBridge will automatically configure the proper permissions for the selected targets. If you're using the AWS CLI, SDK, or CloudFormation, you'll need to configure the proper permissions.

Target 1

Target types
Select an EventBridge event bus, EventBridge API destination (SaaS partner), or another AWS service as a target.
○ EventBridge event bus
○ EventBridge API destination
● AWS service

Select a target   Info
Select target(s) to invoke when an event matches your event pattern or when schedule is triggered (limit of 5 targets per rule)

```
Lambda function ▼
```

Function

```
task-19 ▼   ⟳
```

▶ Configure version/alias

▶ Additional settings

Add another target   Cancel   Skip to Review and update   Previous   **Next**
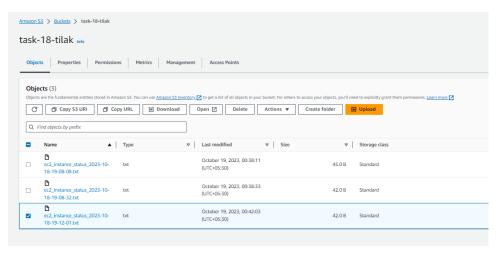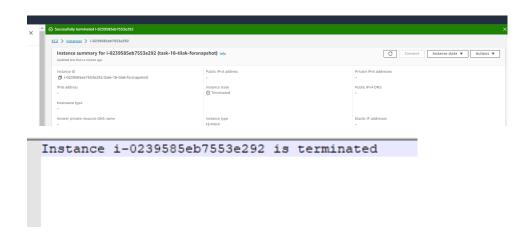
As shown in the below screenshot I have created A S3 bucket name as: Task-18-tilak for logs storage

Lateron I have created a new instance and copied the instace ID in the lambda code and then terminated the instance. Now as shown in the S3 bucket a new log is generated

Stating that the EC2 instance is Terminated.

Done