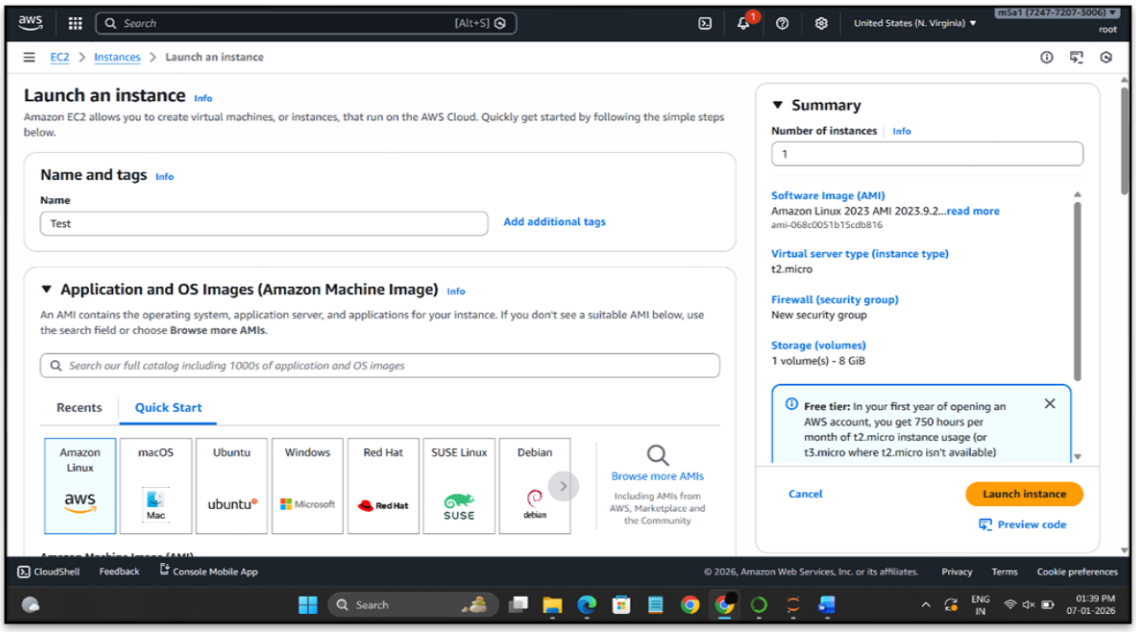
To Stop and Start Amazon EC2 Instances at regular time intervals using Lambda.

Requirements:

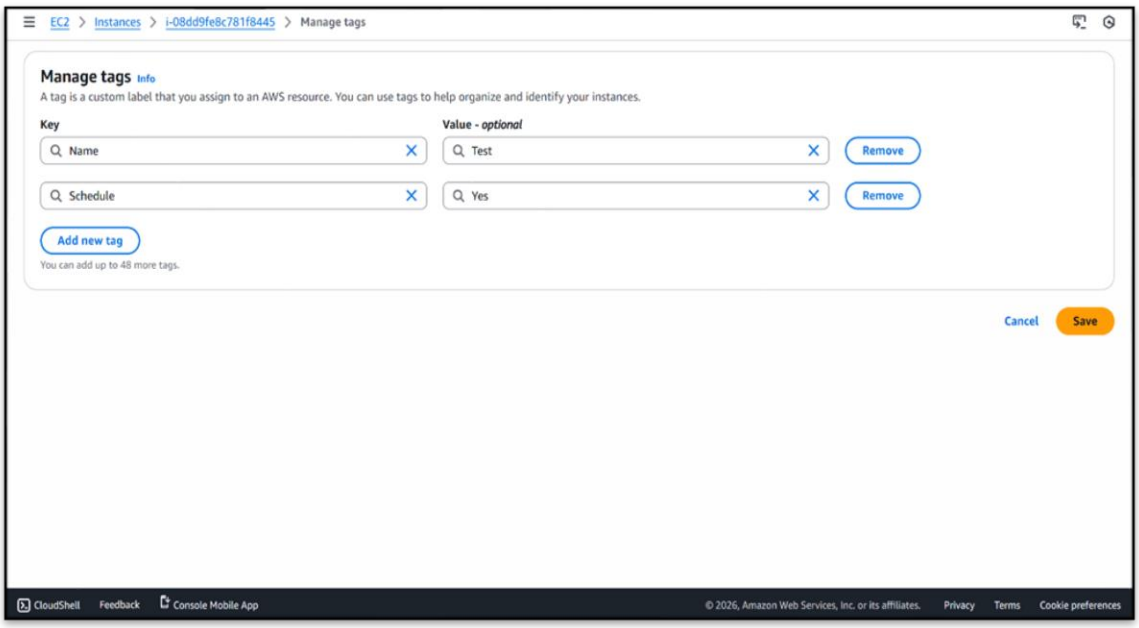
- Reduce EC2 Usage by scheduling start and stop automatically.
- Create IAM policy and execution role for Lambda function
- Create Lambda function to start and stop EC2 instances.
- Create EventBridge to rule Lambda function.

EC2:

➢ Open the AWS console→Navigate to EC2→Launch instance →Name→Key pair→Allow SSH and HTTP in security group →Launch instance.

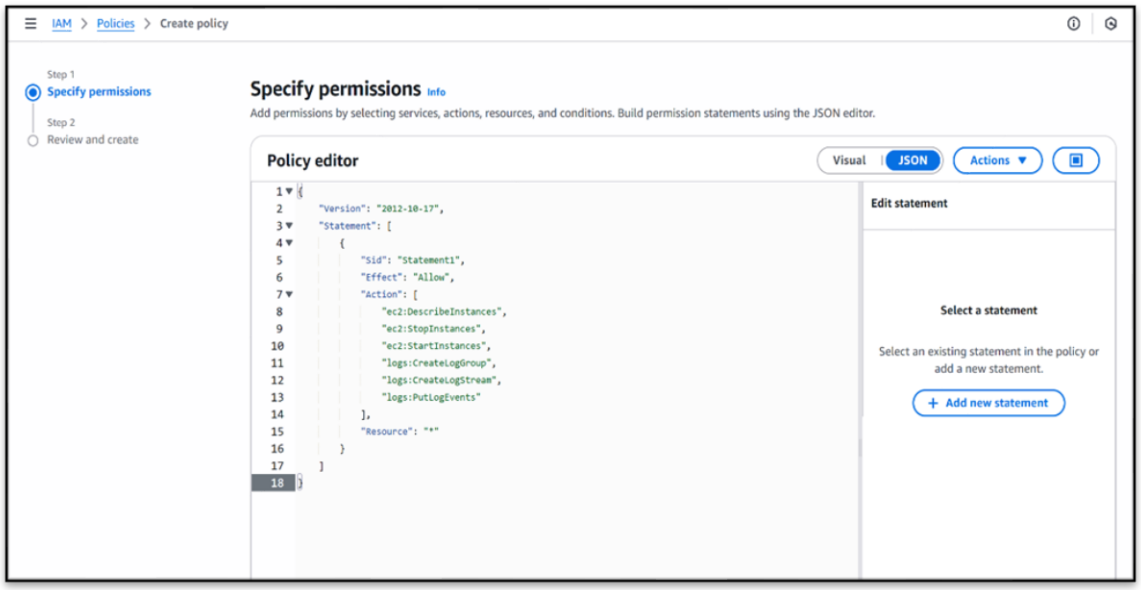


➢ After creation of instance select the instance→Navigate to tags→Manage tags→Add tags→Key=’Schedule’, Value=’Yes’ → Save. (This is done to help Lambda identify the instance)

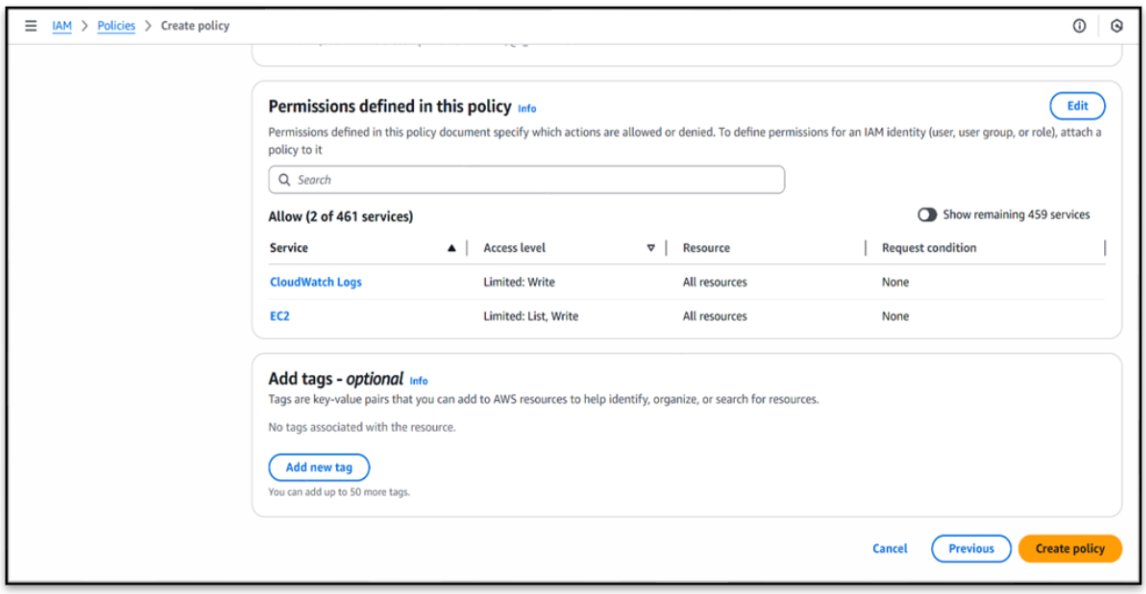


IAM:

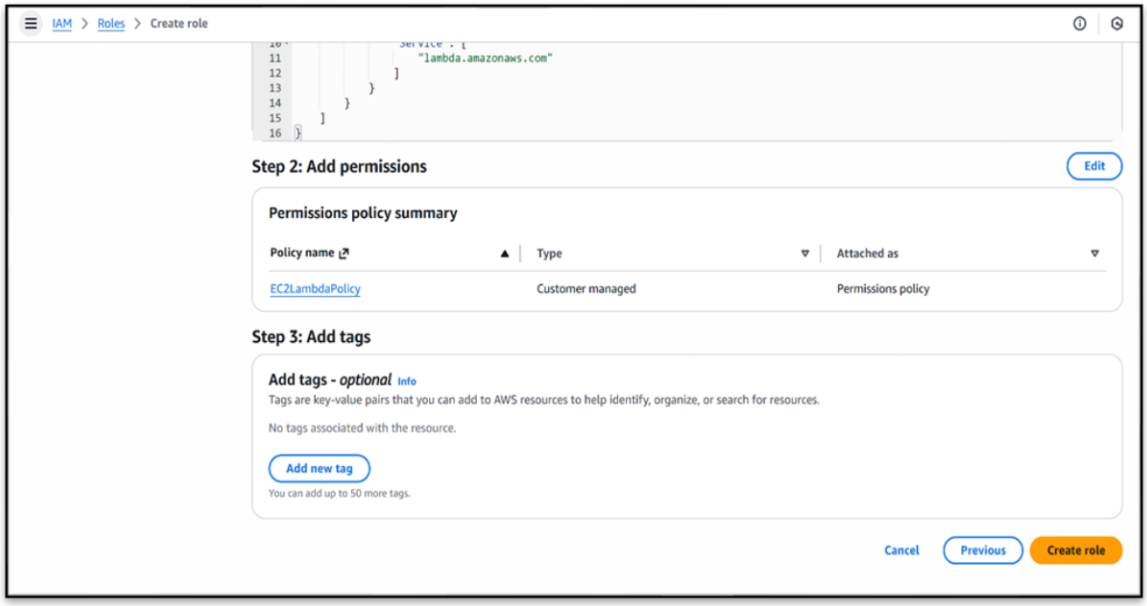
- Navigate to IAM policies→Create policy→JSON→Add the required permissions:
  - EC2
  - Logs



- Review and create: Policy name→"EC2LambdaPolicy"→Create policy.

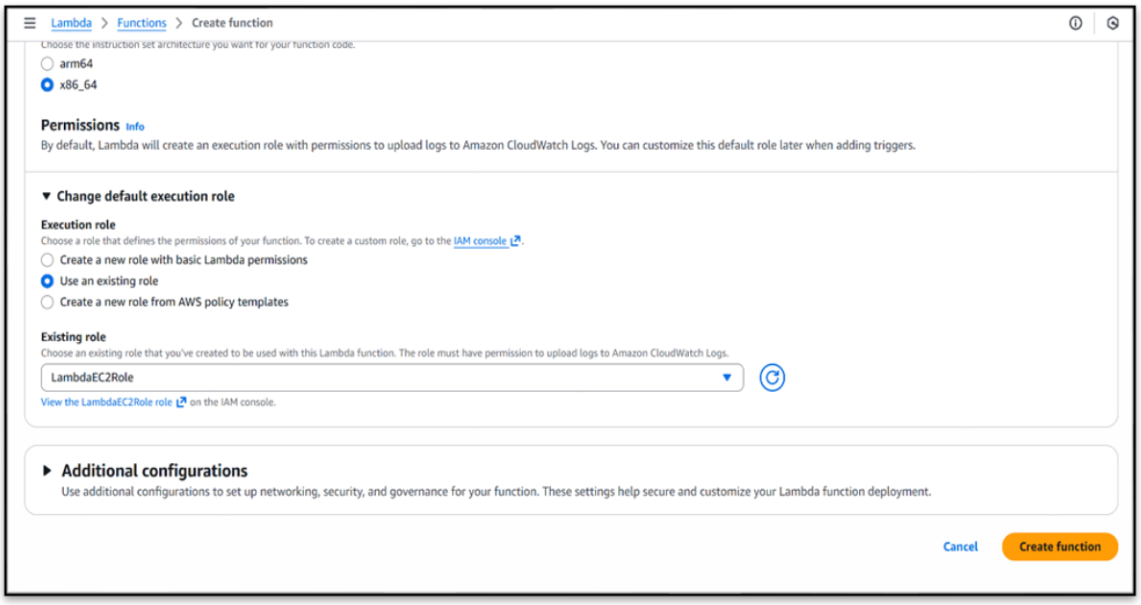


- Navigate to Roles→Create Execution role→Select Lambda as service→Attach EC2 Lambda Policy→Next→Name:"Lambda EC2Role"→Create role.

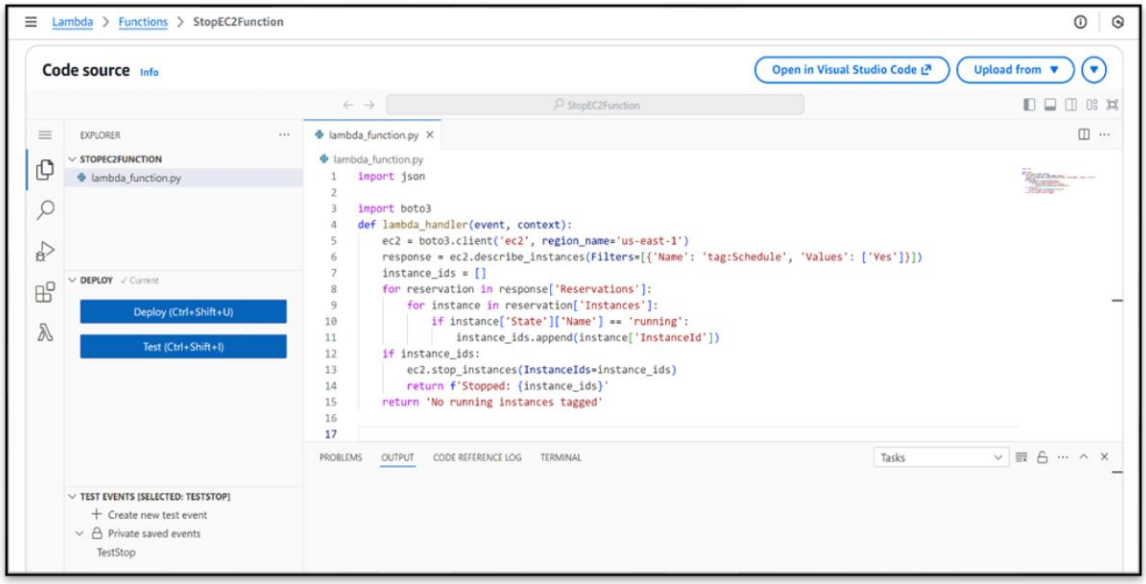


Lambda:

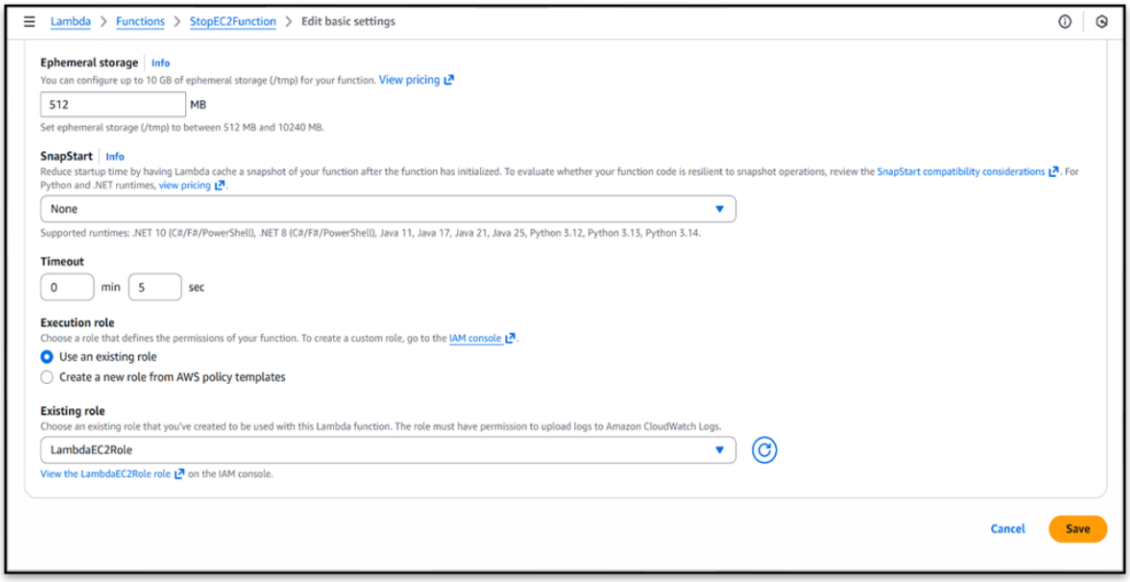
- Navigate to Lambda Functions→Create function→Function name→Runtime(Python 3.12)→Use the existing Lambda EC2 Role→Create function.



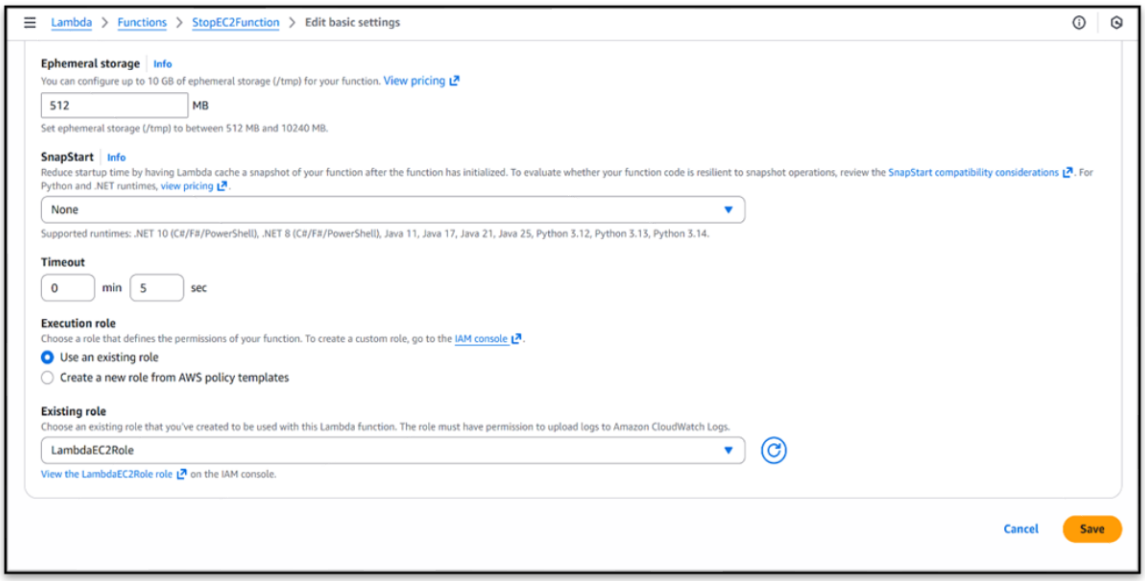
- Provide necessary code for the **Lambda Stop Function**→ Deploy.



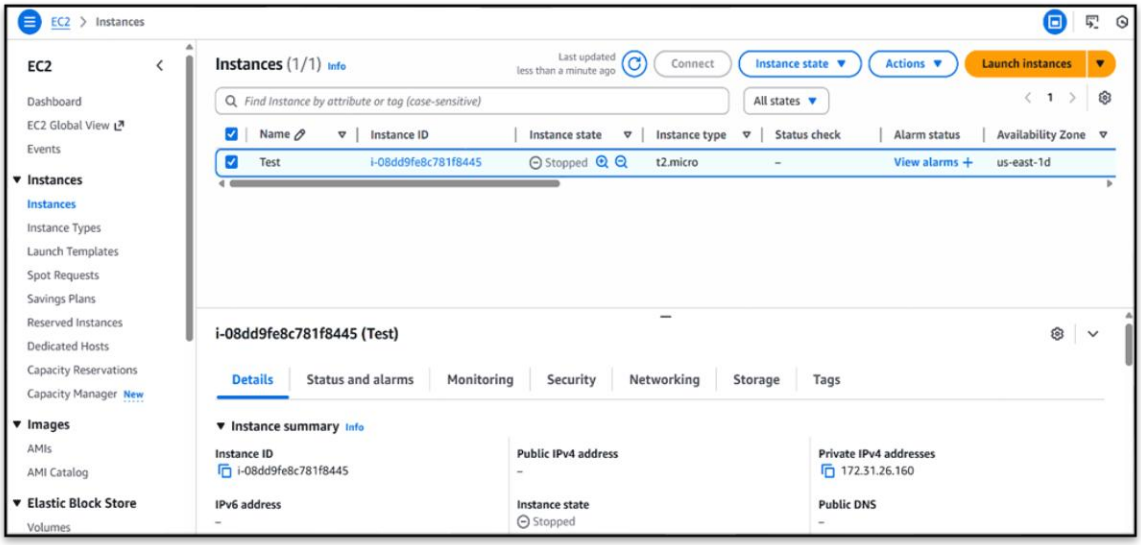
- Configure the code by navigating to configuration→Enter the timeout seconds→Save.

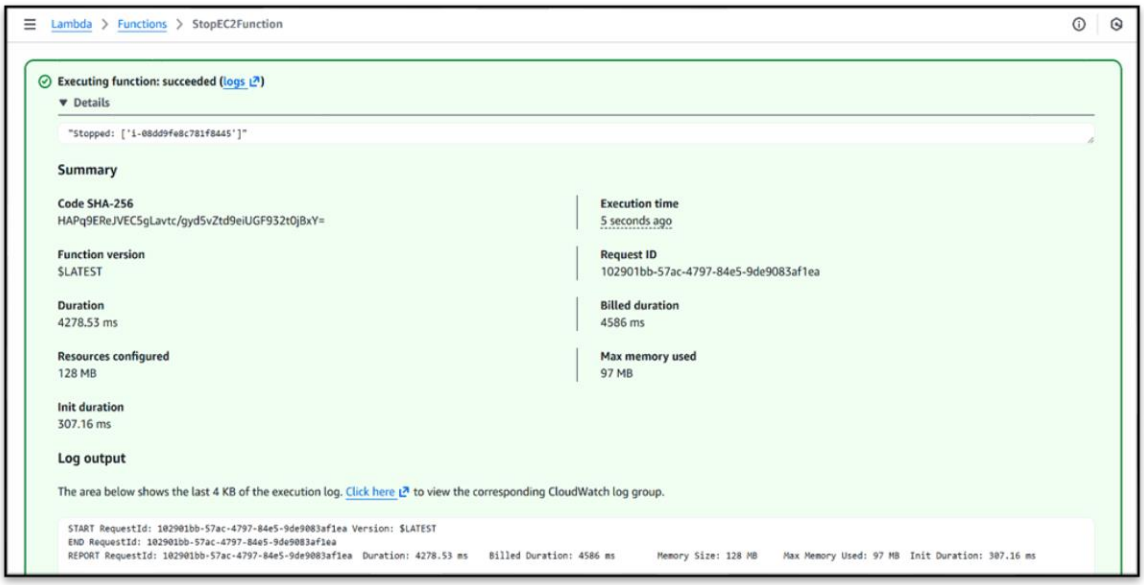


- Test the Lambda function by navigating to Test→Proceed with empty JSON code→Save→Test.

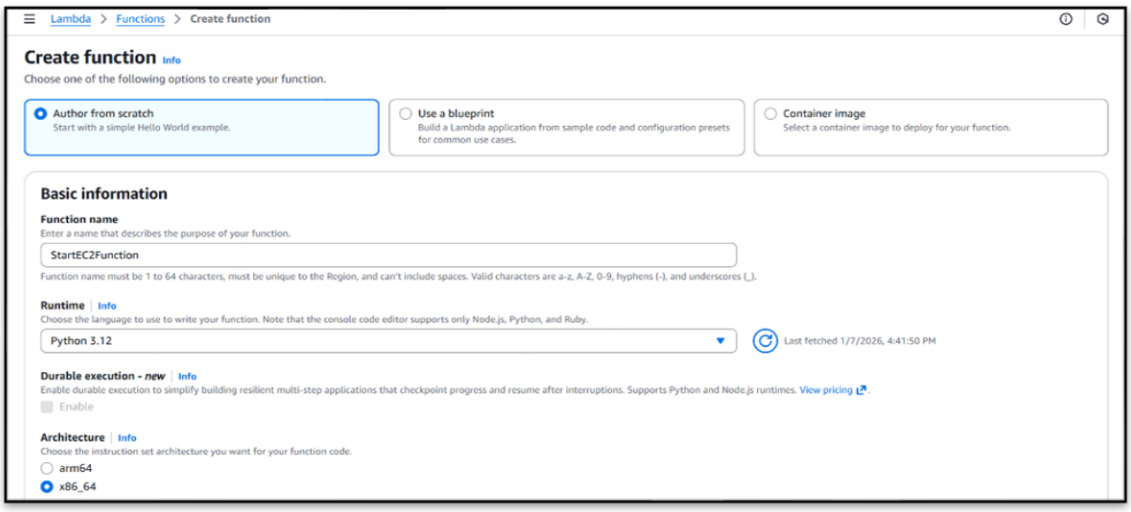


- You can find that the instance has been stopped and the stop function has been executed successfully.

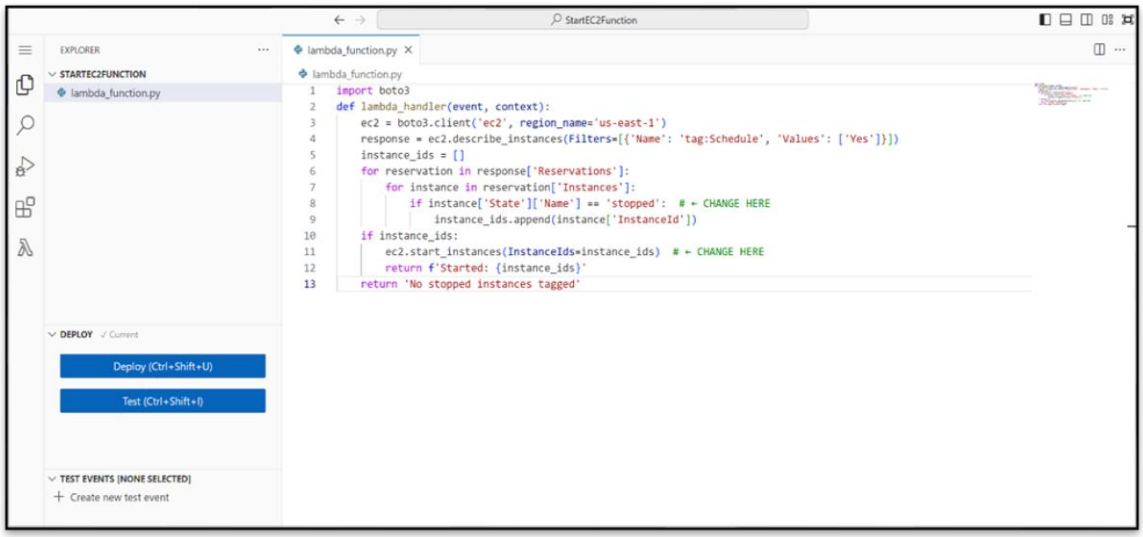




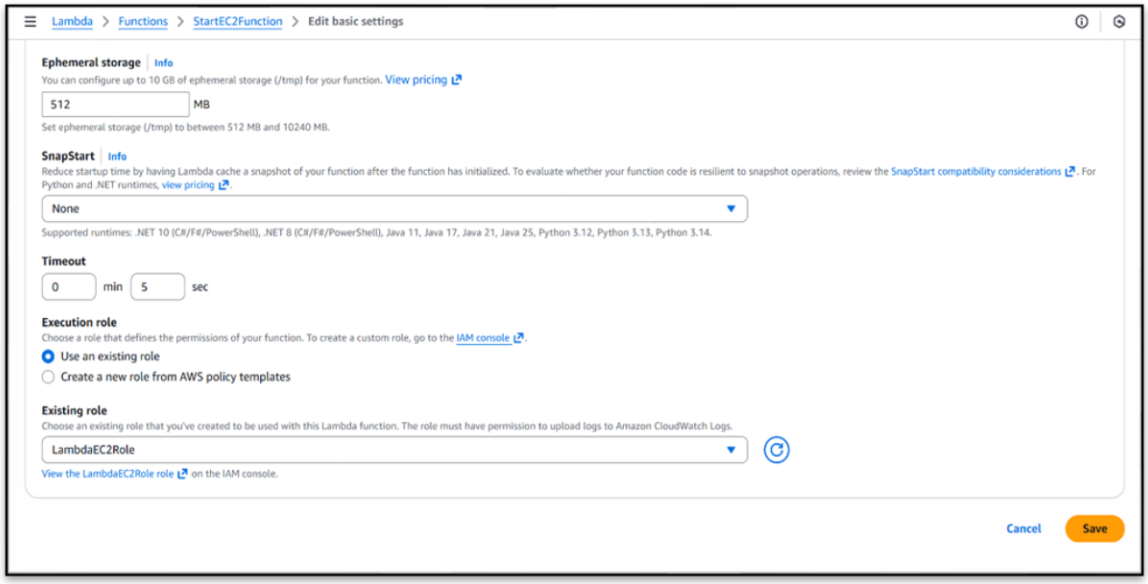
- Create Start Function by navigating to Lambda→Create function→Name:"StartEC2Function"→Provide the existing Lambda EC2 Role→Create function.



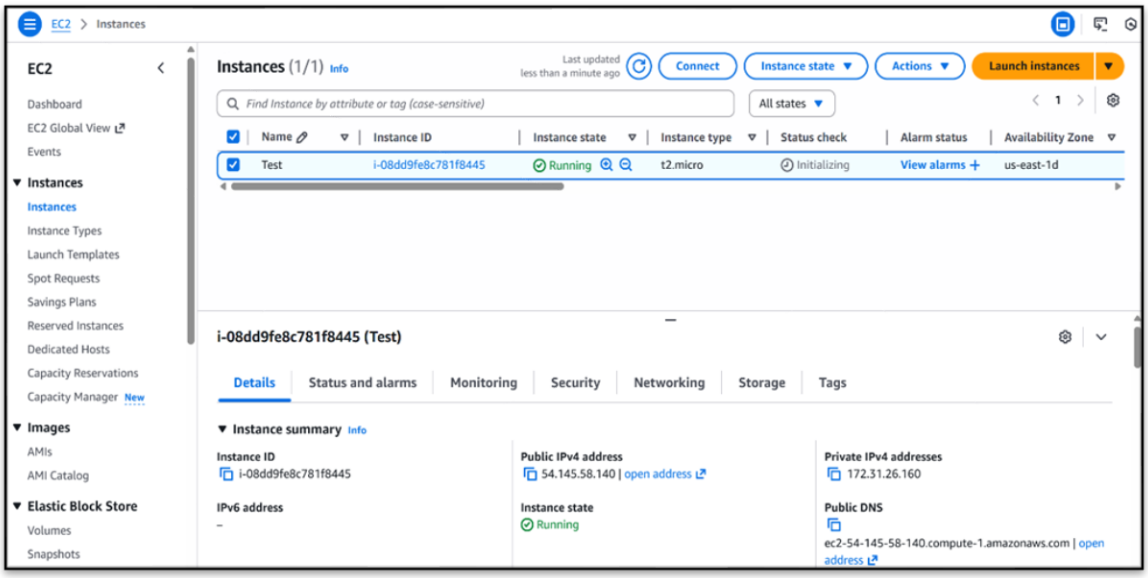
- Provide necessary code for the **Lambda Start Function**→ Deploy.

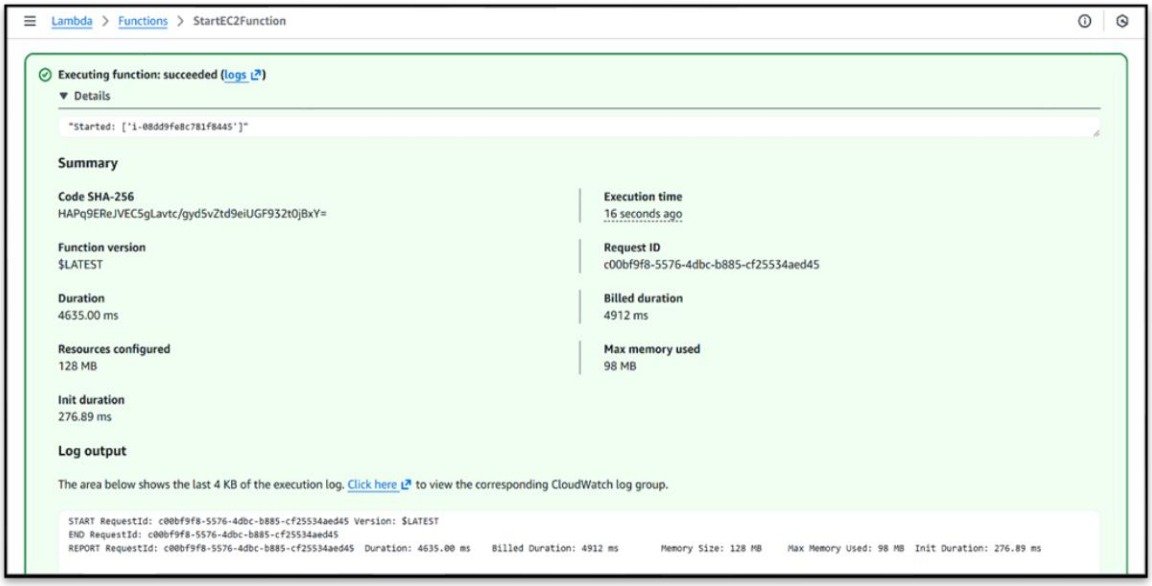


- Configure the code by navigating to configuration→Enter the timeout seconds→Save.



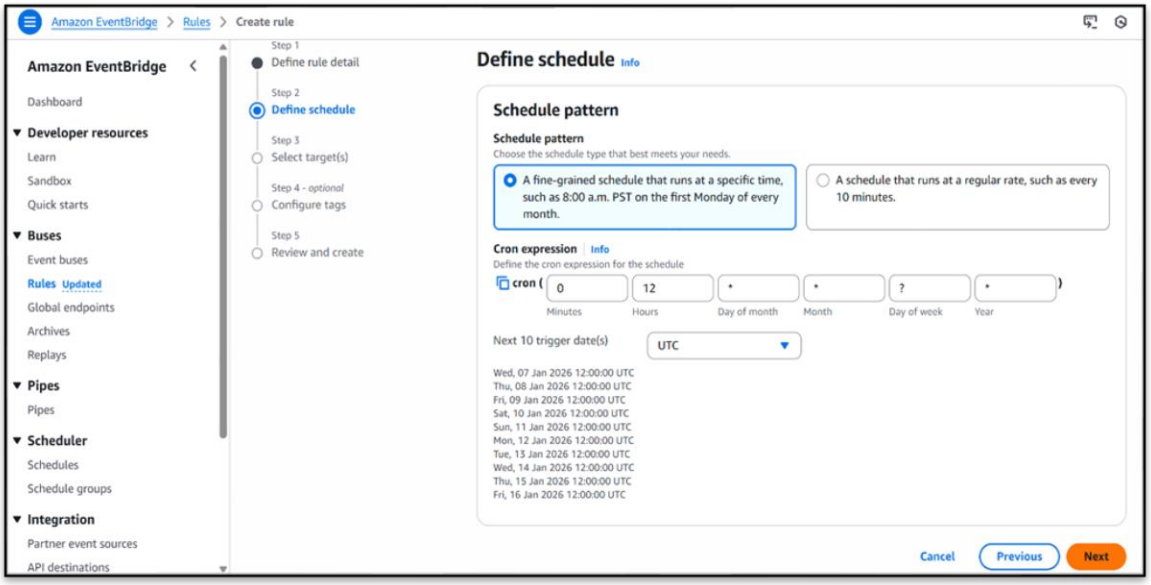
- Test the Lambda function by navigating to Test→Proceed with empty JSON code→Save→Test.
- You can find that the instance has been started and the start function has been executed successfully.



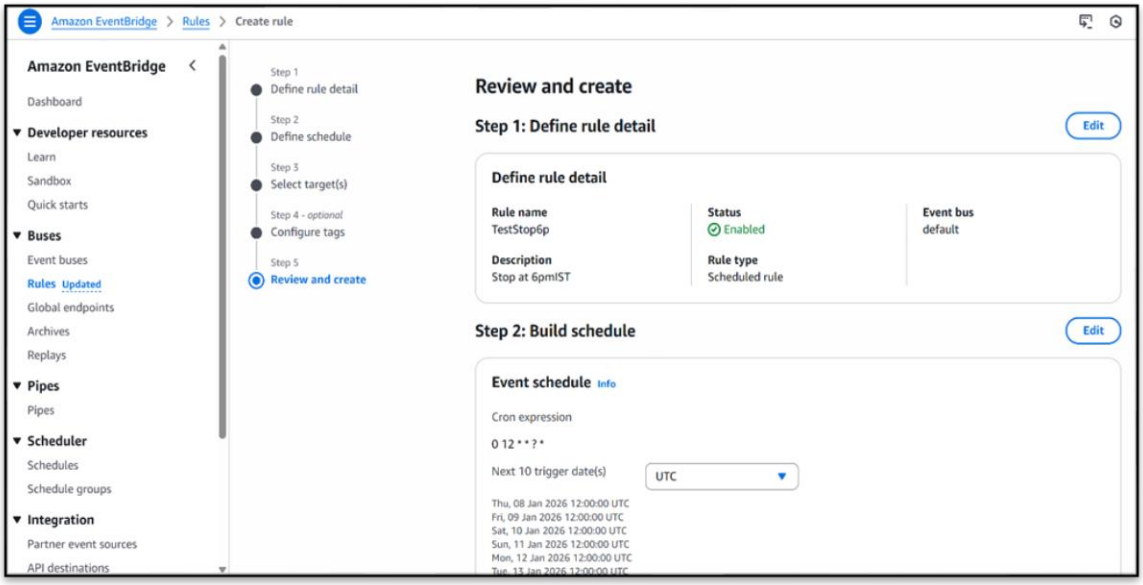


EventBridge:

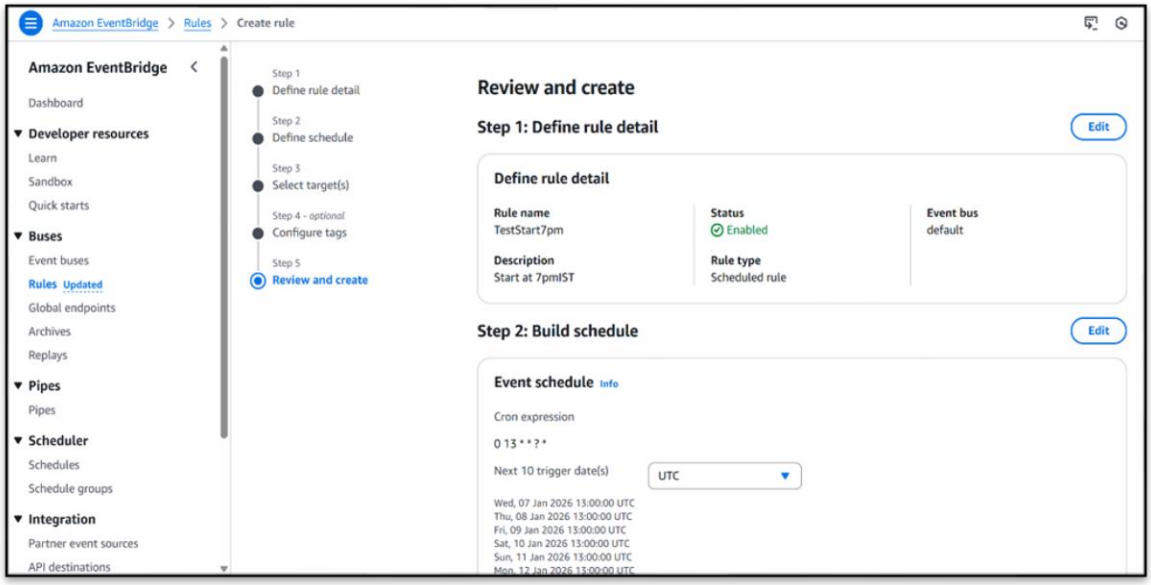
- Navigate to Amazon Eventbridge Console→Rules→Create rule →Provide the name and description→Next.
- Define schedule by entering appropriate cron expression→Next.



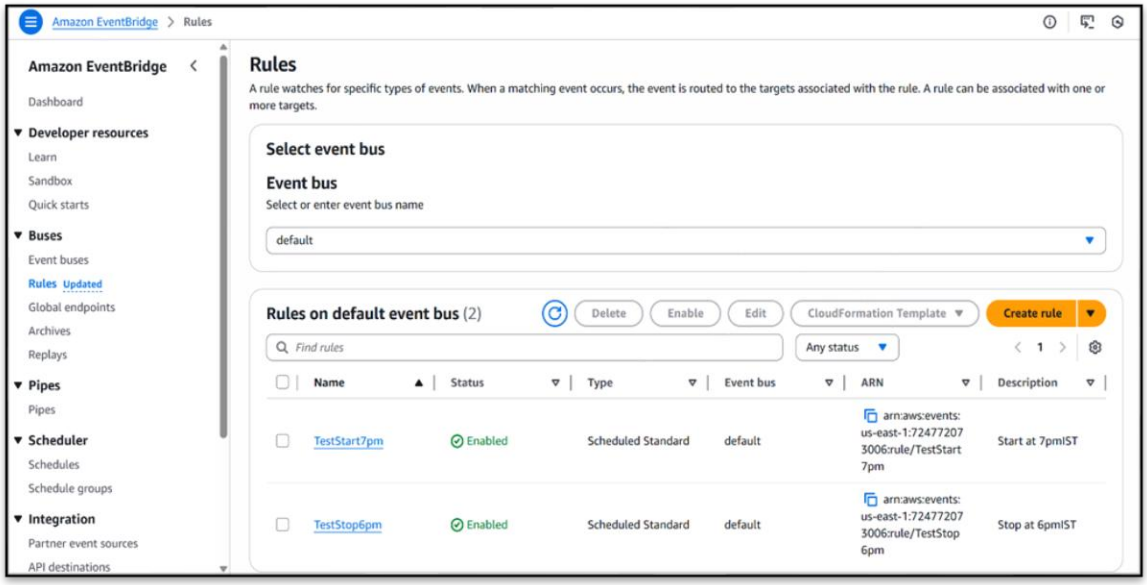
- Select the target type as Lambda Function→Stop EC2 Function →Next→Review and Create.



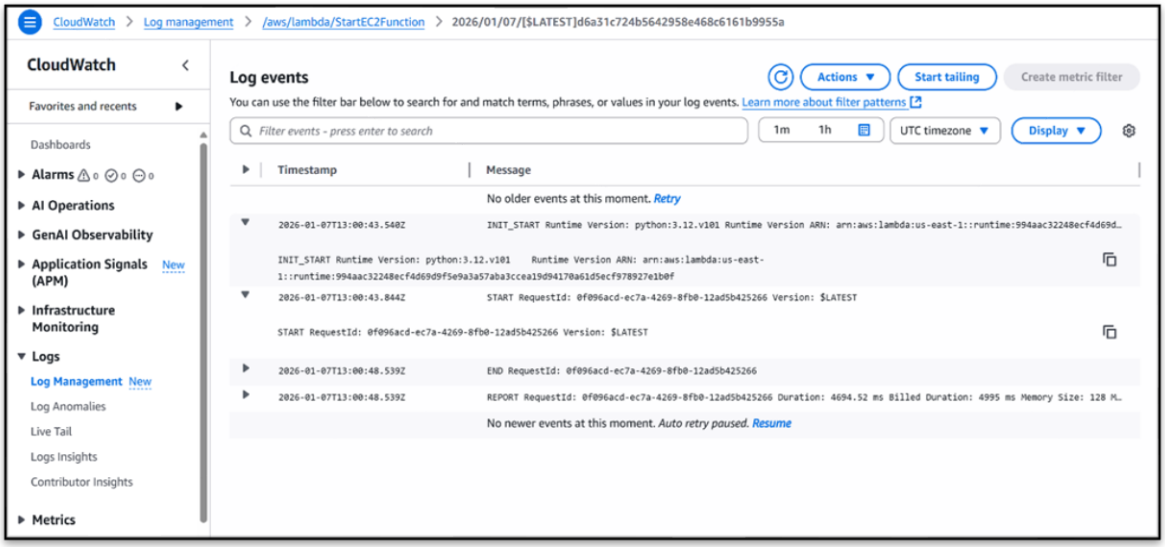
- Follow the same steps and create another rule for Start EC2 Function.



- Both the Start and Stop rule have been successfully created to schedule the EC2.



- Through the log events we could find that instance have stopped and started at the specified time intervals.



- The EC2 instances have been scheduled to stop and start at the specified time using IAM policy, Lambda functions and Eventbridge.

Conclusion:

- This AWS EC2 auto stop/start project successfully implemented serverless automation using Lambda and EventBridge, achieving 75% cost savings by stopping instances during specified times.