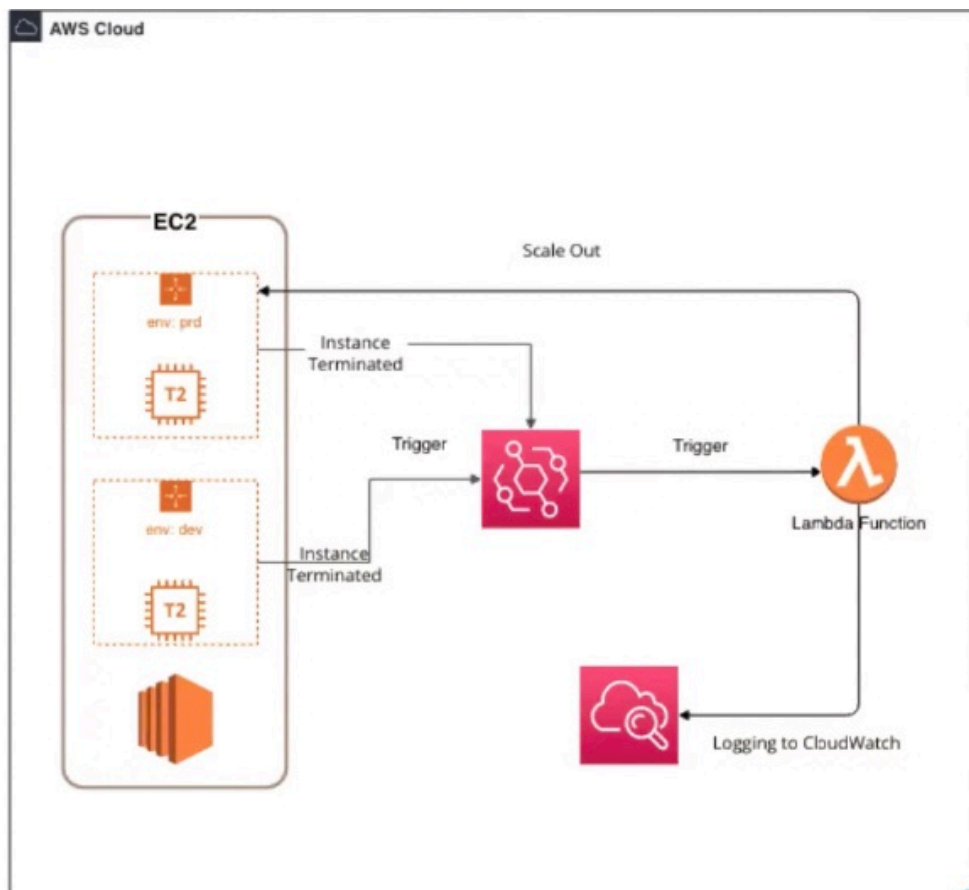


Mini Projects

Auto Remediation

A company uses a 'multiple environment to a single AWS account' approach for EC2 deployments. The manager has noticed that there have been outages due to junior engineers accidentally changing desired capacity of the production ASG to 0. IAM permissions are avoided for now and you are asked to put an auto remediation solution to auto recover from these mistakes.

Solution



When Auto Scaling group desire is dropped, it should trigger a function and this should return and improve autoscaling.

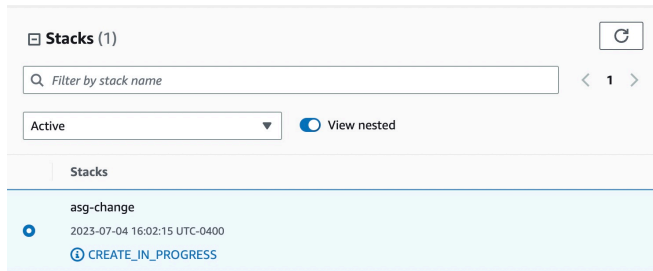
In Event Bridge, instance terminated events are sent to the the Lambda function when the event bridge is triggered. Lambda is also looking at whoever this event came from.

It doesn't matter if it came from dev, just directly write it to Cloudwatch. If the event came from production, Lambda edits autoscale and redirects it to EC2 and rearranges auto scaling. You can enter the id number of EC2 in the services in Eventbridge.

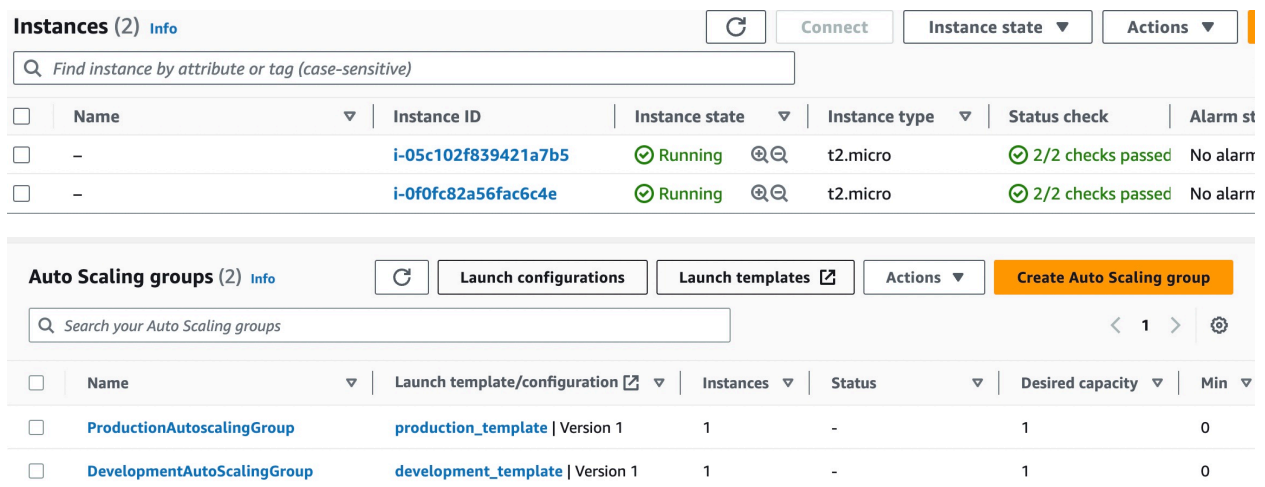
Target 1 is aws service lambda function, selected function name is asg-change.

Part 1

I created a stack on CloudFormation. I uploaded a template file on Specify Template. Stack name is “asg-change” tag key ‘app’, value is ‘asg-change’.



Cloudformation started 2 instance machine and 2 autoscaling group.



Part 2

I created IAM role. I selected Lambda. In order, I choose EC2FullAccess, CloudwatchFullAccess, AutoScalingFullAccess. Role named ‘asg-change-lambda_role’

Step 2: Add permissions

Edit

Permissions policy summary		
Policy name	Type	Attached as
CloudWatchFullAccess	AWS managed	Permissions policy
AutoScalingFullAccess	AWS managed	Permissions policy
AmazonEC2FullAccess	AWS managed	Permissions policy

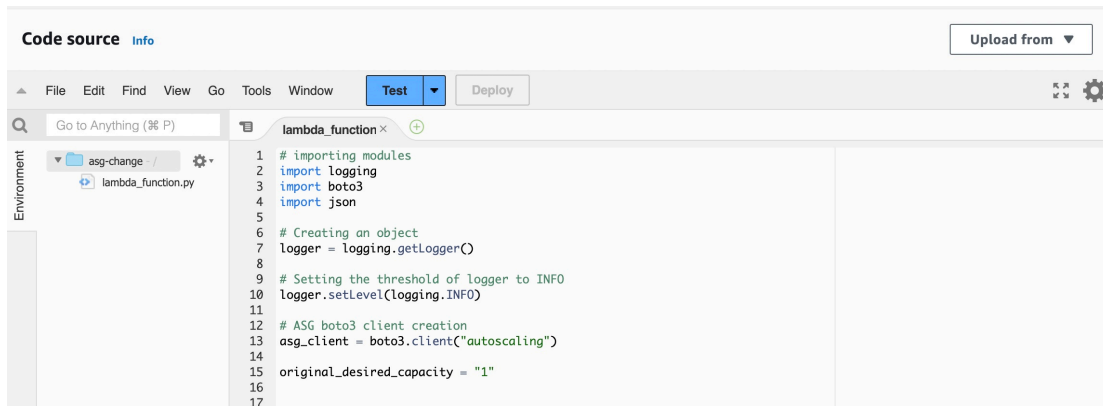
Part 3

I created a function on Lambda. I selected author from scratch, named 'asg-change', runtime Python 3.9.

Under the "Change default execution role", use an existing role I choose the asg-change-lambda_role I already created. I pasted the code is given for Lambda function.

This code lets Lambda to edit autoscale and redirect it to EC2 and rearrange auto scaling.

I click on "DEPLOY"



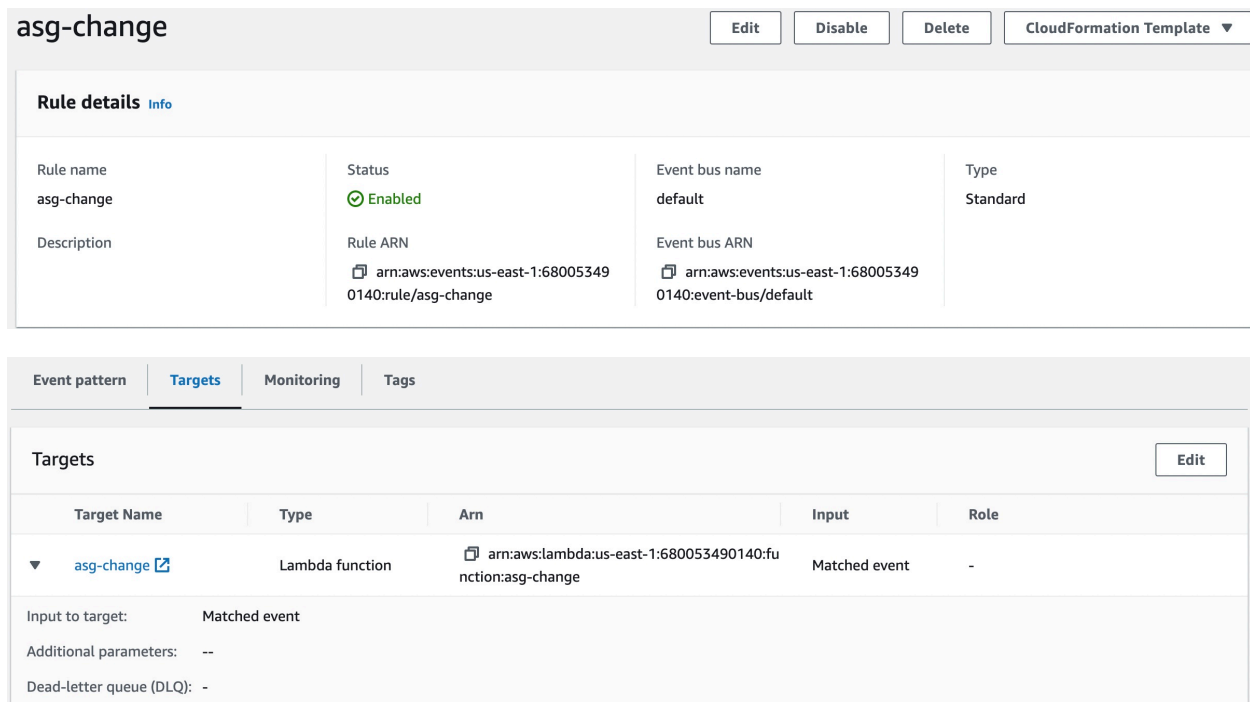
The screenshot shows the AWS Lambda console's 'Code source' tab for a function named 'asg-change'. The environment is set to 'asg-change' with the file 'lambda_function.py'. The code is as follows:

```
1 # importing modules
2 import logging
3 import boto3
4 import json
5
6 # Creating an object
7 logger = logging.getLogger()
8
9 # Setting the threshold of logger to INFO
10 logger.setLevel(logging.INFO)
11
12 # ASG boto3 client creation
13 asg_client = boto3.client("autoscaling")
14
15 original_desired_capacity = "1"
16
17
```

Part 4

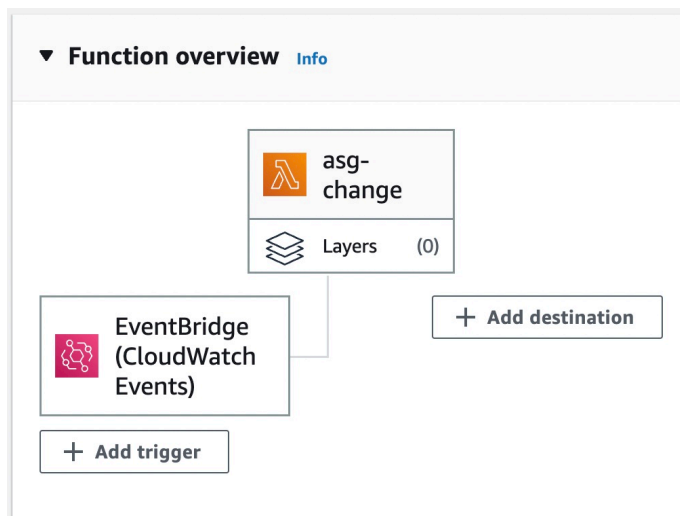
I created a rule on Eventbridge. Rule name is 'asg-change', event bus default. Event source AWS events or Eventbridge partner events, sample events is 'EC2 Instance Terminate Successful'

Event Pattern, AWS service is AutoScaling, event type Instance launch and terminate.



The screenshot shows the AWS EventBridge console for a rule named 'asg-change'. The rule is enabled and has a standard type. The event bus is the default one. The rule ARN is 'arn:aws:events:us-east-1:68005349:0140:rule/asg-change' and the event bus ARN is 'arn:aws:events:us-east-1:68005349:0140:event-bus/default'.

The 'Targets' tab shows one target named 'asg-change' of type 'Lambda function'. The target is configured with the ARN 'arn:aws:lambda:us-east-1:680053490140:fn:asg-change' and the input 'Matched event'. The role is set to '-'. The input to the target is 'Matched event', and there are no additional parameters or dead-letter queue (DLQ) configured.



Part 5

I edit development autoscaling group like junior engineer did. I changed desired group to 0. An instance had terminated.

Group size

Specify the size of t
also specify minimu
within the limit rang

Desired capacity

Minimum capacity

Maximum capacity

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm
<input type="checkbox"/>	-	i-05c102f839421a7b5	Terminated	t2.micro	-	No a
<input type="checkbox"/>	-	i-0f0fc82a56fac6c4e	Running	t2.micro	2/2 checks passed	No a

This time, I edit production autoscaling group. I changed desired group to 0. In the cloudwatch log says desired capacity changed to 1. And another instance had initiated. Production desired capacity had changed to 1. Because Lambda took the message from Eventbridge

▼

2023-07-04T17:43:53.392-04:00

[INFO] 2023-07-04T21:43:53.392Z e952599c-f8bc-49c3-9c88-65a845b562a8 Resetting ProductionAutoscalingGroup to baseli...

[INFO] 2023-07-04T21:43:53.392Z e952599c-f8bc-49c3-9c88-65a845b562a8 Resetting ProductionAutoscalingGroup to baseline capacity of 1.

Copy

Find instance by attribute or tag (case-sensitive)

< 1 > ⚙

<input type="checkbox"/>	Name ▼	Instance ID	Instance state ▼	Instance type ▼	Status check	Alarm status	Availability Zone ▼
<input type="checkbox"/>	-	i-05c102f839421a7b5	⊖ Terminated 🔍	t2.micro	-	No alarms +	us-east-1a
<input type="checkbox"/>	-	i-0f0fc82a56fac6c4e	⊖ Terminated 🔍	t2.micro	-	No alarms +	us-east-1b
<input type="checkbox"/>	-	i-09a33fb2d36c65716	⊕ Running 🔍	t2.micro	⊕ 2/2 checks passed	No alarms +	us-east-1b