What we are going to do in project session is integrate lamda function to call in a particular time and deliver your use case

You going to have one instances. Let’s take only one instances for practice session and this one your eC2 instances and what your going to do this your going to configure this instances with your lamda to perform some automation action. Ok so you going to perform lamda action. I will show you what is lamda then how a lamda will be triggered. A lamda will be triggered if anything is happen with your cloud watch log. First log is going to trigger alarm. Alarm will be generated. I will show what is alarm how do you create alarm and how do you marked it. Cloud watch is going to create one alarm and how do you create one alarm using metrics. O will show what is metrics if anything happened in EC2 lamda should be triggered for that lamda trigger cloud watch alarm will be triggered cloud watch alarm will monitoring your ec2 instances. So this is the base diagram. In here one work flow. I will so this is the base diagram. In here work flow . I will show you another work flow where we can create something called event bridge and by using the event bridge we are going to integrate SNS SQL and we are going to call the lambda functions automatically to stop the instances in particular time. When I say particular time it is nothing but we are going to use something called cron jobs. So if you not familiar with cron jobs.Cron jobs are used in linux concepts to automate some infrastructure process in a particular time for eg In Monday for every month Monday in a particular time may be 10.30 am I should need to reboot my instances that the scenario you can use a lamda function I will show you how to do that. So lets first launches a instances where we are going to achieve in project session. If you see here we have EC2 instances and you can integrate EC2 instances with load balancer and you can create as VPC group you create entire in a VPC, customize your VPC I am not going to do it. It take further time. In EC2 instances we can have load balancer will be part of auto scaling group. Once your auto scaling group going to check EC2 instances and integrate will load balancer. You can integrate your load balancer with route 53. Route 53 will be outside of your VPC because route 53 is your domain naming server globally accessible. Similar to your S3 buckets and IAM. This endpoint will be pointing to your route 53. This is how your basic architecture application looks like this is all the thing I have showed in the lecture.

As much as possible you can integrate s3 and integrate your EBS volume and integrate another services . yes lot of possibilities. We are going to stick only in this part. EC2 instances from EC2 instances you are going to forces on the newly having tools which ever you are going to use in the project session. Let’s create one launch instances. This is your instances make sure your id is copied. We are going to integrate this instances Id. Using instances Id you are going to write one lamda function and when I say lambda function what do you mean by lamda function. Lamda function are something know as server less technology nothing but EC2 instances is a compute services this is called server. Compute services you go over here if you search for compute you can find multiple available compute services available over her if you see lambda is your part of services but it is a serve less technology. When I say serve less technology need os to manage your application. If you are familiar with lamda what do with application server. You are going to perform some action. So instead of having a server to perform some action. We are going to create one lambda function and write a code that particular code will be to going to perform some automation action that’s is what lambda is. Lambda is serve less technology. EC2 is again compute services but is a server technology. Lets go into lambda lets create one lambda functuion.

1. Create function
2. Lambda functio0n- major advantages.

1 st each and every trigger

1st one billion trigger going to be free of cost and after even that even if you have any trigger is going to cost very very less and that is why lambda is playing a vita role in AWS architecture.

Lamda is a serve less technology and this is very efficient where you can perform action without any maintenance of your server. When you have server you need to perform some action nothing but yum upgrade

Yum install those thing be done. So that things are not require in lamba. So there is no need maintenance of server and lambda is written only in code.

1. From scratch we are going to create container also can be integrated with lambda functions container also can be integrated with lambda functions and if you need to create a server less browser repository is also going to be container concept. So you can integrate that as well so now we are going to stick with the basic. Create from scratch or we can use blue print directly use it. We can see already few blue print already created by AWS directly use that S3-get-object-python you can directly use this. I got it from online

2. Author from scratch’

3 basic information

Function name

Test

Choose runtime. These are the runtime available in your lambda or you can run with your shell scripts as well. In this session I am going to choose phyton.

Runtime

Python 3.6

Architecture (familiar with java application where it is installed version of that)

\*86-64

Permisision

What are going to do now is we are going to integrate with lamda to automatically call EC2 instances. So that you need these are the separate services and this are the separate services so to integrate between AWS services . what do you need anyone remember can any one answer this and I ask you to learn step functions.

Use an existing role

Star and stop.

You need to create an IAM role and directly attach to it. You can directly go over here role. Inside role create a role give a name AWS services . use case going to be EC2 choose EC2 and next, Permission policies nothing but policies. I have should you how to create policies as well.

EC2 full access can also be given click next

Role details

Role name

Down

Click create role

That is going to be reflected over lambda over here

Existing role

Start and stop

Click create functions

Create lamba function for you

In real time what is lambda layers are the place where you create your configuration part.

If your appearing for examination any how you are going to project yourself atlast you have one years of exp right in Aws. So that is why your learning this course so if your projecting yourself have any questions they will not ask you to write the code immediately and evaluate you. They ask you what is lambda function.

What is lambda layers.

How do use lambda this is how your question will be your not a person to write the code for 1 year of experience. I am going to give you the code as well.

Click add a layer

So I have created one function inside the function I have trying scripts. I need to be give script over here is will also give you the script. If you see I have a script written in boot os is a frame work of hypen to integrate AWS with your phython. If you see this is for my region instances. EC2 stop boot o3 learn phyton to organize your infrastructure. Initial level you this code as well again this code is given by Aws itself not a code. I have written blue print you need to edit the code if you see here I have my region make sure having the same region us-east=1 I need my EC2 instances. I need to get my instances id and give the instances id over here and remove this .These are the variables EC2 variables and this my region name. if you have multilple region you can add it over here thing you have multiple instances you can add multiple instances over here, another instances handler and it is going to stop my instances that is what it going to do. Once done that you need to test your connection. For testing give a event name

Event name

Test

Event sharing settings

Private

Click save

Successfully saved. You need to perform that execution see a success code has been created here and this is my hello world. This is my success code 200 is the success code. I have my connection established now I here to deploy if you need to do any manual lambda trigger you need to come over here and you need to trigger this deploy.

Click deploy

Once you do this it is going to manually trigger the function and it is succesfull. Lets go back to your instances and see what is happening. It going to take some time .It going to stop else if not stopping properly there is some errors. If not stopping properly ineed to check my. see here automatically getting stopped by using your lambda function you trigger your lambda function and you are automatically lambda functions. So I showed you how to do this manually do this. Yes you can start your application same code that will be having you can create new lambda name it anything give start instead of stop If you do this automatically going to start so now we cleared that it is integrated.

Click instances you can see here monitoring over here and you see there are metrices over here these are the default metrices which is available for your application cpu utilization these are one of the metrices in cloud watch. So these are the default matrices from EC2 dashboard. You can add this into your dashboard. I will show you next part. We have integrated EC2 with lambda now. Next part is was cloud watch log and I will show you cloud watch log. Go back to my dashboard. Choose cloud watch once you go inside cloud watch you can choose alarm if you see this is your cloud watch dashbnoard. Sorry this is your dashboard and you can create a dashboard add EC2 matrices over here

Click create dashboard

Dashboard name

Tests

Click create dashboard. You can add this to your dashboard. Click Jenkins instances

Click monitoring

This is my instances utilization

Click add to dashboard

It will ask you for dashboard name. give the dashboard name

Choose test- which is the dashboard which we are create. So I don’t want to do that add cost will be added. We can also integrate this metrices whichever over here this can be added in your dashboard.

Where we can give the application team they just need to monitor the application that what it is

Next part is going to be alarm if your scroll something left you can choose alarm. In alarm we can find something called this is pre configured thing. I will show you have to create a alarm. How do you create alaram by using any metrices over here by default and we can also add metrices as use required how do you add matrices an click manage detailed monitoring and add multliple metrices. I am choose existing metrices I will show you available metrices in here.

Choose EC2

Choose pre instances metrices. Scroll you can find all the metrices as well. One more we can do this copy the instances id and paste it over here. So that for particular instances it is going to show you metrices.

Paste and enter

So this is my metrices click here

Click graphed metrices and click bell icon over here

So small bell icon will create a alarm for you to check my cpu utilization also integrated with 20 seconds or 1 minute.lets give for 5 minutes

Conditions

Than…

You need to give the threshold can be your cpu utilization how many percentage it can wait for your alarm should be triggered for cpu utilization for eg usually in realtime will be 80% or 90 % for our learning purposes I am triggered as 1% so that will trigger over alarm instantly.

Click next

An alarm you can integrate with your sms topic. I think I have showed you about dashboard using SMs in the 1st lecture where we have created the billing dashboard. So how do we created the SMS

Choose SMS in search’

Simple notification services

Click topics

Create a topic

Click standard

Click create topic

Once it is created it will be like this. It will create ARN topic once the topic is created

Click subscriptions

Click create subscriptions

Protocol

Choose email

End point

Give a email address going to trigger a for email confirmation for the email endpoint whichever giving it over here

Click subscriptions

Once it is completed it is going to given you status confirmed.

SQS -> quering services

SQS- simple quering service

Send a notification to..

Choose existing sms

Test

(whenever the alarm is getting trigger is going to trigger the SMS topic and what do you have something SMS which is going to trigger an email hey this particular alarm in triggered this is how your notification can be integrated

Click next

Alarm name

Down

Alarm description

Your instances is down

Click next

Click create alarm

EC2 instances connect

Sudo su

Yum install java

See here it is ok how before insufficient data in state – having some response in your metrices next step is automatically trigger the lamda function using event bridger in cloud watch.

Events

Choose rules

Click go to amazon event bridge

You need to create a rule over here to automate lambda function whenerver alarm is getting triggered automatically trigger over lambda function and stop your instances. We can trigger in a such a way that it should be stopped in a particular time. For every day at 7pm it should stop and it should be start at 8am so that we can achieve this using so you don’t want to do this manually you day by day activity. You can perform this event bridge and automatic entire stuff. How do you that can be going to show you that

Click create rule

Name

Test

Rule type choose schedule over here

Click next

It is going to give you one cron job and if you not familiar with cron job it can give you the suggestion how you can create your cron jobs see

0minutes 03hours \*day of month \*month \* day of week \*year

Click next

Target

AWS service (it going to call AWS services select a target

Lambda( what have already created lambda function is to stop instances and particular time going to automatically call lambda function call test

Click next

Click next

Click create rule (once you create a role it is automatically stop the instances in a particular time instead of lambda you can also integrate something called SQS or SNS are you can integrate you closed watch alarm. If you want to integrate your cloud watch alarm it is going to trigger a notification through your SMS