**AWS Compute Optimizer Reports**

Introduction:

**AWS Compute Optimizer:**

AWS Compute Optimizer recommends optimal AWS Compute resources for your workloads to reduce costs and improve performance by using machine learning to analyze historical utilization metrics. Over-provisioning computers (Amazon EC2 and ASGs) can lead to unnecessary infrastructure cost and under-provisioning computers can lead to poor application performance. Compute Optimizer helps you choose the optimal Amazon EC2 instance types, including those that are part of an Amazon EC2 Auto Scaling group, based on your utilization data.

Ref: http://aws.amazon.com/compute-optimizer/

**Code Build:**

AWS Code Build is a fully managed continuous integration service that compiles source code, runs tests, and produces software packages that are ready to deploy. With Code Build, you don’t need to provision, manage, and scale your own build servers. Code Build scales continuously and processes multiple builds concurrently, so your builds are not left waiting in a queue. You can get started quickly by using prepackaged build environments, or you can create custom build environments that use your own build tools.

Ref: http://aws.amazon.com/codebuild/

AWS S3:

Amazon Simple Storage Service (Amazon S3) is an object storage service offering industry-leading scalability, data availability, security, and performance. Customers of all sizes and industries can store and protect any amount of data for virtually any use case, such as data lakes, cloud-native applications, and mobile apps. With cost-effective storage classes and easy-to-use management features, you can optimize costs, organize data, and configure fine-tuned access controls to meet specific business, organizational, and compliance requirements.

Ref: http://aws.amazon.com/s3/

Requirement:

Programmatic Compute Optimizer Report generation and storing the report in AWS S3 bucket and automating the process to schedule it for weekly report generation & storage.

Solution:

Step-1:

Configuring S3 Bucket’s Policies and configuration of KMS policy in order to make S3 bucket ready to download a Compute Optimizer generated Report.

Bucket Policy:

In this case we assume the bucket keys are enabled (Secure Organizational practice)

{

"Version": "2012-10-17",

"Statement": [

{

"Effect": "Allow",

"Principal": {

"Service": "compute-optimizer.amazonaws.com"

},

"Action": "s3:GetBucketAcl",

"Resource": "arn:aws:s3:::testbucket"

},

{

"Effect": "Allow",

"Principal": {

"Service": "compute-optimizer.amazonaws.com"

},

"Action": "s3:GetBucketPolicyStatus",

"Resource": "arn:aws:s3:::testbucket"

},

{

"Effect": "Allow",

"Principal": {

"Service": "compute-optimizer.amazonaws.com"

},

"Action": "s3:PutObject",

"Resource": "arn:aws:s3:::testbucket/compute-optimizer/account id/\*",

"Condition": {

"StringEquals": {

"aws:SourceArn": "arn:aws:compute-optimizer:us-east-1:account id:\*",

"s3:x-amz-acl": "bucket-owner-full-control",

"aws:SourceAccount": "account id"

}

}

}

]

}

Setting the AWS KMS key policy:

Add the following to existing KMS key.

{

"Sid": "Allow use of the key to Compute Optimizer",

"Effect": "Allow",

"Principal": {

"Service": "compute-optimizer.amazonaws.com"

},

"Action": [

"kms:GenerateDataKey",

"kms:Decrypt"

],

"Resource": "\*",

"Condition": {

"StringEquals": {

"aws:SourceAccount": "account id",

"aws:SourceArn": "arn:aws:compute-optimizer:region:account id:\*"

}

}

},

After Attaching the following policies to an existing bucket/ newly created bucket.

Run the following commands with the code build:

- echo checking aws version

- aws --version

- echo running the command to get EC2 compute Optimizer recommendations

- aws compute-optimizer export-ec2-instance-recommendations --s3-destination-config bucket=testbucket/accountnumber-accountname/region/ec

- echo running the command to get EBS compute Optimizer recommendations tb/1234/ebs/

- export-ebs-volume-recommendations --s3-destination-config bucket=testbucket

- echo running the command to get Lambda compute Optimizer recommendations

- export-lambda-function-recommendations --s3-destination-config bucket=testbucket

- echo running the command to get ECS compute Optimizer recommendations

- aws compute-optimizer export-ecs-service-recommendations –s3-destination-config bucket=testbucket

- echo running the command to get EC2 ASG compute Optimizer recommendations

-export-auto-scaling-group-recommendations --s3-destination-config bucket=testbucket

Create a code build execution Role with AWS compute optimizer read permissions (Write a custom inline policy)

JSON Compute Optimizer execution Policy:

Execute the code build to test the functionality.

Scheduling with AWS event bridge:

Schedule an Event Bridge Cron Job with target as code-build and schedule it to run weekly / as desired.

A screenshot of a schedule

Description automatically generated

A screenshot of a schedule

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated