**AWS Compute Optimizer**

AWS Compute Optimizer is a service that analyses the configuration and utilization metrics of your AWS resources. It reports whether your resources are optimal, and generates optimization recommendations to reduce the cost and improve the performance of your workloads. Compute Optimizer also provides graphs showing recent utilization metric history data, as well as projected utilization for recommendations, which you can use to evaluate which recommendation provides the best price-performance trade-off. The analysis and visualization of your usage patterns can help you decide when to move or resize your running resources, and still meet your performance and capacity requirements.

**Supported resources**

* Amazon Elastic Compute Cloud (Amazon EC2) instances
* Amazon EC2 Auto Scaling groups
* Amazon Elastic Block Store (Amazon EBS) volumes
* AWS Lambda functions

**Requirements For AWS Compute Optimizer To Work**

* CloudWatch metric requirements
* Amazon EC2 instance requirements
* Auto Scaling group requirements
* Amazon EBS volume requirements
* Lambda function requirements

**CloudWatch metric requirements**

To generate recommendations, Compute Optimizer requires at least 30consecutive hours of CloudWatch metric data from your resource.  It can take up to 12 hours to complete the analysis. After the analysis is complete, resource recommendations appear in the Compute Optimizer console.

**Amazon EC2 instance requirements**

Compute Optimizer generates recommendations for several instance types. You can run unsupported instance types in addition to supported types. However, Compute Optimizer only generates recommendations for supported instances. Not all instance types are available in every AWS Region that Compute Optimizer

The following shows which instance types Compute Optimizer supports.

**C1, C3, ,C4 ,C5 ,C5a,C5ad, C5d,C5n ,C6a, C6g ,C6gd, C6gn ,C6i ,C7g ,D2,D3 ,D3en ,H1 ,Hpc6a ,I2 ,I3, I3en, Im4gn, Is4gen ,M1 ,M2 ,M3,M4,M5,M5a ,M5ad ,M5d ,M5dn ,M5n ,M5zn ,M6a ,M6g ,M6gd ,M6i , R3,R4, R5 ,R5a,R5ad ,R5b ,R5d ,R5dn,R5n,R6g ,R6gd ,R6i ,T1, T2 ,T3 ,T3a ,T4g ,X1 ,X1e ,X2gd ,z1d**

The following shows which instance types Compute Optimizer do not supports.

**A1 , DL1, F1,G2 ,G3 , G4ad , G4dn , G5 ,G5g ,High memory (u-\*), Inf1, Mac1 , P2 ,P3 ,P3dn, P4d, VT1 , X2idn ,X2ieden , X2iezn**

Note:- Compute Optimizer doesn't generate recommendations for Spot Instances.

**Auto Scaling Group Requirement**

Compute Optimizer generates recommendations for Auto Scaling groups that run supported instance types. The supported instance types are listed in the preceding Amazon EC2 instance requirements section.

 Auto Scaling groups must meet the following requirements:

* Run only a single instance type (no mixed instance types).
* The values for desired, minimum, and maximum capacity are all the same (for example, an Auto Scaling group with a fixed number of instances).
* No scaling policy is attached.
* No overrides are configured.

**Amazon EBS volume requirements**

Compute Optimizer generates recommendations for General Purpose SSD (gp2 and gp3) and Provisioned IOPS SSD (io1 and io2) EBS volume types that are attached to an instance. Compute Optimizer also generates recommendations from General Purpose SSD (gp2) volumes to General Purpose SSD (gp3) volumes from the previously mentioned volume types. Data is only reported to CloudWatch when the volume is attached to an instance. The volume must be attached to an instance for at least 30 consecutive hours. This is to meet the metric data requirement described earlier in this guide.

**Lambda Function Requirements**

Compute Optimizer generates memory size recommendations only for Lambda functions that meet the following requirements:

* Configured memory is less than or equal to 1,792 MB
* Functions are invoked at least 50 times in the last 14 days

Functions with a finding of **Unavailable** don't appear in the Compute Optimizer console and don't receive recommendations.

**Note**:- AWS Compute optimizer normally will use cloud watch metrics of 14 days by default if we use paid version it will use 3 months cloud watch metrics