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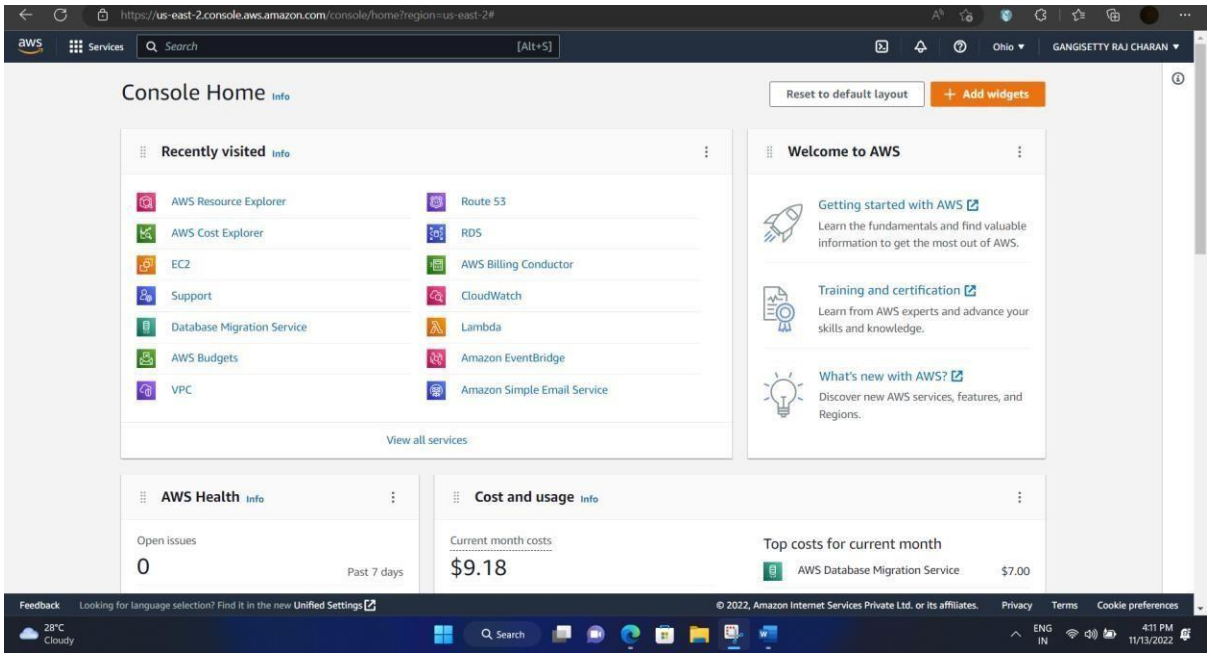
RA2011028010083

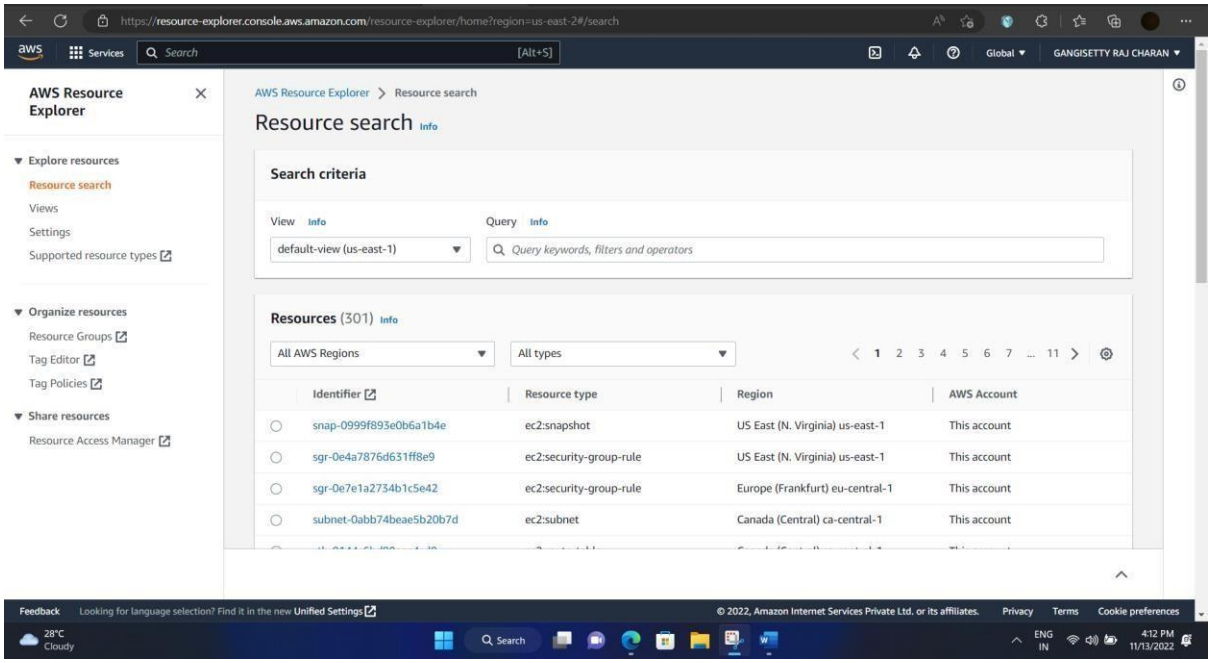
EXPERIMENT 10 Optimize AWS Resource Utilization

AIM: To Optimize The Resource Utilization in Aws PROCEDURE:

1) Login To Your Aws Account

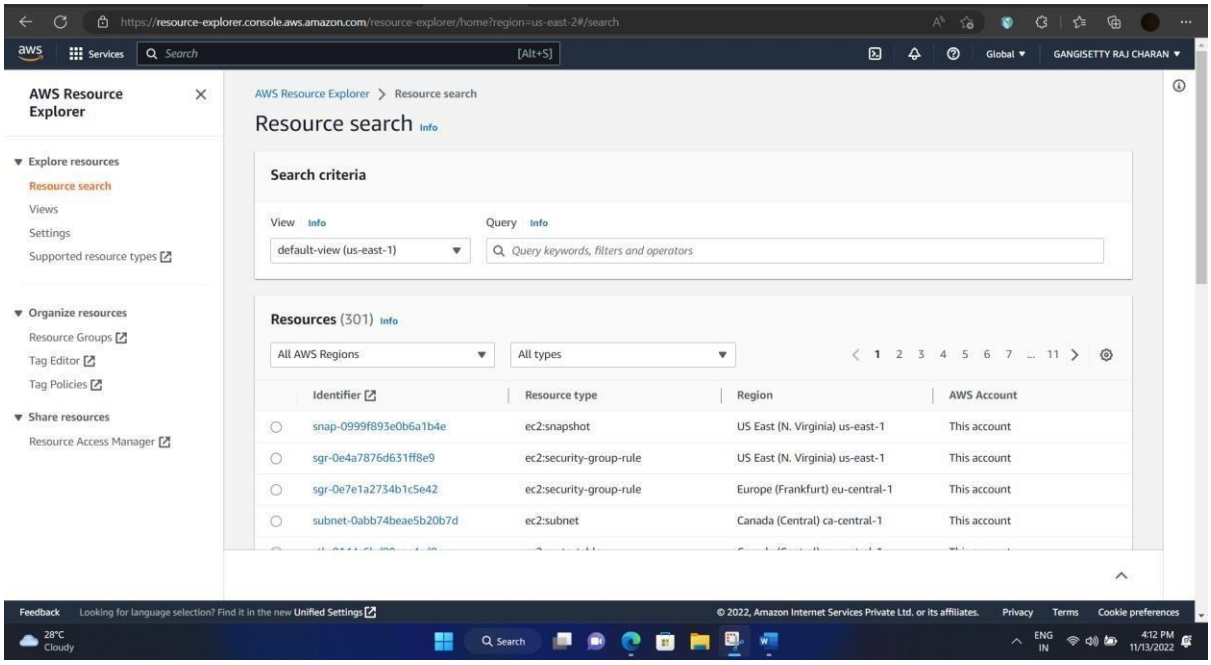


2) Now Head Towards AWS Resource Explorer



3) These suggestions reveal instances that are idle or underused across all of your accounts and geographies. This makes it possible

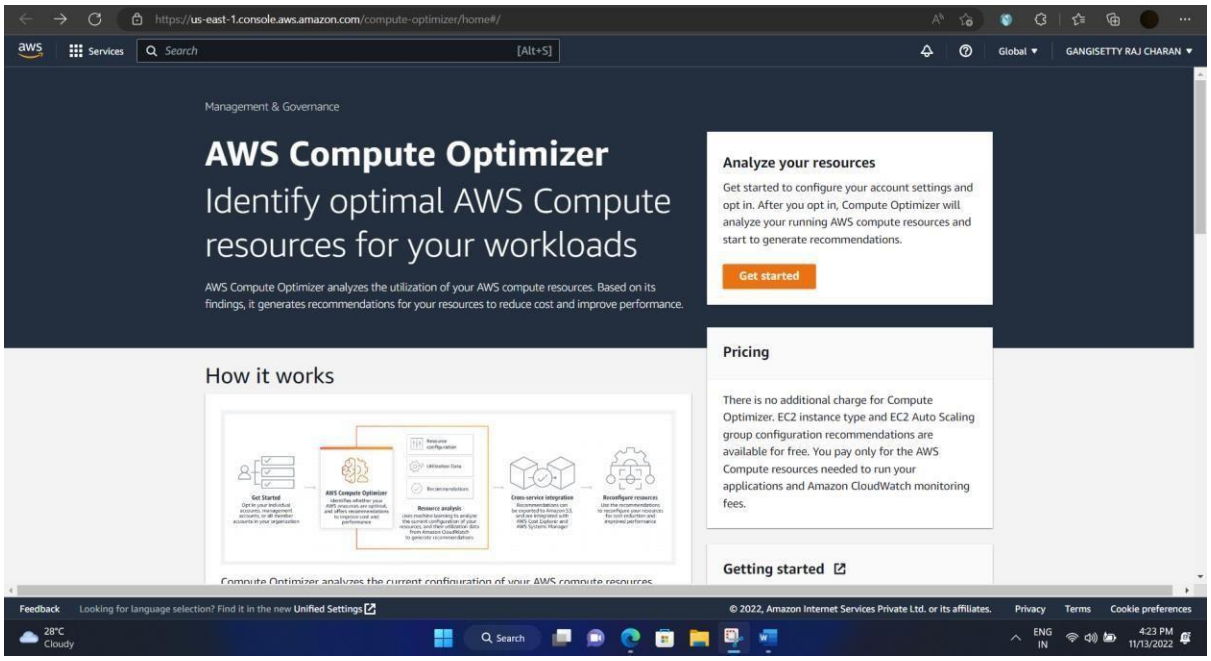
to identify overused services without actually using AWS Resource Explorer.

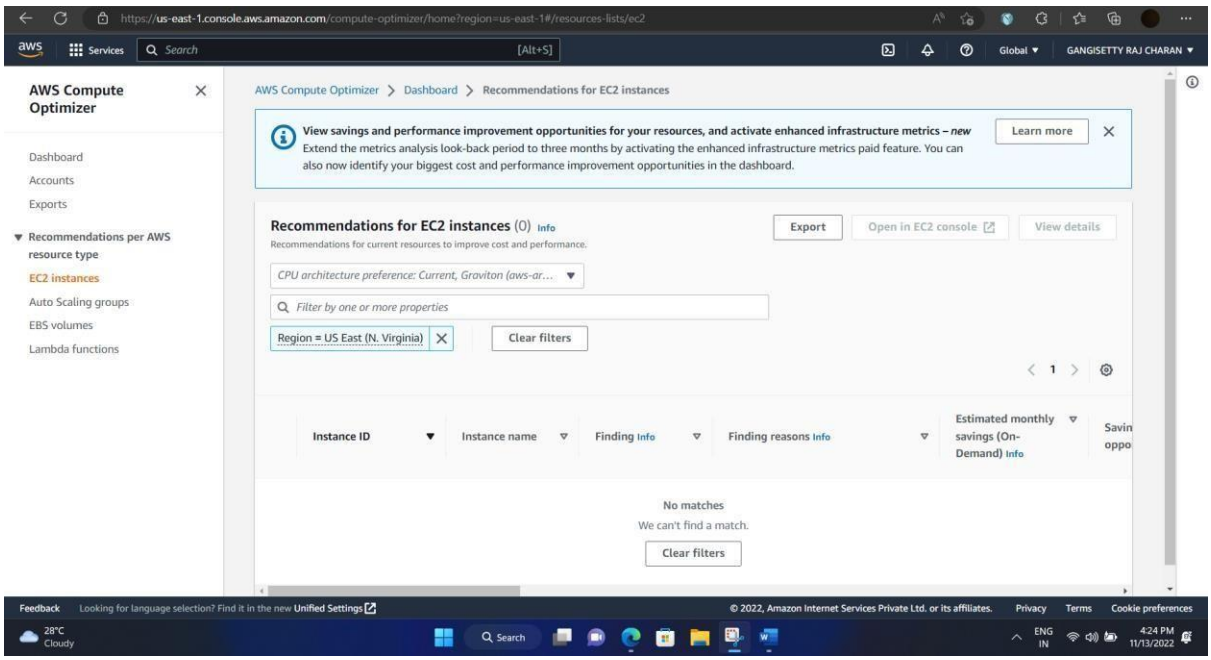


You Can see I have 301 resources in all regions of the AWS

4) In order to find potential for cost reductions, AWS examines your previous EC2 resource utilization, your Amazon CloudWatch data, and your current reservation footprint (e.g., by terminating idle instances or downsizing active instances to lower-cost options). AWS might suggest downsizing your m5.2xlarge instance to m5.xlarge or m5.large and show you how much money you can save based on your usage and any applicable m5 family reservations, for instance, if your m5.2xlarge instance's maximum utilization over the past 14 days has been 20%.

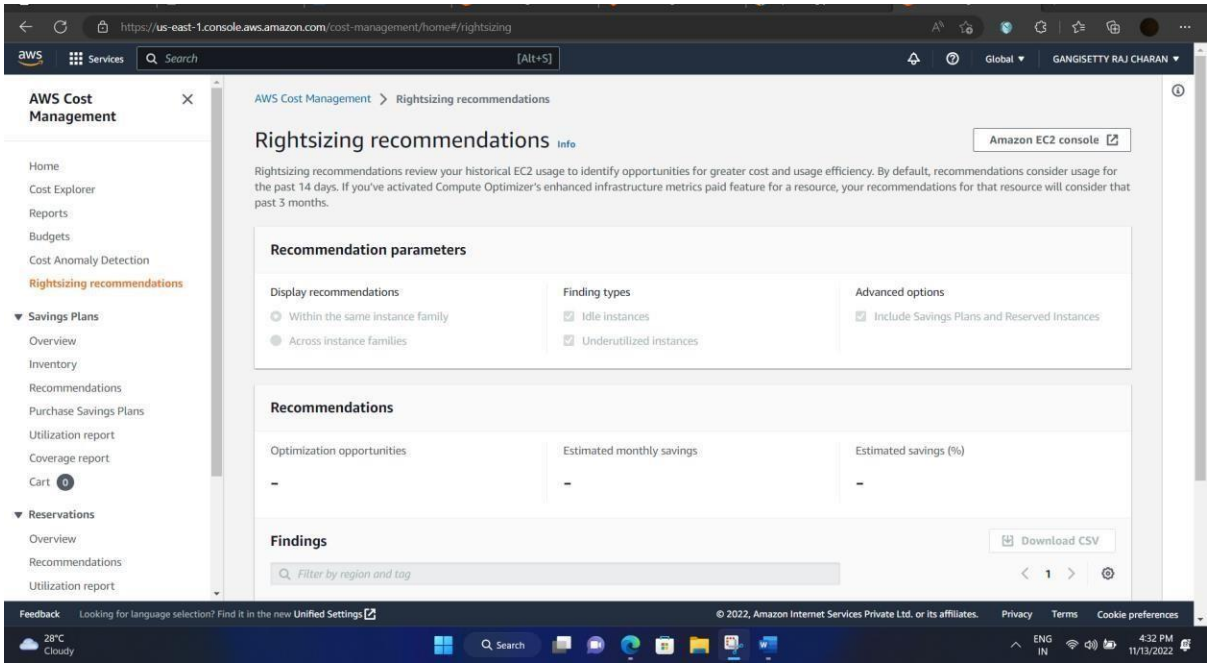
5) To See AWS compute optimizer go to AWS Compute Optimizer (amazon.com) and you can estimate where and when the services utilization is happening and whether to keep them or not





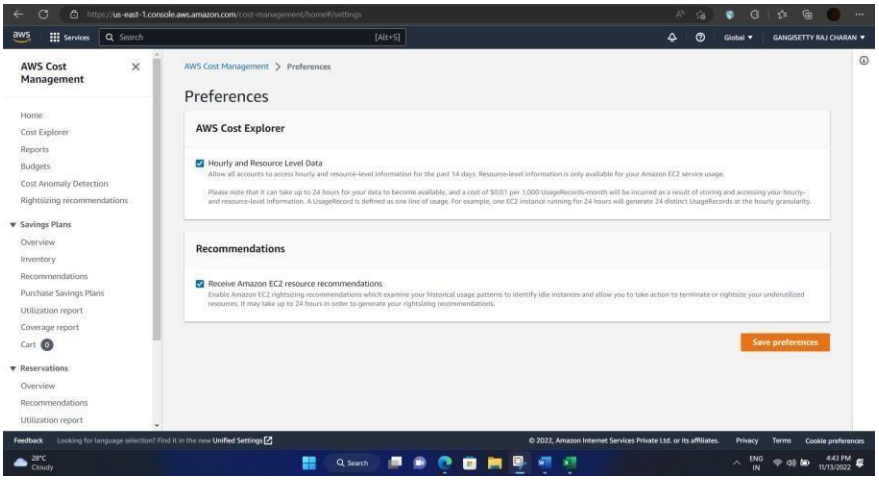
6) Now Get Into The documentation and further understand how the optimization works

i) Go to https://console.aws.amazon.com/cost-management/home and head towards rightsizing recommendations



To enable rightsizing recommendations

1. Open the AWS Cost Management at https://console.aws.amazon.com/cost-management/home.
2. In the navigation pane, choose **Preferences**.
3. In the **Recommendations** section, choose **Receive Amazon EC2 resource recommendations**.



4. Choose **Save preferences**.

Using your rightsizing recommendations

You can see the following top-level key performance indicators (KPIs) in your rightsizing recommendations:

- **Optimization opportunities** – The number of recommendations available based on your resources and usage
- **Estimated monthly savings** – The sum of the projected monthly savings associated with each of the recommendations provided
- **Estimated savings (%)** – The available savings relative to the direct instance costs (On-Demand) associated with the instances in the recommendation list

To filter your rightsizing recommendations

1. Open the AWS Cost Management at https://console.aws.amazon.com/cost-management/home.
2. In the left navigation pane, choose **Rightsizing recommendations**.
3. At the top of the **Rightsizing Recommendations** page, filter your recommendations by selecting any or all of the following check boxes:
    - Idle instances (termination recommendations)
    - Underutilized instances
    - Include Savings Plans and Reserved Instances (option to consider existing Savings Plans or RI coverage in recommendation savings calculations)
    - Generate recommendations (option to generate recommendations within the instance family, or across multiple instance families)
4. Above the **Findings** table, use the search bar to filter by the following parameters:
    - Account ID (option available from the management account)
    - Region

- Cost allocation tag

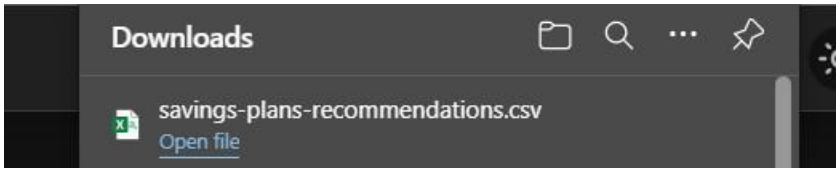
To view your rightsizing recommendations details

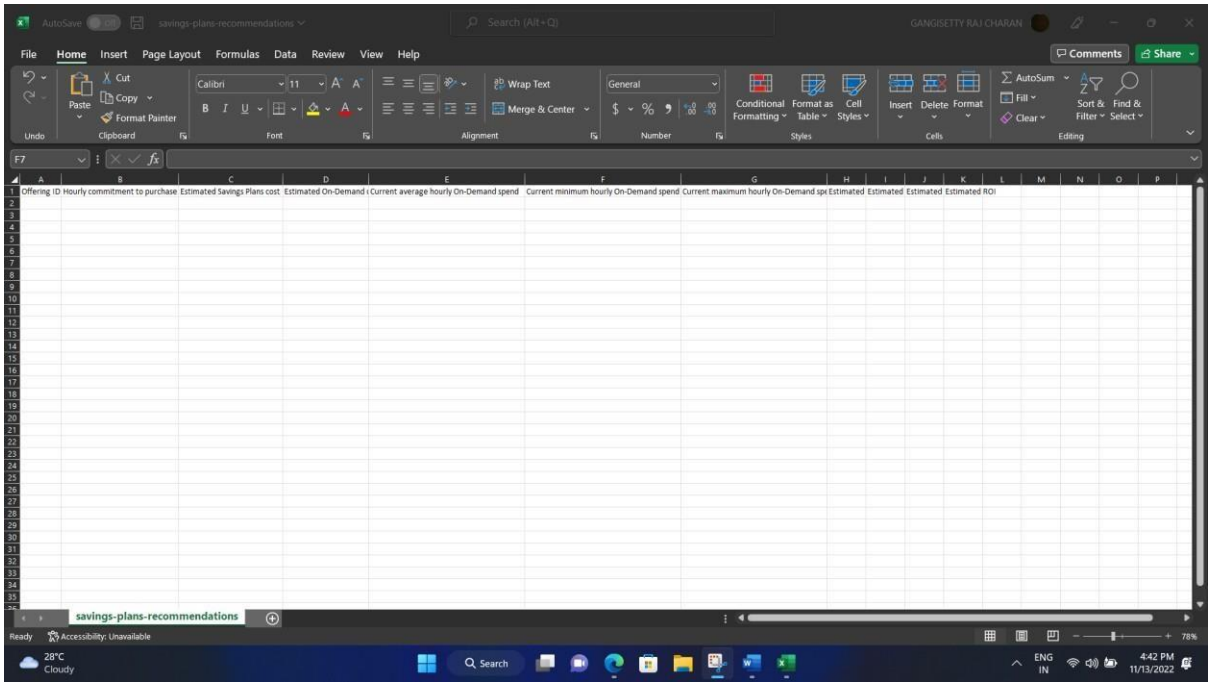
1. Open the AWS Cost Management at https://console.aws.amazon.com/cost-management/home.
2. In the left navigation pane, choose **Rightsizing recommendations**.
3. Choose **View**.

   The **View** button on the right of each recommendation opens a window that provides details on the instances and recommended actions.

To download your recommendations in CSV format

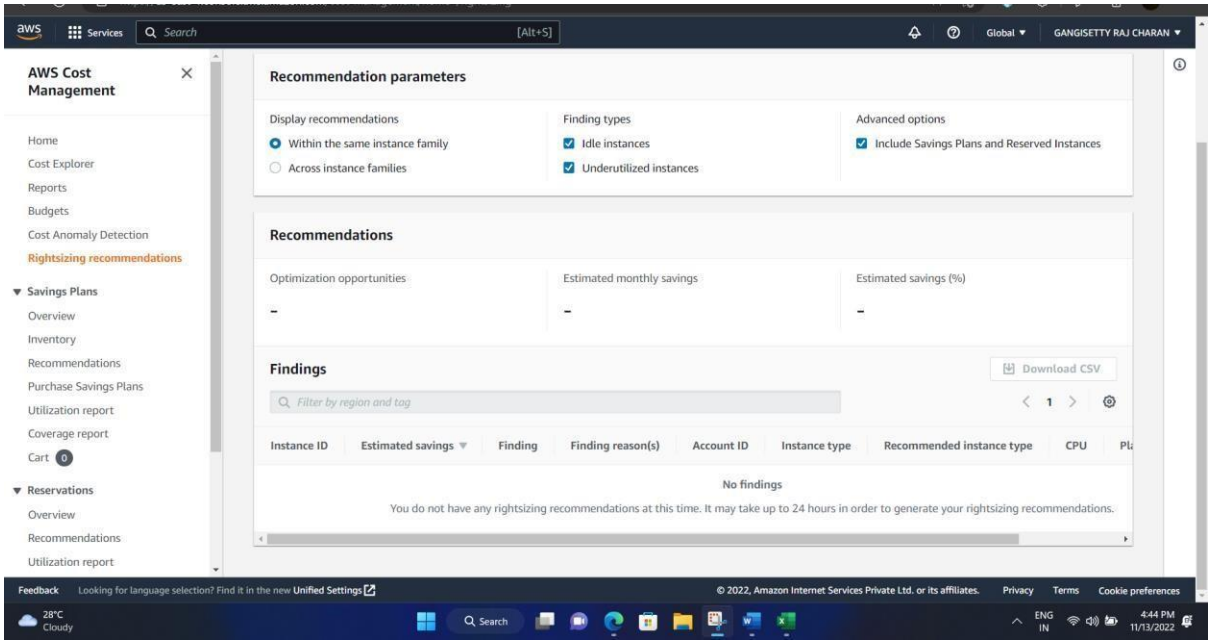
1. Choose **Launch Cost Explorer**.
2. In the left navigation pane, choose **Recommendations**.
3. Select **Download CSV**.





This file is empty because this is paid feature and I am not gonna pay right now because there is not a big use for me.

Since I have turned All options right now it might take 24-30 hours to get displayed to download csv file recommendations



7) CSV file details

The following is a list of fields in the downloadable CSV form from the **Rightsizing Recommendations** page. The fields are repeated if there are multiple rightsizing options available. The file also contains all of your relevant cost allocation tags.

- **Account ID** – The AWS account ID that owns the instance that the recommendation is based off of.
- **Account Name** – The name of the account that owns the instance that the recommendation is based off of.
- **Instance ID** – The unique instance identifier.
- **Instance Name** – The name you've given to the instance.
- **Instance Type** – The instance family and size of the original instance.
- **Instance Name** – The name you've given an instance. This field will show as blank if you haven't given the instance a name.

- **OS** – The operating system or platform of the current instance.
- **Region** – The AWS Region that the instance is running in.
- **Running Hours** – The total number of running hours of the instance over the last 14 days.
- **RI Hours** – The subset of the total running hours that are covered by an AWS reservation over the look-back period.
- **OD Hours** – The subset of the total running hours that are On-Demand over the look-back period.
- **SP Hours** – The subset of the total running hours that are covered by Savings Plans over the look-back period.
- **CPU Utilization** – The maximum CPU utilization of the instance over the look-back period.
- **Memory Utilization** – The maximum memory utilization of the instance over the look-back period (if available from the Amazon CloudWatch agent).
- **Disk Utilization** – The maximum disk utilization of the instance over the look-back period (if available from the CloudWatch agent - currently not supported).
- **Network Capacity** – The maximum network input/output operations per second capacity of the current instance. This isn't a measure of actual instance use or performance, only capacity. It's not considered in the recommendation.
- **EBS Read Throughput** – The maximum number of read operations per second.
- **EBS Write Throughput** – The maximum number of write operations per second.
- **EBS Read Bandwidth** – The maximum volume of read KiB per second.
- **EBS Write Bandwidth** – The maximum volume of write KiB per second.
- **Recommended Action** – The recommended action, either modify or terminate the instance.

- **Recommended Instance Type 1** – The instance family and size of the recommended instance type. For termination recommendations, this field is empty.
- **Recommended Instance Type 1 Estimated Saving** – The projected savings based on the recommended action, instance type, associated rates, and your current Reserved Instance (RI) portfolio.
- **Recommended Instance Type 1 Projected CPU** – The projected value of the CPU utilization based on utilization of current instance CPU and recommended instance specifications.
- **Recommended Instance Type 1 Projected Memory** – The projected value of the memory utilization based on utilization of current instance memory and recommended instance specifications.
- **Recommended Instance Type 1 Projected Disk** – The projected value of the disk utilization based on utilization of current instance disk and recommended instance specifications.
- **Recommended Instance Type 1 Network Capacity** – The maximum network input/output operations per second capacity of the recommended instance. This isn't a measure of actual instance use or performance, only capacity. It's not considered in the recommendation.

8) **This Rightsizing Recommendations are actually Enough to get the resources to better optimized and resource utilized**

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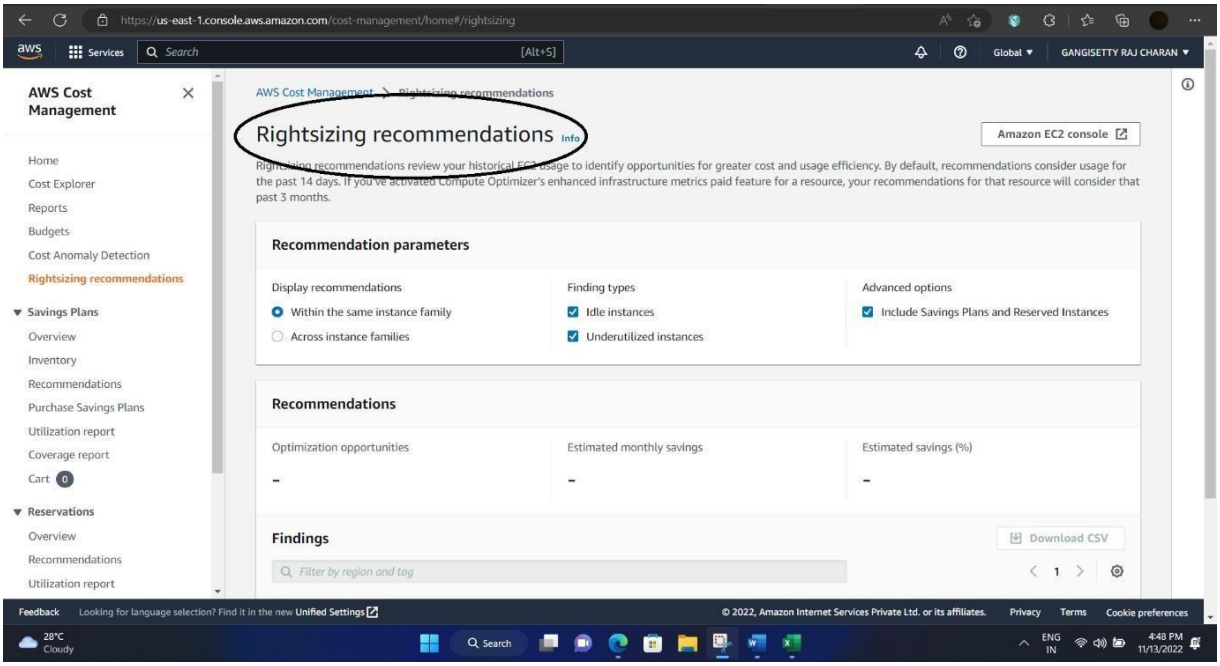

Result:We have Successfully Understood how to Optimize AWS Resource utilization