

# ALB Log Analytics and Monitoring using AWS S3, Athena, and QuickSight

Refer these links for more info or query

<https://docs.aws.amazon.com/elasticloadbalancing/latest/application/enable-access-logging.html>  
| > for bucket policy

<https://docs.aws.amazon.com/athena/latest/ug/create-alb-access-logs-table.html> >for athena query

## Step 1: Create a Launch Template

A launch template defines the AMI, instance type, security group, and other settings for your EC2 instances.

1. **Go to AWS Console → EC2**
2. Click **Launch Templates → Create Launch Template**
3. **Enter a Name** (e.g., `my-launch-template`)
4. **Choose AMI** (Amazon Linux.)
5. **Choose Instance Type** (e.g., `t2.micro`)
6. **Select Key Pair** (for SSH access)
7. **Select Security Group** (Allow HTTP, HTTPS, and SSH)
8. **Configure Storage** (Default is 8GB for Amazon Linux 2)

Add User Data for automatic bootstrapping (e.g., installing a web server)

```
#!/bin/bash
```

```
sudo yum update
```

```
sudo yum install httpd -y
```

```
sudo systemctl start httpd
```

```
sudo systemctl enable httpd
```

```
sudo wget
```

```
https://www.free-css.com/assets/files/free-css-templates/download/page296/finexo.zip
```

```
sudo unzip finexo.zip
```

```
sudo mv finexo-html/* /var/www/html/
```

Launch Templates (1/1)

Info

Actions

Create launch template

Q Search

Launch Template ID

Launch Template Name

Default Version

Latest Version

Create Time

Created By

lt-05f87d594a147d5d6

querty

1

1

2025-01-29T11:16:08.000Z

arn:aws:iam::5093

## Step 2: Create an Auto Scaling Group (ASG)

1. Go to **EC2 Dashboard** → **Auto Scaling Groups**
2. Click **Create Auto Scaling Group**
3. **Enter Name** (e.g., **my-asg**)
4. **Choose Launch Template** (Select the template created in Step 1)
5. Click **Next**

### Choose launch template Info

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group.

#### Name

**Auto Scaling group name**  
Enter a name to identify the group.

Must be unique to this account in the current Region and no more than 255 characters.

#### Launch template Info

**Launch template**  
Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.

**Info** For accounts created after May 31, 2023, the EC2 console only supports creating Auto Scaling groups with launch templates. Creating Auto Scaling groups with launch configurations is not recommended but still available via the CLI and API until December 31, 2023.

## Configure Network

6. Select **VPC** (Default or Custom)
7. Select **Subnets** (Choose at least 2 different AZs for HA)
8. Click **Next**

## Network Info

For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly.

### VPC

Choose the VPC that defines the virtual network for your Auto Scaling group.

vpc-0dadfeeb73eefb2a2  
172.31.0.0/16 Default



[Create a VPC](#)

### Availability Zones and subnets

Define which Availability Zones and subnets your Auto Scaling group can use in the chosen VPC.

Select Availability Zones and subnets



us-east-1d | subnet-033f2168b1a1a1a6d X  
172.31.0.0/20 Default

us-east-1c | subnet-03458739c8333e79c X  
172.31.32.0/20 Default

[Create a subnet](#)

### Availability Zone distribution - *new*

Auto Scaling automatically balances instances across Availability Zones. If launch failures occur in a zone, select a strategy.

#### ☒ Balanced best effort

If launches fail in one Availability Zone, Auto Scaling will attempt to launch in another healthy Availability Zone.

#### ☐ Balanced only

If launches fail in one Availability Zone, Auto Scaling will continue to attempt to launch in the unhealthy Availability Zone to preserve balanced distribution.

## Configure Load balancing

1. Attach new load balancer
2. Application Load Balancer
3. Enter Name: **my-alb**
4. Scheme: Internet-facing
5. Create a Target Group:
6. Name: **my-target-group**

## Attach to a new load balancer

Define a new load balancer to create for attachment to this Auto Scaling group.

### Load balancer type

Choose from the load balancer types offered below. Type selection cannot be changed after the load balancer is created. If you need a different type of load balancer than those offered here, [visit the Load Balancing console](#).

☒ Application Load Balancer  
HTTP, HTTPS

☐ Network Load Balancer  
TCP, UDP, TLS

### Load balancer name

Name cannot be changed after the load balancer is created.

demosf-1

### Load balancer scheme

Scheme cannot be changed after the load balancer is created.

☐ Internal

☒ Internet-facing

## Listeners and routing

If you require secure listeners, or multiple listeners, you can configure them from the [Load Balancing console](#) after your load balancer is created.

### Protocol

HTTP

### Port

80

### Default routing (forward to)

Create a target group

### New target group name

An instance target group with default settings will be created.

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## Configure Scaling Policy

9. Choose **Desired Capacity** (e.g., 2)
10. Set **Minimum Instances** (2)
11. Set **Maximum Instances** (3)
12. Enable **Scaling Policies** (optional, to scale based on CPU usage)

**Desired capacity**  
Specify your group size.

**Scaling** [Info](#)  
You can resize your Auto Scaling group manually or automatically to meet changes in demand.

**Scaling limits**  
Set limits on how much your desired capacity can be increased or decreased.

**Min desired capacity**  
  
Equal or less than desired capacity

**Max desired capacity**  
  
Equal or greater than desired capacity

**Automatic scaling - optional**  
**Choose whether to use a target tracking policy** [Info](#)  
You can set up other metric-based scaling policies and scheduled scaling after creating your Auto Scaling group.

☐ **No scaling policies**  
Your Auto Scaling group will remain at its initial size and will not dynamically resize to meet demand.

☒ **Target tracking scaling policy**  
Choose a CloudWatch metric and target value and let the scaling policy adjust the desired capacity in proportion to the metric's value.

**Scaling policy name**

**Metric type** [Info](#)  
Monitored metric that determines if resource utilization is too low or high. If using EC2 metrics, consider enabling detailed monitoring for better scaling performance.

**Target value**

**Instance warmup** [Info](#)

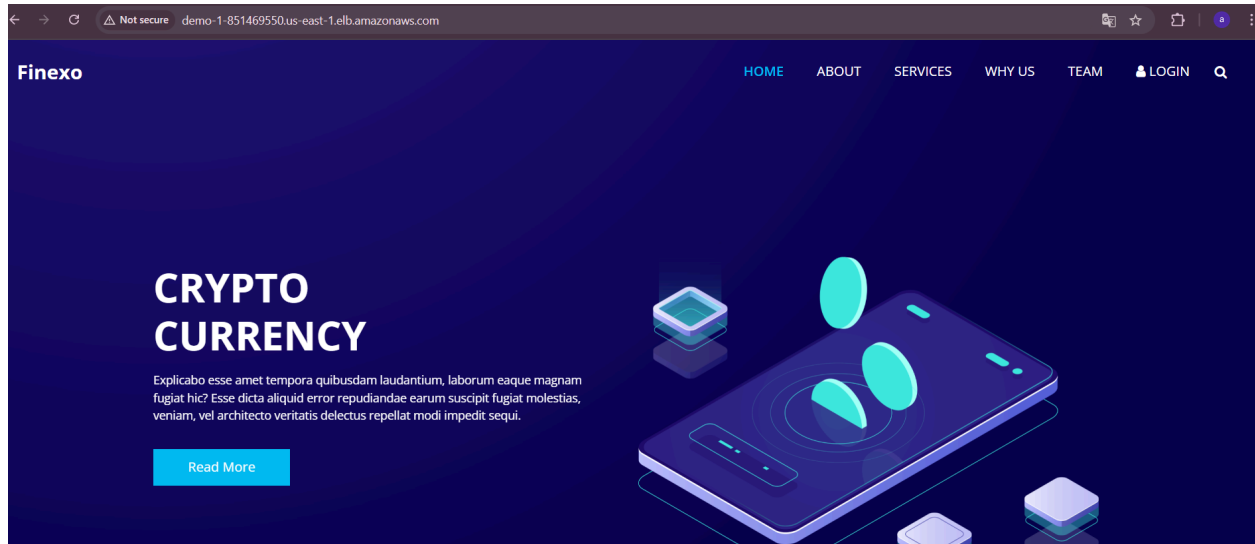
Auto scaling group is created

Auto Scaling groups (1) <a href="#">Info</a>								
<input type="text" value="Search your Auto Scaling groups"/>								
<input type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
<input type="checkbox"/>	demo	querty   Version Default	2	-	2	2	3	us-east-1a, us-east-1b

---

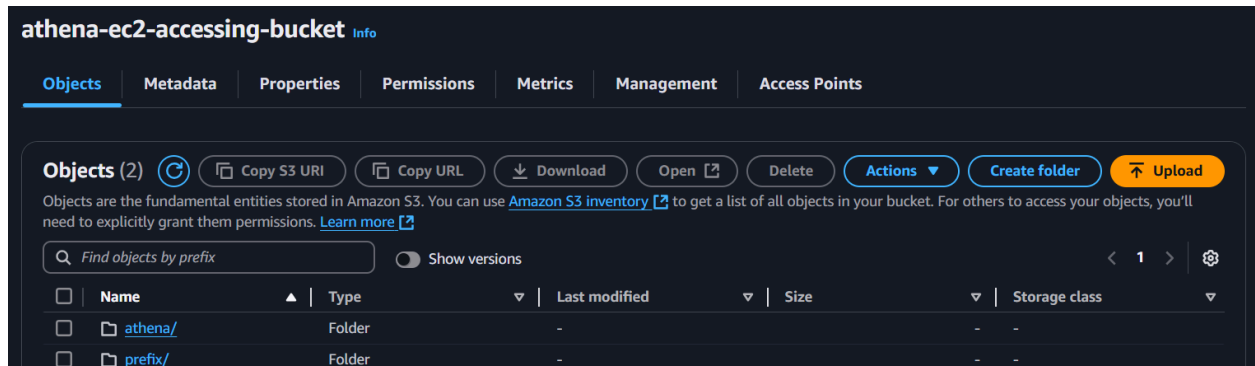
## Step 3: Test the Setup

1. Go to **EC2** → **Load Balancers** → Copy the **ALB DNS Name**
2. Open the DNS in a browser → You should see **your webpage**



## Step 4: Create an S3 Bucket with a Prefix (Folder)

1. **Go to S3 Console:**
  - Navigate to the **AWS S3 service**
  - Click **Create Bucket**
2. **Enter Bucket Name:**
  - Choose a **globally unique name** (e.g., **my-alb-logs-bucket**)
  - Select your **AWS region** (e.g., **us-east-1**)
3. **Configure Settings:**
  - **Disable Block Public Access (optional, but recommended)**
  - **Enable Object Ownership (ACLs enabled)**
4. **Click Create Bucket**
5. **Create a Prefix (Folder):**
  - Click on your newly created bucket
  - Click **Create Folder**
  - Enter a **prefix name** (e.g., **alb-logs/**)
  - Click **Create Folder**



## Step 5: Set S3 Bucket Policy for ALB Logs in **us-east-1** Region

1. Go to the AWS Console → S3 Service
2. Select Your Bucket (**my-alb-logs-bucket**)
3. Click Permissions → Bucket Policy
4. Paste the following JSON policy:

```
{  
  
  "Version": "2012-10-17",  
  
  "Statement": [  
  
    {  
  
      "Effect": "Allow",  
  
      "Principal": {  
  
        "AWS": "arn:aws:iam::127311923021:root"  
  
      },  
  
      "Action": "s3:PutObject",  
  
      "Resource": "arn:aws:s3:::athena-ec2-accessing-bucket/*"  
  
    }  
  
  ]  
  
}
```

✓ Replace the following:

- **127311923021** → ALB account ID
  - **arn:aws:s3:::athena-ec2-accessing-bucket/\*** → Your S3 ARN
5. Click Save

## Step 6: Enable ALB Logging to S3

To allow Application Load Balancer (ALB) to log traffic to your S3 bucket, you need to enable access logs and grant permissions.

1. Go to EC2 Dashboard → Click Load Balancers
2. Select Your ALB
3. Click Edit Attributes
4. Enable Access Logs
5. S3 Bucket Name: Enter **my-alb-logs-bucket**
6. Prefix (Optional): Enter **alb-logs/**
7. Click Save Changes

**Monitoring**

☒ **Access logs**  
Access logs deliver detailed logs of all requests made to your Elastic Load Balancer. Choose an existing S3 location. If you don't specify a prefix, the access logs are stored in the root of the bucket. Additional charges apply. [Learn more](#)

**S3 URI**  
Q s3://athena-ec2-accessing-bucket/prefix X View Browse S3  
Format: s3://bucket/prefix

☐ **Connection logs**  
Connection logs deliver detailed logs of all connections made to your Elastic Load Balancer. Choose an existing S3 location. If you don't specify a prefix, the access logs are stored in the root of the bucket. Additional charges apply. [Learn more](#)

**Objects** Properties

**Objects (1)** Copy S3 URI Copy URL Download Open Delete Actions Create folder Upload

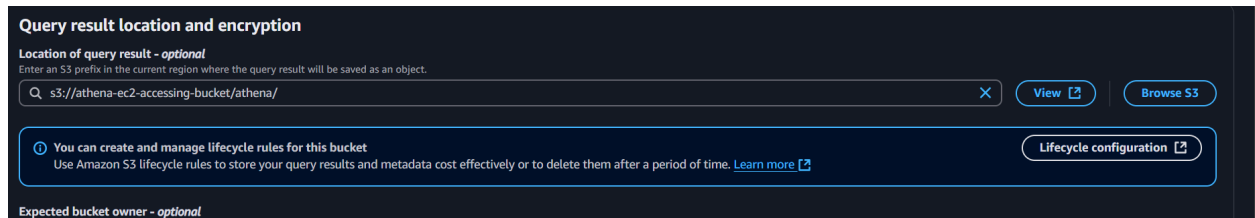
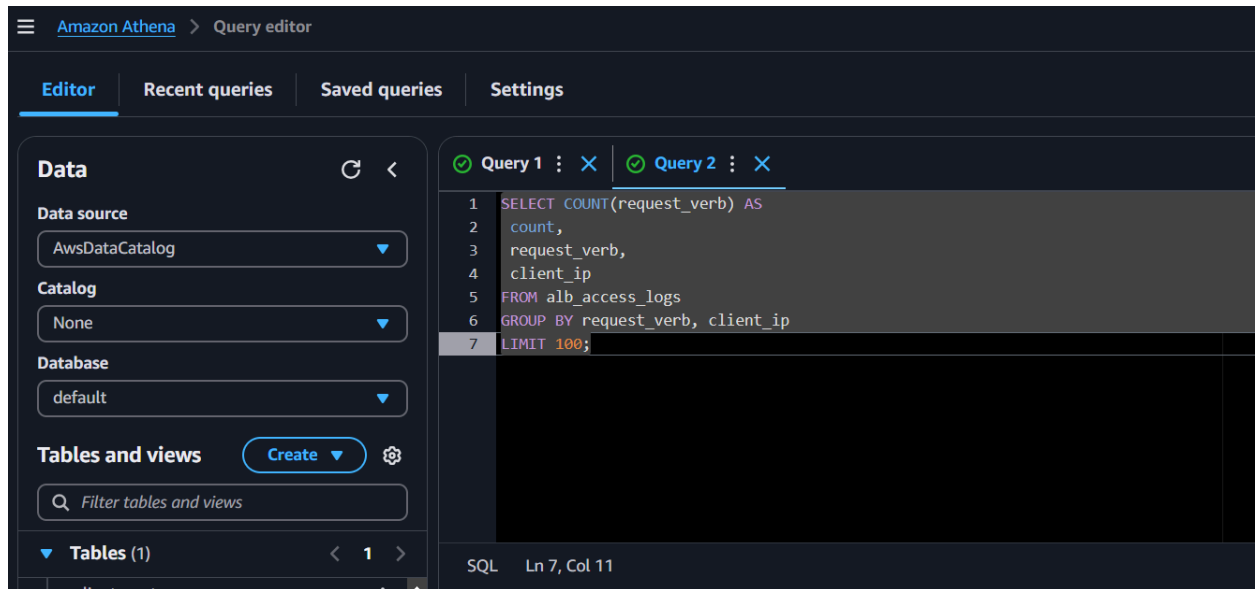
Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Find objects by prefix Show versions < 1 > Settings

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	AWSLogs/	Folder	-	-	-

## Step 7: Analyze ALB Logs Using AWS Athena

1. Go to the AWS Athena Console
2. Open the **Query Editor**
3. Run the following SQL command to create a database for ALB logs:
4. Goto setting
5. Click on manage
6. Add query result location

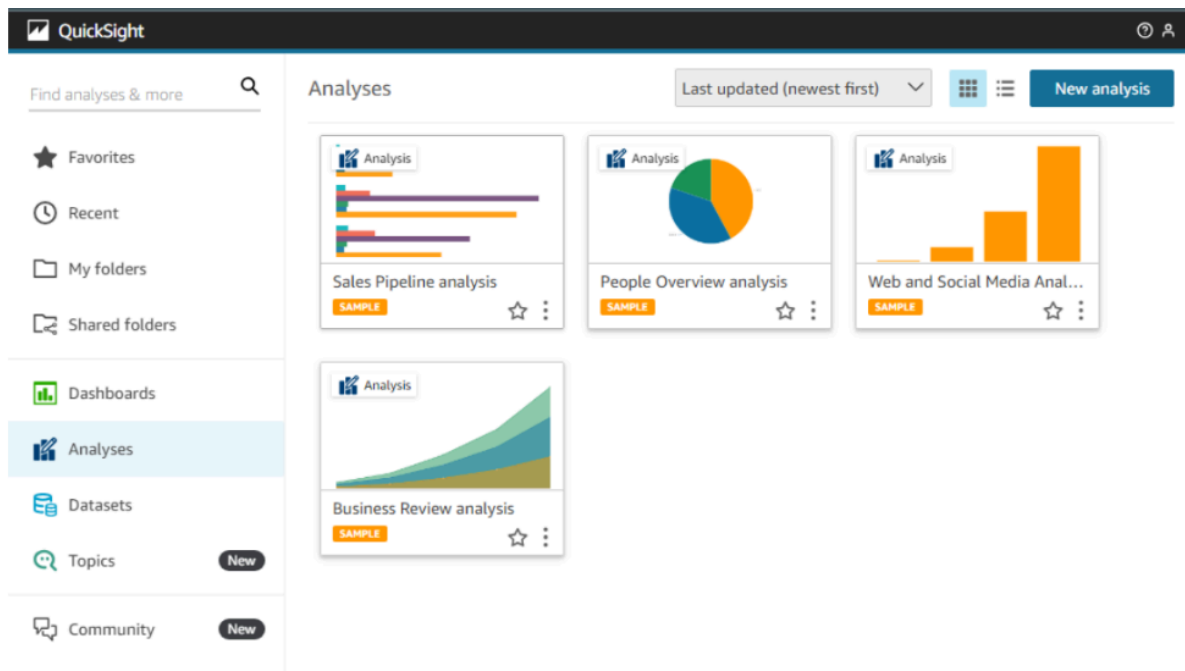
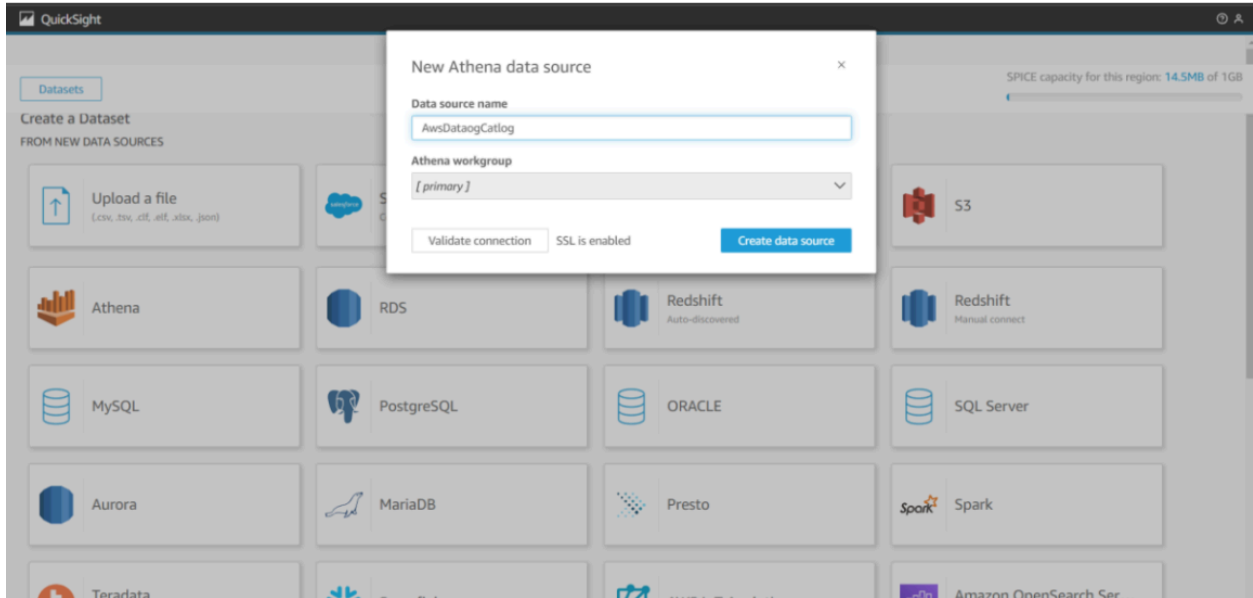


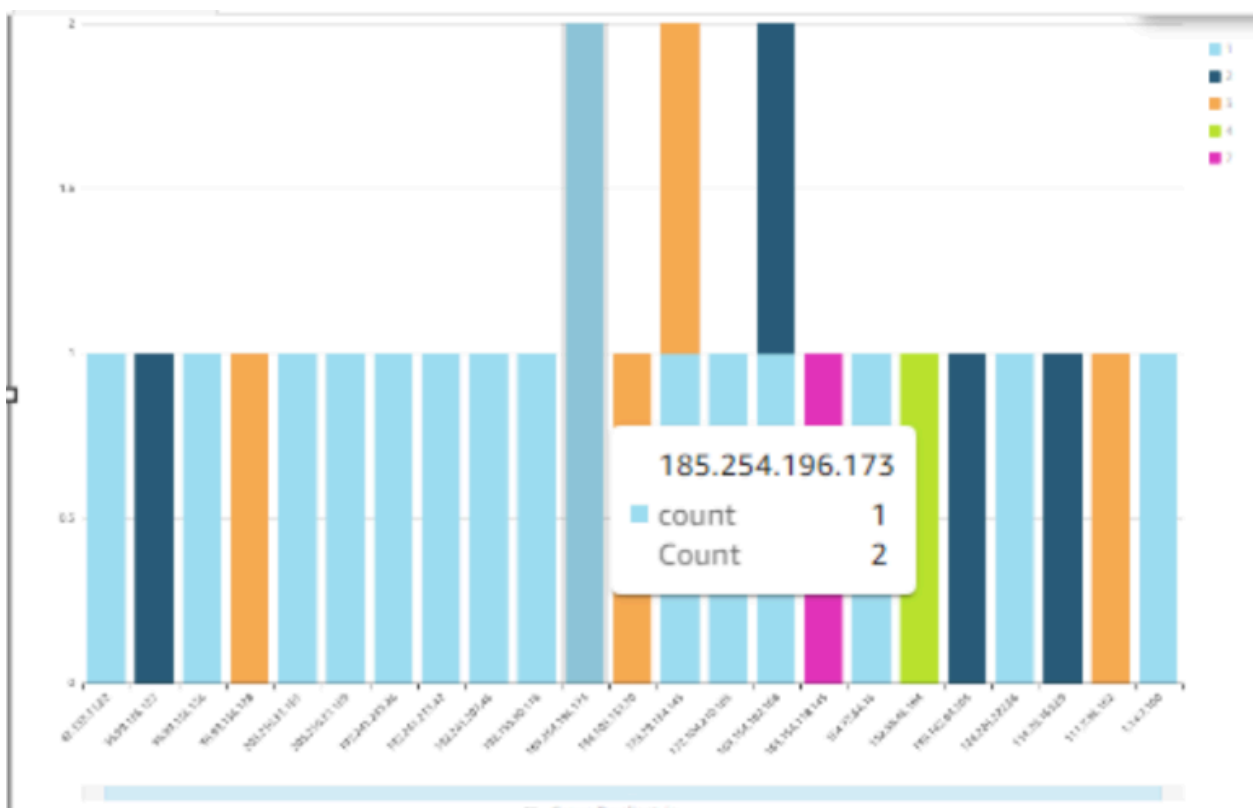
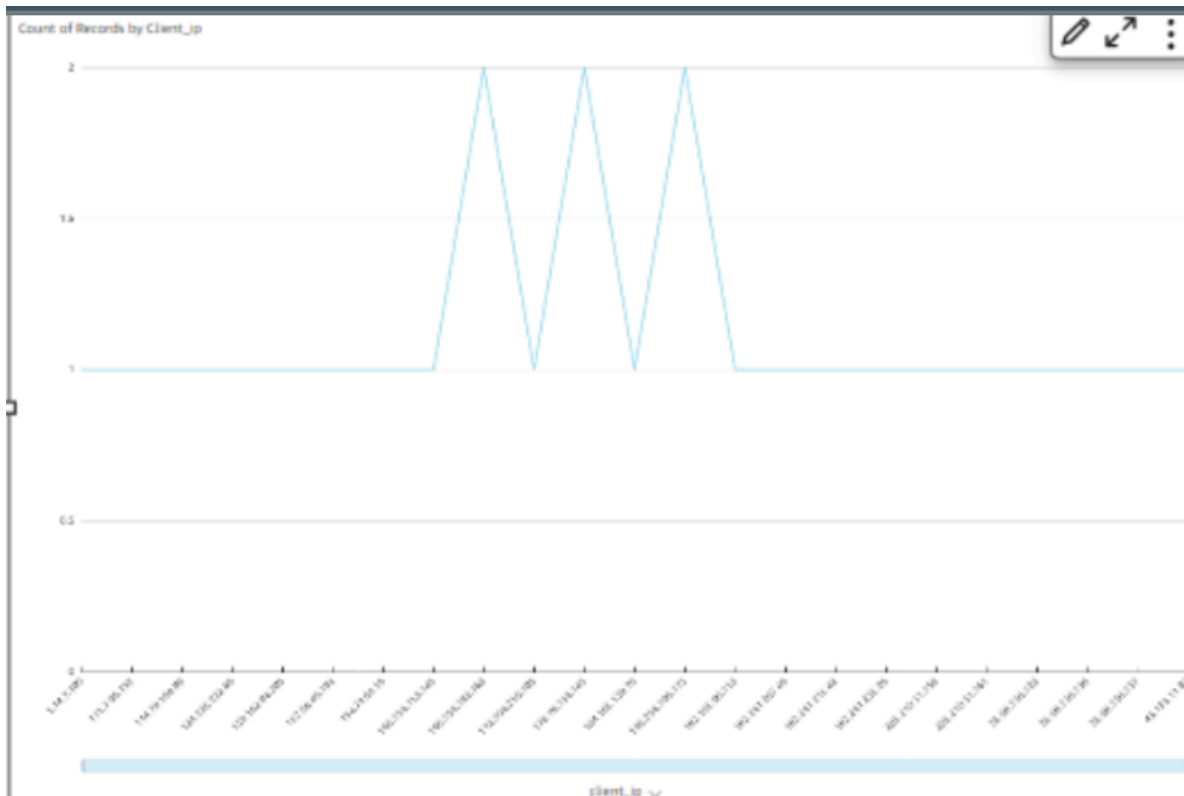
## Step 8: Visualize ALB Logs in Amazon QuickSight

### 📌 Step 8.1: Enable Amazon QuickSight to Access Athena & S3

1. Go to AWS QuickSight Console → [QuickSight](#)
2. Navigate to New Analysis > New dataset > Athena
3. Click on create data source
4. Select the Y-axis dimension and Group/Color dimension







In this way you can use the Amazon Quick sight Analysis for Analysing the overall tasks.