COS20019 - Cloud Computing Architecture Assignment 2 Developing a highly available Photo Album website.

Name : Hridoy Ahmed

Student Id : 103798793

Lab Section : Friday 2:30- 4:30Pm

Due date: 9 AM (AEST) - Monday of Week 10

I. INTRODUCTION

Assignment 2 in COS20019 focuses on enhancing the Photo Album website infrastructure created in Assignment 1b. Key goals include setting up IAM roles, securing S3 access, creating a Lambda function, custom AMI, launch template, auto-scaling group, Elastic Load Balancer, and enforcing access control via AWS NACLs. The assignment builds on the existing website, improving its infrastructure and functionality. Students' proficiency in AWS and cloud architecture will be assessed, emphasizing security and best practices. This hands-on exercise equips students with valuable real-world cloud skills.

II. PHOTO ALBUM & PHOTO UPLOADER

The Photo Album website is actively hosted on an AWS " Hridoyahmed" EC2 instance and can be accessed using an Elastic IP. Users can easily upload images through a user-friendly interface, and these images are stored in the "bucket3445" S3 buckey.

Website URL: http://3.224.206.11/photoalbum/album.php

VPC configured with 2 public subnets and 2 private subnets with the NAT gateway and the IGW

Figure 1 VPC Creation

Security Group Configuration

Figure 2 Security Group Creation
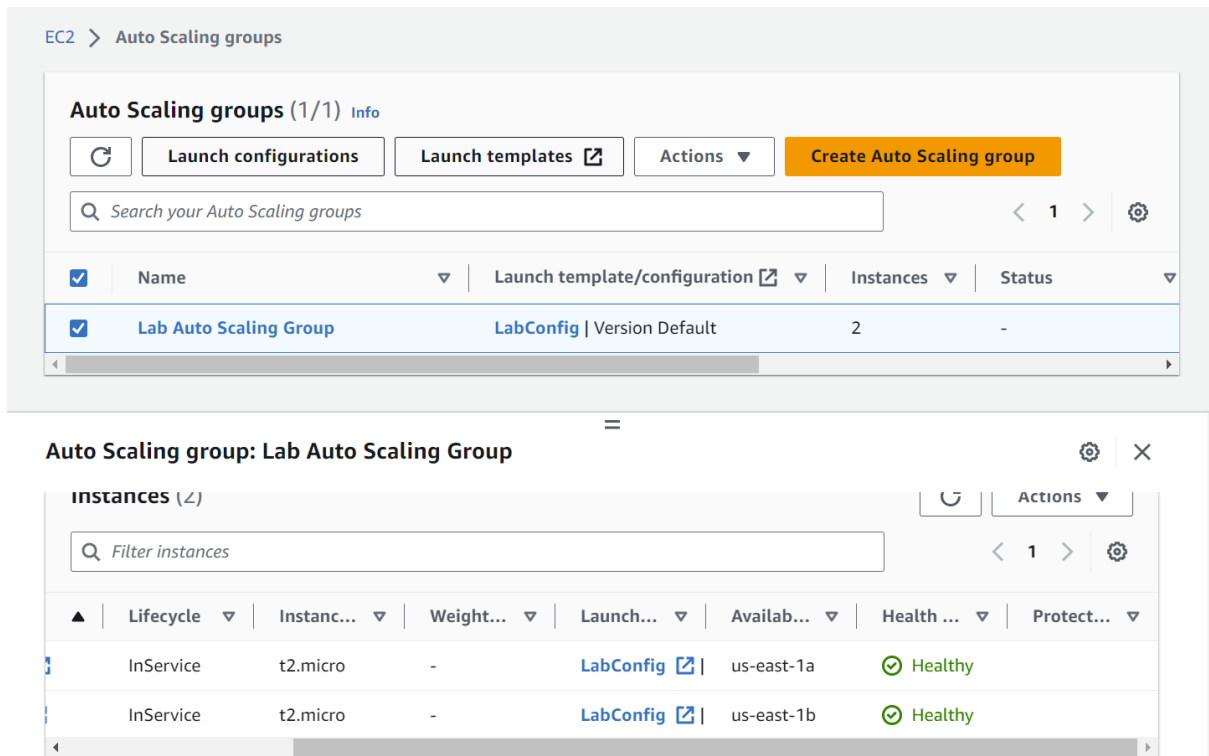
Auto Scaling Group Configuration

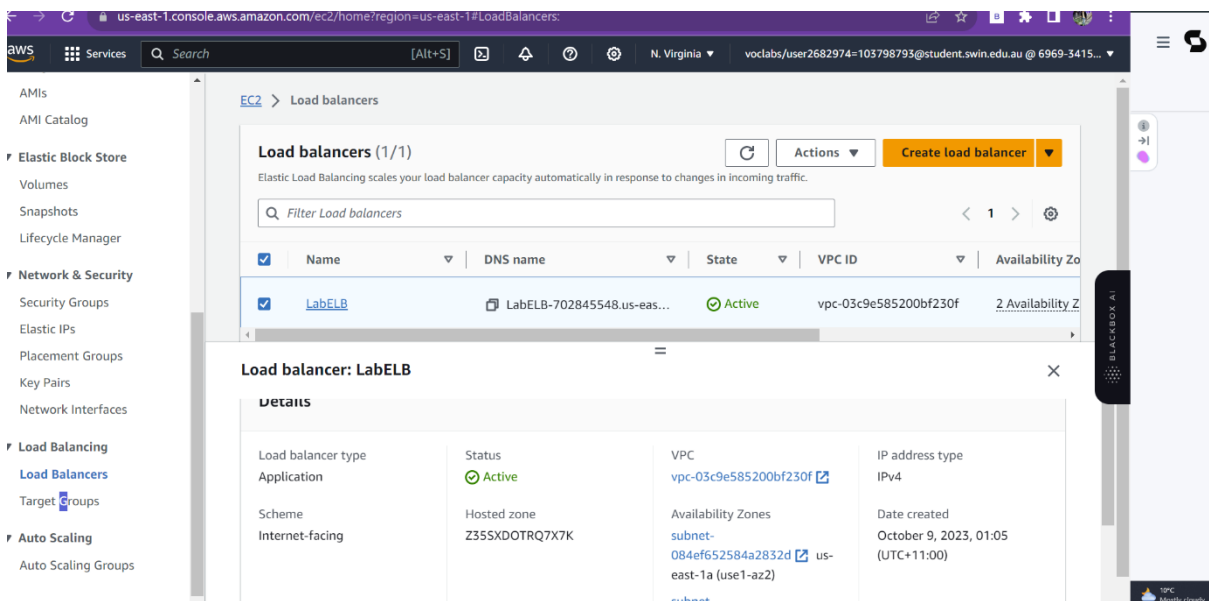Figure 3 Auto Scaling Creation

Load Balancer Configuration

Figure 4 Load Balancer Creation
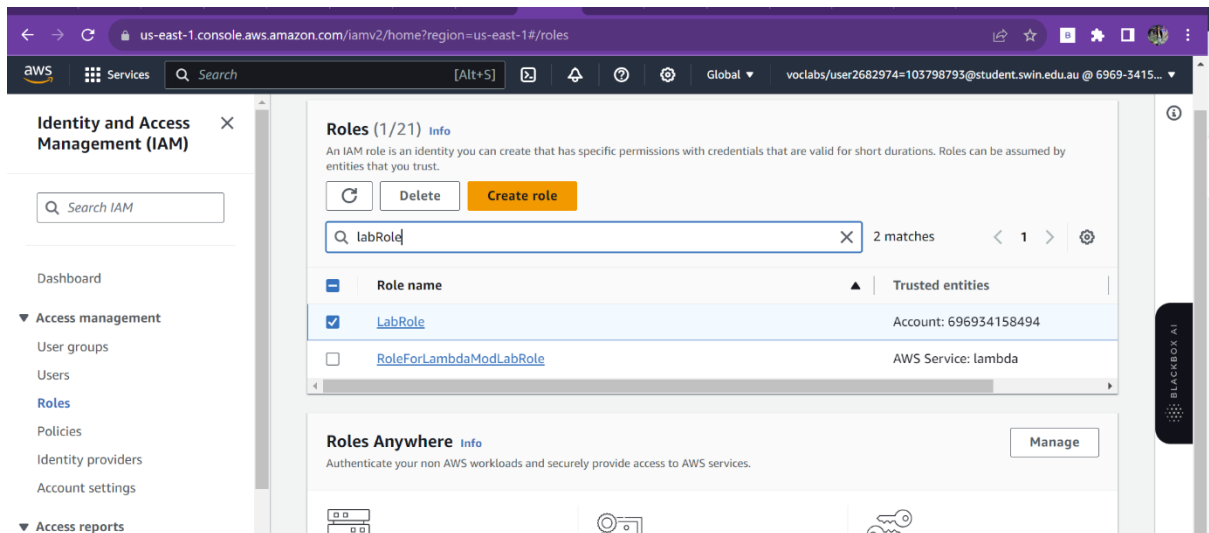
IAM Configuration

Figure 5 IAM Role Creation
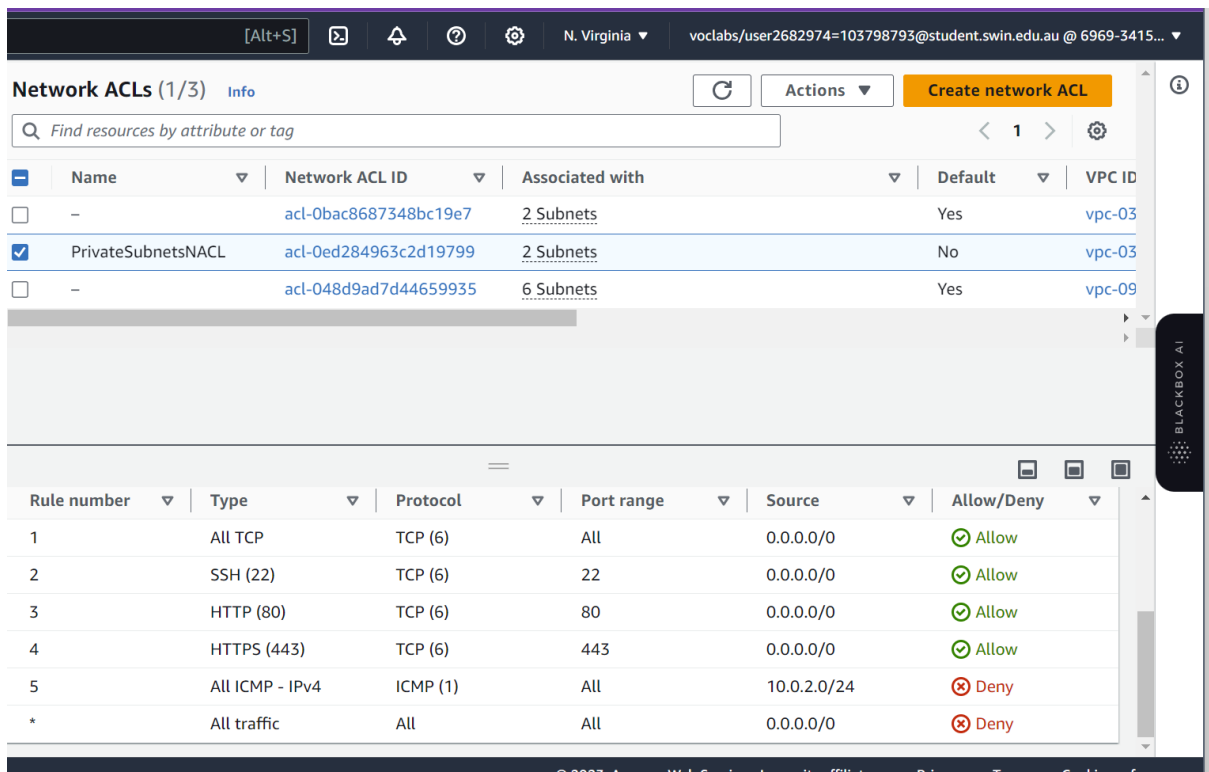
NACL Configuration

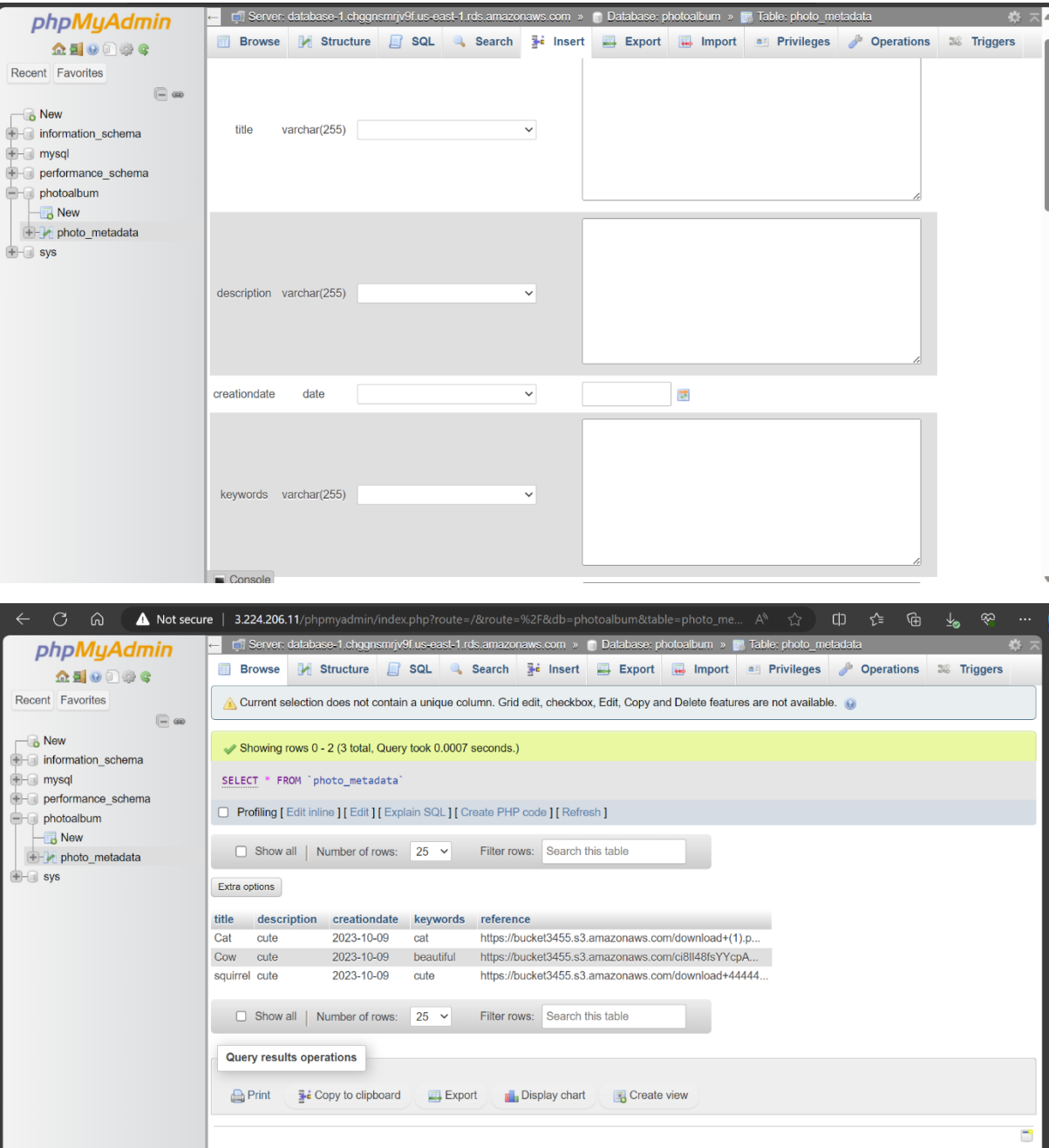Figure 6 NACL Creation

Database configuration

Figure 7 Database configuration
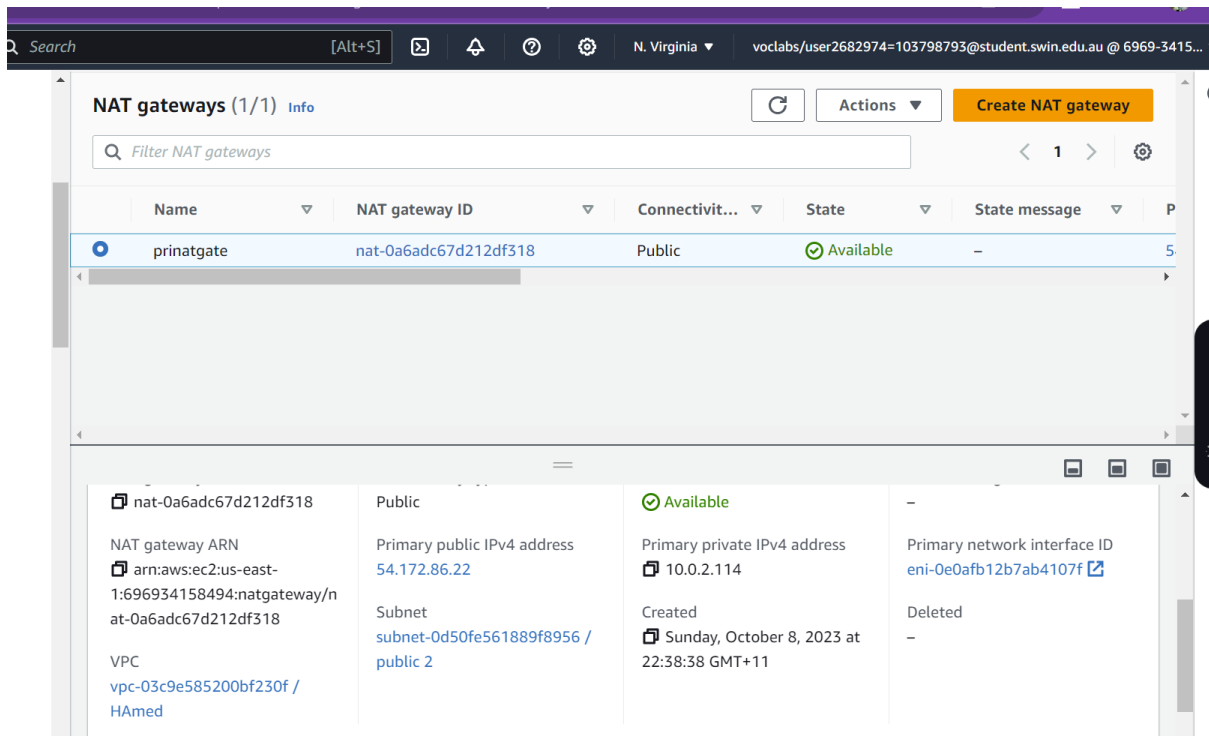
NAT Gateway Configuration

Figure 8 Creating the NAT Gateway
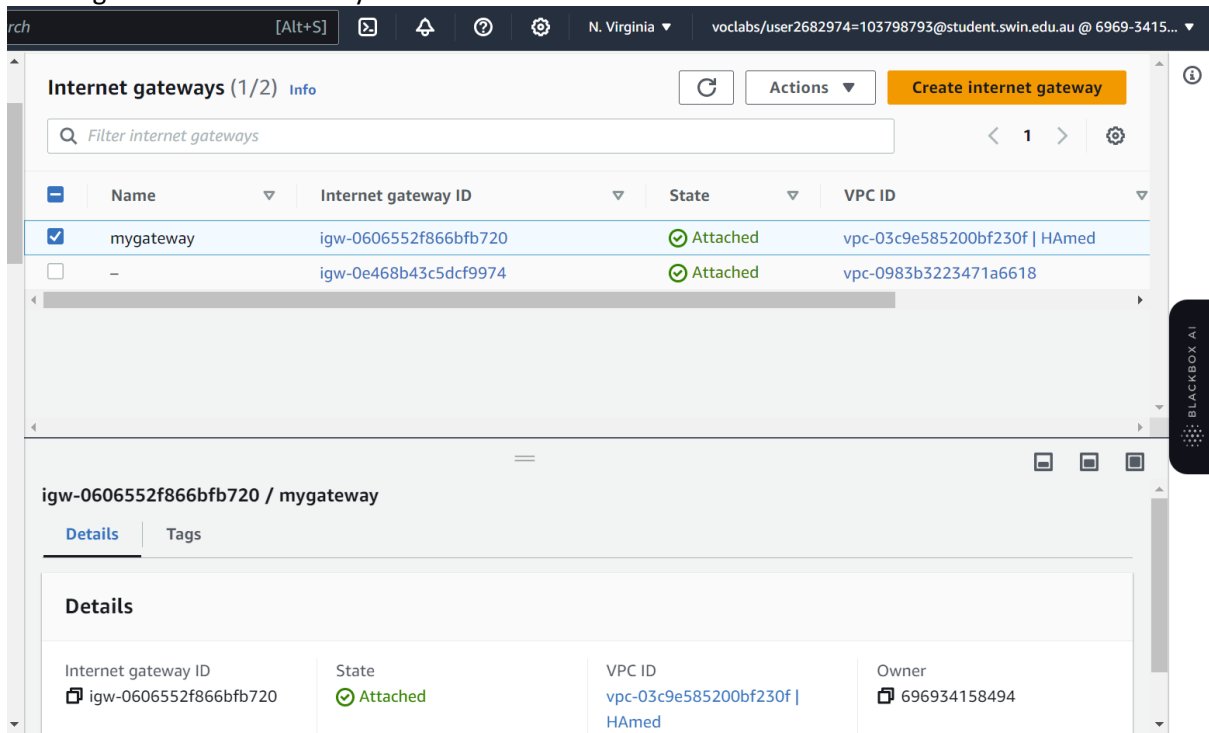
Creating the Internet Gateway

Figure 9 Creating the IGW
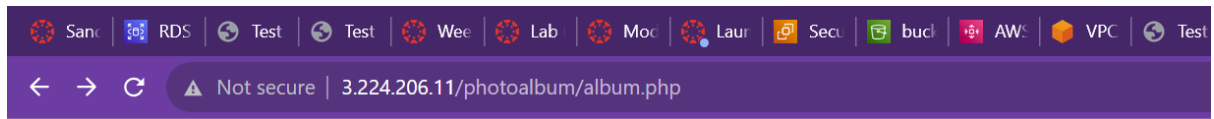
Functional Website

Student name: Hridoy Ahmed

Student ID: 103798793

Tutorial session: Fridoy 2:30 pm

Uploaded photos:

Upload more photos

Photo	Name	Description	Creation date	Keywords
	Cat	cute	2023-10-09	cat
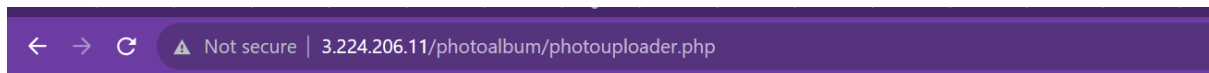
Photo uploader

Photo title: Cow

Select a photo (Select PNG file for best result): Choose File ci8ll48fsYYcpAdhFBSr.jpg

Description: cute

Date: 09/10/2023

Keywords (comma-delimited, e.g. keyword1, keyword2, ...): beautiful

Upload

Photo Album
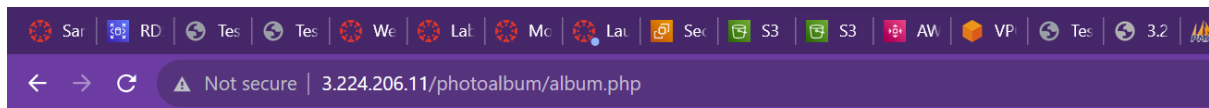
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Upload more photos

Photo	Name	Description	Creation date	Keywords
	Cat	cute	2023-10-09	cat
	Cow	cute	2023-10-09	beautiful

Figure 10 Functional Website

Eleatic Ip address configuration

Figure 10 Elastic Ip address

S3 Bucket and Bucket Policy

⚠ Off

▶ **Individual Block Public Access settings for this bucket**

Bucket policy

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. Learn more 🔗

| Edit | Delete |

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Principal": "*",
            "Action": "s3:GetObject",
            "Resource": "arn:aws:s3:::bucket3455/*"
        }
    ]
}
```

🗗 Copy

Figure 12 S3 bucket and Bucket Policy