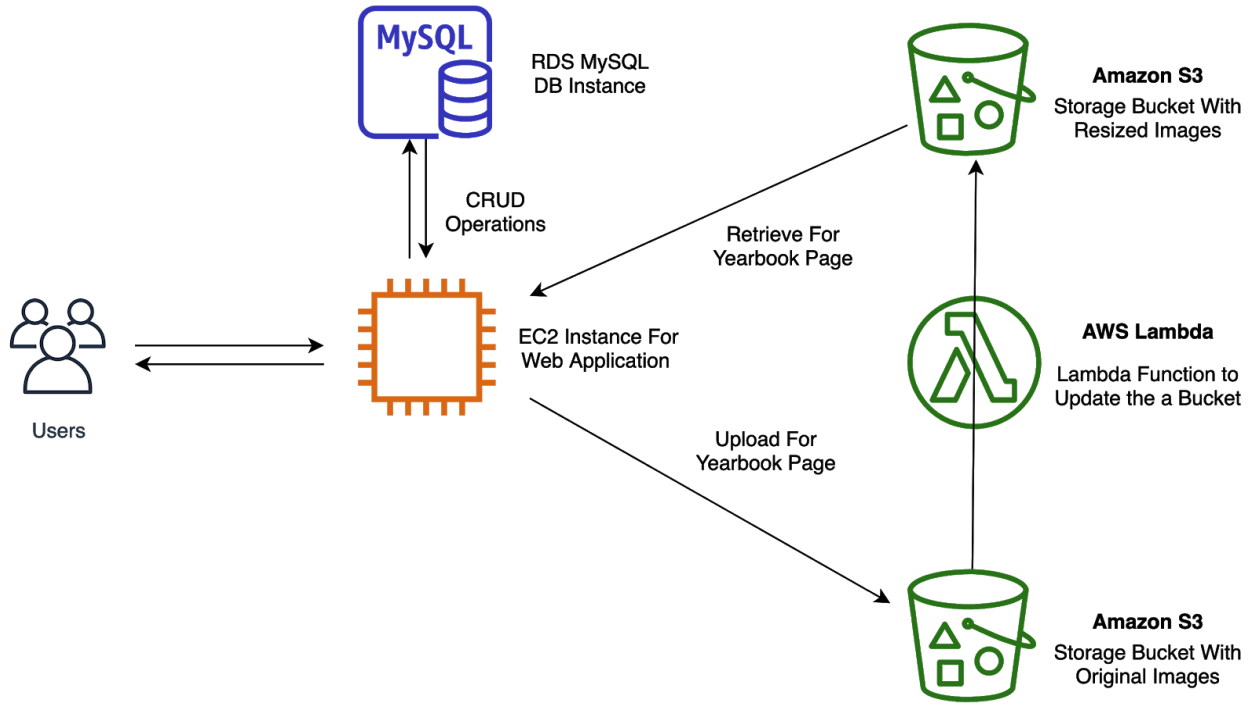
Jedra Peake 250830253

Final Case

SE4455: Cloud Computing

Architecture Diagram



Deployment Steps

1. Creating a MySQL database with RDS
    a. To begin, go to Amazon RDS in the AWS console. Click the orange Create database button to get started.
    b. Select the MySQL engine under **Engine options**
    c. Select the Production version In the **Templates section** of the creation wizard:
    d. Specify the authentication settings in the **settings section:**
        i. Enter a DB instance identifier (name)
        ii. Enter master username and strong password for the database
    e. DB instance Size
        i. Standard Classes
        ii. At minimum a large instance
    f. **Storage, Availability & Durability, VPC connectivity** can be left as default
    g. Additional Configuration

        i. Set initial database name to the same thing as the identifier
    h. Click the orange create database button
2. Creating an EC2 Instance
    a. Compute → EC2
    b. Click the orange launch instance button
    c. Choose an image
        i. **Amazon Linux AMI** is a good option, do not pick **Amazon Linux 2 AMI**
    d. Choose an instance type, minimum large again
    e. Configure a **security group**
        i. For the default ssh type set source to My Ip instead of custom.
        ii. Add a new rule
            1. Type → rule
        iii. Update security groups name and description if you required for better naming
        iv. Click the review and launch button
            1. Verify the settings
        v. Click launch
        vi. Create a new key pair and download it
3. Install PHP on EC2 web server
    a. Connect to Your Linux Instance
    b. install the Apache web server with the PHP software package using the **yum install** command
    c. Start the web server
        i. You can test that your web server is properly installed and started by entering the public DNS name of your EC2 instance in the address bar of a web browser
    d. Configure the web server to start with each system boot using the chkconfig command.
4. Connect Mysql DB to EC2 instance
    a. Click on the created database
    b. Under **Connectivity & security**
        i. Click on the group
        ii. Edit the inbound group to be the same as the security group on the ec2 instance
        iii. Change the Type property to MYSQL, which will update the Protocol and Port Range to the proper values.
        iv. rename the security group value to the one on the ec2 instance

        v. Hit the blue save button

5. Create a source bucket for the image upload
    a. Storage → S3
    b. Click the orange create bucket button
    c. Assign a bucket name based on lambda function code
    d. Click orange create bucket
6. Create a destination bucket for the resized images
    a. Storage → S3
    b. Click the orange create bucket button
    c. Assign a bucket name based on lambda function code
    d. Click orange create bucket
7. Prepare/Upload Lambda Function
    a. Connect to Your Linux Instance
    b. Install python on the ec2 machine
    c. Create a directory for the lambda function, and cd into it
    d. Create a virtual environment
    e. Activate the environment
    f. Update pip version if needed
    g. Install the needed libraries through pip
    h. Create a deployment package containing a zip archive containing the packages installed
    i. Upload a copy the python file from the local drive to the ec2 instance using scp
    j. Deactivate the environment
    k. Deploy the function on the environment
8. Link Lambda Function with Buckets
    a. Give the source S3 bucket the permission to invoke a lambda function
    b. Optional: Add notification configuration to the source bucket