Lab 7: Deploying a Web application on AWS

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1 Overview

- the web application will be hosted on EC2 instance using PHP
- Data stored in DynamoDB
- Image from S3

2 Create an IAM role

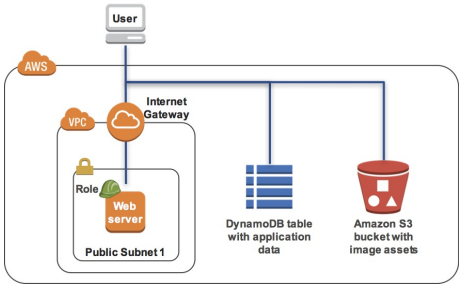
An IAM role is given permissions to call AWS services. In the IAM tab, we create the IAM role with the following settings:

- RoleName: WebServerRole
- Permissions: AmazonS3FullAcess, AmazonDynamoDBFullAccess

Then create Role. The web application will have permission to acess S3 and DynamoDB

3 Create an S3 bucket

It will be used to store image and static files. Create Bucket with name, webapp-



4 Create an Amazon Dynamo Table

- create a table, name: AWS-Services
- partition key: Category

The web application will laler copy data into the table

5 Create a VPC

Create a VPC with a single public subnet. An internet Gateway will be attached to the VPC, to access internet.
IPv4 CIDR block: 10.200.0.0/16 (the first 16 bits are blocked).

6 Create a subnet

Then we create a subnet attached to the VPC. The IPv4 CIDR block for the subnet: 10.200.10.0/24 (the first 24 bits are blocked). name of the subnet: Public subnet 1 for example.

7 Create an internet Gateway

name: lab gateway, and attached to the VPC

8 Create a public route table

Allows the subnet to communicate to internet via the Internet Gateway.

- create route table
- name: public route table
- VPC: the lab VPC
- destination: 0.0.0.0/0
- target: we associated the Internet Gateway, igwxxxx
- association: associated the public subnet 1 to the route table

9 Launch an ec2 instance

we choose an Amazon linux AMI. The configuration instance details is given in the table below:

Network	Lab VPC
1Subnet	Public Subnet 1
Auto assigned public IP	Enable
IAM role	WebServerRole

A script is used to:

- Install Apache Web Server and PHP language
- Download and unzip a file for the Web application
- Download and install aws SDK for PHP
- Copy the files starting with webapp– to the Bucket S3
- Copy data into the Dynamo RDB table
- Turn on the web browser

```
#!/bin/bash
# Install Apache Web Server and PHP
yum install -y httpd
amazon-linux-extras install -y php7.2
# Download Lab files
wget https://us-west-2-aws-staging.s3.amazonaws.com/awsu-ilt/AWS-100-ARC/v5.2/lab-1-webapp/scripts/lab1src.zip
unzip lab1src.zip -d /tmp/
mv /tmp/lab1src/*.php /var/www/html/
# Download and install the AWS SDK for PHP
wget https://github.com/aws/aws-sdk-php/releases/download/3.62.3/aws.zip
unzip aws -d /var/www/html
# Determine Region
AZ=‘curl --silent http://169.254.169.254/latest/meta-data/placement/availability-zone/‘
REGION=${AZ::-1}
# Copy files to Amazon S3 bucket with name webapp-*
BUCKET=‘aws s3api list-buckets --query "Buckets[?starts_with(Name, ’webapp-’)].Name | [0]" --output text‘
aws s3 cp /tmp/lab1src/jquery/ s3://$BUCKET/jquery/ --recursive --acl public-read --region $REGION
aws s3 cp /tmp/lab1src/images/ s3://$BUCKET/images/ --recursive --acl public-read --region $REGION
aws s3 ls s3://$BUCKET/ --region $REGION --recursive
# Configure Region and Bucket to use
sed -i "2s/%region%/$REGION/g" /var/www/html/*.php
sed -i "3s/%bucket%/$BUCKET/g" /var/www/html/*.php
# Copy data into DynamoDB table
aws dynamodb batch-write-item --request-items file:///tmp/lab1src/scripts/services1.json --region $REGION
aws dynamodb batch-write-item --request-items file:///tmp/lab1src/scripts/services2.json --region $REGION
aws dynamodb batch-write-item --request-items file:///tmp/lab1src/scripts/services3.json --region $REGION
# Turn on web server
chkconfig httpd on
service httpd start
```

10 Configure security group

The instance is a web server so all acess will be permitted via http port 80.