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**README File for Homework - 1**

# **Deploying a Web Application on AWS (S3 & EC2)**

## **Part 1: Deploying on AWS S3**

### **Prerequisites**

* An AWS S3 bucket.
* A web application (HTML, CSS, JavaScript files, etc.).

### **Step 1: Create an S3 Bucket**

1. Go to the AWS S3 console.
2. Click Create bucket.
3. Enter a unique bucket name.
4. Click Create.

### **Step 2: Configure Public Access**

1. Navigate to Permissions.
2. Disable Block all public access.
3. Save changes.

### **Step 3: Set Bucket Policy**

1. Navigate to Permissions > Bucket Policy.
2. Add the following policy:

{

"Version": "2012-10-17",

"Statement": [

{

"Effect": "Allow",

"Principal": "\*",

"Action": "s3:GetObject",

"Resource": "arn:aws:s3:::myswe645-1/\*"

}

]

}

1. Save changes.

### **Step 4: Enable Static Website Hosting**

1. Go to the Properties tab.
2. Scroll down to Static Website Hosting.
3. Change the setting from Disable to Enable.

### **Step 5: Upload Files to S3**

1. Navigate to Objects.
2. Click Upload and add the required files.
3. Click Upload to finalize.

### **Step 6: Access the Web Application**

Open the following URL in a browser:

<http://myswe645-1.s3-website-us-east-1.amazonaws.com/HW_1/index.html>

[http://myswe645-1.s3-website-us-east-1.amazonaws.com/HW\_1/error.html](http://myswe645-1.s3-website-us-east-1.amazonaws.com/HW_1/index.html)

## **Part 2: Deploying on AWS EC2**

### **Prerequisites**

* An AWS EC2 instance running Amazon Linux 2023.
* SSH key pair for secure access.
* A web application (HTML, CSS, JavaScript files, etc.).
* Apache installed on the EC2 instance.

### **Step 1: Launch an EC2 Instance**

1. Open the AWS EC2 console.
2. Click Launch instance.
3. Provide a name for the instance.
4. Select Amazon Linux.
5. Choose an AMI.
6. Select t2.micro instance type.
7. Create a new key pair (Portfolio-AWS.pem).
8. Click Launch Instance.

### **Step 2: Transfer Files to the EC2 Instance**

Use scp to copy the files from your local machine to the EC2 instance:

scp -i "path/to/your-key.pem" "path/to/your-project.zip" ec2-user@your-ec2-public-ip:/home/ec2-user/

Example:

**scp -i "R:\4TH\_SEM\SWE\_645\HW\_1\Portfolio-AWS.pem" "R:\4TH\_SEM\SWE\_645\HW\_1.zip" ec2-user@ec2-44-204-235-229.compute-1.amazonaws.com:/home/ec2-user/**

### **Step 3: Connect to the EC2 Instance**

SSH into the instance:

ssh -i "path/to/your-key.pem" ec2-user@your-ec2-public-ip

Example:

**ssh -i "R:\4TH\_SEM\SWE\_645\HW\_1\Portfolio-AWS.pem" ec2-user@ec2-44-204-235-229.compute-1.amazonaws.com**

### **Step 4: Enter into root**

sudo su -

### **Step 5: Update System Packages**

sudo yum update -y

### **Step 6: Install Apache Web Server**

sudo yum install httpd -y

### **Step 7: Start and Enable Apache Service**

sudo systemctl enable httpd

sudo systemctl start httpd

### **Step 8: Install Unzip Utility**

sudo yum install unzip -y

### **Step 9: Unzip the Project Files**

unzip /home/ec2-user/HW\_1.zip -d /home/ec2-user/HW\_1

Verify the extracted files:

ls -l /home/ec2-user/HW\_1

### **Step 10: Copy Files to Apache Root Directory**

sudo cp -r /home/ec2-user/HW\_1/HW\_1 /var/www/html/

Verify files in /var/www/html/:

cd /var/www/html/

ls -l

### **Step 11: Restart Apache**

sudo systemctl restart httpd

### **Step 12: Access the Web Application**

Open the following URL in a browser:

http://your-ec2-public-ip/HW\_1/index.html

Example:

[**http://ec2-44-204-235-229.compute-1.amazonaws.com/HW\_1/index.html**](http://ec2-44-204-235-229.compute-1.amazonaws.com/HW_1/index.html)

[**http://ec2-44-204-235-229.compute-1.amazonaws.com/HW\_1/error.html**](http://ec2-44-204-235-229.compute-1.amazonaws.com/HW_1/error.html)

[**http://ec2-44-204-235-229.compute-1.amazonaws.com/HW\_1/Student\_Survey.html**](http://ec2-44-204-235-229.compute-1.amazonaws.com/HW_1/Student_Survey.html)

### **Troubleshooting**

If the webpage does not load, check Apache's status:  
 sudo systemctl status httpd

* Ensure the security group associated with the EC2 instance allows inbound traffic on port 80 (HTTP).

Verify file permissions:  
 sudo chmod -R 755 /var/www/html/HW\_1

## **Conclusion**

You have successfully deployed a web application on AWS using both S3 (for static hosting) and EC2 (for a dynamic server environment). Ensure that your security rules allow public access, and always follow best security practices when handling sensitive files like .pem keys.