### **Lab Guide: Creating and Connecting to a Windows EC2 Instance on AWS**

### **Objective**

This lab provides step-by-step instructions for creating a Windows EC2 instance and securely connecting to it using PuTTY. By the end of this lab, you will have a working Windows virtual machine on AWS.

### **Prerequisites**

1. **AWS Account**: Ensure you have an active AWS account.
2. **PuTTY and PuTTYgen**: Download and install [PuTTY](https://www.putty.org/) and PuTTYgen.
3. **Key Pair**: A .pem file is required to securely connect to your instance.

### **Step 1: Log In to the AWS Management Console**

1. Navigate to the [AWS Console](https://aws.amazon.com/console/).
2. Enter your AWS credentials and log in.

**Summary:** Accessed AWS console and logged into it successfully using my credetials.

### **Step 2: Launch an EC2 Instance**

1. Go to the **EC2 Dashboard**:
   * In the search bar, type **EC2** and click on the EC2 service.
   * Click **Launch Instance**.
2. **Choose an Amazon Machine Image (AMI)**:
   * Under the "Quick Start" section, select **Microsoft Windows Server 2022 Base** (Free Tier Eligible).
3. **Select Instance Type**:
   * Choose **t2.micro** (Free Tier Eligible) and click **Next: Configure Instance Details**.
4. **Configure Instance Details**:
   * Leave the default settings for network (VPC), subnet, and public IP.
   * Click **Next: Add Storage**.
5. **Add Storage**:
   * Use the default storage size (30 GiB, Free Tier Eligible) and type **General Purpose SSD (gp2)**.
   * Click **Next: Add Tags**.
6. **Add Tags**:
   * Add a name tag to identify the instance:
     + **Key**: Name
     + **Value**: MyWindowsInstance
   * Click **Next: Configure Security Group**.
7. **Configure Security Group**:
   * Select **Create a new security group**.
   * Add the following rule:
     + **Type**: RDP
     + **Protocol**: TCP
     + **Port Range**: 3389
     + **Source**: My IP (restricts access to your current IP).
   * Click **Review and Launch**.
8. **Review and Launch**:
   * Review the configuration and click **Launch**.
   * When prompted to select a key pair:
     + Choose **Create a new key pair**.
     + Provide a name (e.g., MyWindowsKeyPair) and download the .pem file.

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**Summary:**

Navigated to EC2 dashboard.

Selected “Launch Instance” to create a new virtual machine.

Most of the steps here are like Lab 2a.

Microsoft Windows Server 2022 base is selected as Amazon Machine Image, where t2.micro is the instance type. Instance details are further configured while keeping all the default settings for network, subnet, and public IP. Storage remained default as 30 GiB General purpose SSD (gp2) storage.

A tag with a key is added. Key: Name, Value: MyWindowsInstance. A new security group is created where RDP access is restricted to My IP for security purposes. Instance is then launched.

A new key pair is generated and then .pem file is downloaded for authentication.

### **Step 3: Find the Public IP Address of Your Windows Instance**

1. In the **EC2 Dashboard**, select your running Windows instance.
2. Locate the **Public IPv4 Address** under instance details.

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**Summary:** Public Ipv4 is noted as it is used for remote access.

### **Step 4: Use Remote Desktop Connection (RDP) to Connect**

### **For Windows Users:**

1. Open **Remote Desktop Connection**:
   * Press Win + R, type mstsc, and hit **Enter**.
2. In the **Computer** field, enter the **Public IPv4 Address** from Step 3.

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1. Click **Connect**.
2. When prompted for credentials:
   * **Username**: Administrator
   * **Password**: Paste the password retrieved from AWS.
3. A screenshot of a computer login

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4. Click **OK**.
5. Accept the security warning and proceed.

### **For macOS Users:**

1. Download and install **Microsoft Remote Desktop** from the Mac App Store.
2. Open the app and click **Add PC**.
3. In the **PC Name** field, enter the **Public IPv4 Address**.
4. Under **User Account**, select **Add User Account**:
   * **Username**: Administrator
   * **Password**: Paste the password retrieved from AWS.
5. Click **Save**, then double-click on the instance to connect.
6. Accept the security warning and proceed.

**Summary:** All the steps mentioned above for Windows are followed to use a remote desktop connection. Credentials are required to connect. Administrator credentials are used and the password is retrieved and decrypted from AWS.

### **Step 5: Verify Connection**

If everything is configured correctly, you should now see the Windows desktop of the AWS instance.

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**Summary:** TheWindows desktop of AWS is successfully accessed.

### **Step 6: Clean Up (Optional)**

1. When finished, **log out** of the Windows instance.
2. Go back to the **AWS EC2 Dashboard** and **stop** or **terminate** the instance if not needed.

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**Summary:** Instance is stopped/terminated to avoid charges.

## **Troubleshooting**

### **Issue: Connection Refused or Timeout**

* Ensure the **Windows instance is running** in AWS.
* Confirm **Security Group** allows **RDP (Port 3389)** from your IP.
* Verify that your **Public IPv4 Address** is correctly entered in the RDP client.

### **Issue: Incorrect Password**

* Make sure you retrieved the password **after** the instance launched.
* Re-download and **decrypt** the password using the .pem file.

### **Deliverables**

1. **Screenshots**:
   * AWS EC2 instance running.
   * Public IP and RDP connection details.
   * Successful login to the Windows instance.
2. **Summary Report**:
   * Explain each step performed.
   * Mention any issues faced and how they were resolved.