Steps to Connect to an AWS EC2 Instance Using SSH

Secure Shell (SSH) is the primary method for securely connecting to an AWS EC2 instance. Follow these steps to establish a connection:

---

1 Launch an EC2 Instance

- Log in to the **AWS Management Console**.
- Navigate to **EC2 Dashboard → Instances → Launch Instance**.
- Choose an **Amazon Machine Image (AMI)** (e.g., Ubuntu, Amazon Linux).
- Select an **Instance Type** (e.g., t2.micro for free tier).
- Configure instance settings and **assign a key pair** (or create a new one).
- **Launch the instance** and note the **public IP address** or **DNS name**.

---

2 Set Up Security Group Rules

- Go to **EC2 Dashboard → Security Groups**.
- Edit **Inbound Rules** to allow **SSH traffic**:
  - Protocol: **TCP**
  - Port: **22**
  - Source: **Your IP (`My IP`)** or **Anywhere (`0.0.0.0/0`)** (less secure).
- Save the rules.

---

3 Connect to the EC2 Instance via SSH

Using Linux/macOS Terminal

1. Open a terminal.
2. Navigate to the directory where your **.pem key file** is stored.
3. Modify key permissions (if not already done):

```
bash
CopyEdit
```

```
chmod 400 my-key.pem
```

4. Connect using SSH:

```
bash
CopyEdit
ssh -i my-key.pem ec2-user@public-ip-address
```

   - For Ubuntu instances, replace `ec2-user` with `ubuntu`:

```
bash
CopyEdit
ssh -i my-key.pem ubuntu@public-ip-address
```

Using Windows (PuTTY)

1. Convert **.pem key** to **.ppk** using PuTTYgen.
2. Open **PuTTY** and enter the **Public IP** in **Host Name**.
3. Under **Connection → SSH → Auth**, browse and select the **.ppk key file**.
4. Click **Open** to establish the connection.

---

4 Verify Connection & Start Using the Instance

- Once connected, you can run commands on the instance.
- To check the system:

```
bash
CopyEdit
uname -a
```

- Update the instance:

```
bash
CopyEdit
sudo apt update && sudo apt upgrade -y  # Ubuntu/Debian
sudo yum update -y  # Amazon Linux/CentOS
```

---

5 (Optional) Connect Using SSH Config File

To simplify future connections, add an entry to your SSH config file (`~/.ssh/config`):

```
bash
CopyEdit
Host my-ec2
  HostName public-ip-address
```

```
  User ubuntu
  IdentityFile ~/path-to/my-key.pem
```

Now, connect with:

```
bash
CopyEdit
ssh my-ec2
```

Conclusion

By following these steps, you can securely connect to your AWS EC2 instance via SSH and manage it efficiently. Always ensure **proper security measures** by restricting SSH access and using strong authentication methods.