How To Launch an EC2 Instance on AWS.

Step 1: Log in to AWS Management Console

1. Go to the AWS Management Console.
2. Log in with your credentials.

Step 2: Navigate to EC2 Service

1. In the AWS Management Console, search for **EC2** in the search bar and click on it.
2. This will take you to the EC2 Dashboard.

Step 3 : Launch an Instance

1. On the EC2 Dashboard, click **Launch Instance**.
2. You'll be directed to the "Launch an Instance" wizard.

Step 4 : Configure Instance Details

1. **Name and Tags** :
   - Give your instance a name by entering a value in the "Name" field.
   - Optionally, add tags to categorize your instance.
2. **Select AMI (Amazon Machine Image)**:
   - Choose an operating system (e.g., Amazon Linux, Ubuntu, Windows Server).
   - Free-tier users can select the Amazon Linux 2 AMI (Free Tier Eligible).
3. **Choose Instance Type** :
   - Select an instance type based on your use case (e.g., t2.micro for free-tier eligibility).
   - Click **Next** to proceed.

Step 5 : Configure Key Pair

1. If you don't have a key pair:
   - Click **Create new key pair**.
   - Enter a name and select the format (PEM for Linux, PPK for Windows).
   - Download the key pair and keep it secure (it's used to connect to the instance).
2. If you already have a key pair:
   - Select it from the dropdown.

Step 6 : Configure Network Settings

1. **VPC and Subnet** :
   - Choose a VPC (default is available) and a subnet.
2. **Auto-assign Public IP** :
   - Ensure it's enabled if you want the instance to be accessible over the internet.
3. **Security Groups** :
   - Create a new security group or use an existing one.
   - Add rules for necessary access, e.g., SSH (port 22) for Linux or RDP (port 3389) for Windows.

Step 7 : Add Storage

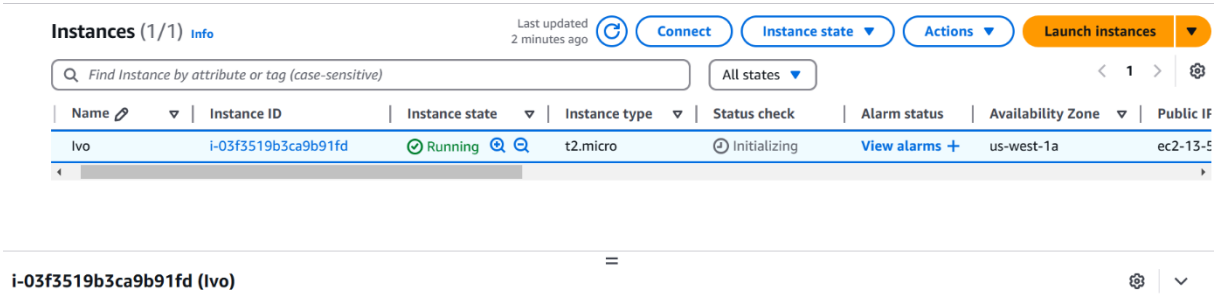
1. Configure the instance's storage.
   - Default storage is often sufficient for basic use.
   - Add additional volumes if needed.
2. Ensure you stay within free-tier limits if applicable.

Step 8 : Review and Launch

1. Review all the details you configured.
2. Click **Launch Instance**.

Step 9 : Monitor Instance Launch

1. After clicking "Launch Instance," you'll be redirected to a page showing the instance ID and status.
2. Wait for the instance state to change to **Running**.



How To Attach Security Group to My Instance.

Step 1: Identify your Public IP

1. Visit a site like WhatIsMyIP or search "What is my IP" in a browser.
2. Note down your public IP address (e.g., 203.0.113.25).

Step 2: Log in to AWS Management Console

1. Go to the AWS Management Console.
2. Navigate to the **EC2 Dashboard** by searching for "EC2" in the search bar.

Step 3: Locate the Security Group

1. On the EC2 Dashboard, find the **Security Groups** option under the **Network & Security** section in the left-hand menu.
2. Click on **Security Groups**.

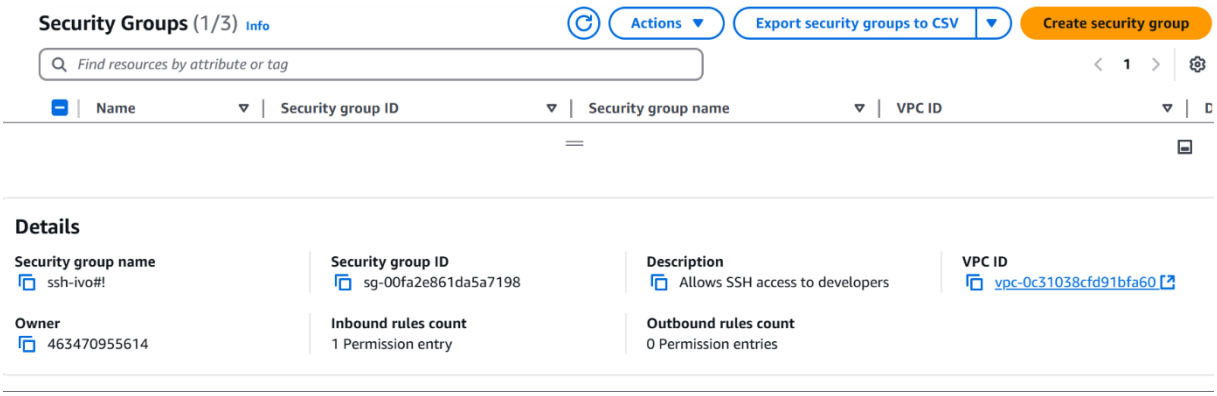
Step 4: Create or Edit a Security Group

1. **To Create a New Security Group**:
   - Click **Create Security Group**.
   - Provide a name and description for the security group.
   - Ensure it is associated with the correct VPC.
2. **To Edit an Existing Security Group**:
   - Select the security group you want to modify and click on **Edit Inbound Rules**.

Step 5 : Configure Inbound Rules

1. Add a new rule with the following details:
   - **Type** : SSH
   - **Protocol**: TCP (auto-filled for SSH)
   - **Port Range** : 22
   - **Source** : Select **My IP**.

     AWS will automatically detect your current public IP and append /32 to allow access only from your machine (e.g., 203.0.113.25/32).



Purpose of a Keypair.

A key pair in AWS is used to enable secure access to Amazon EC2 instances. It serves as the authentication mechanism for logging in to your instance, especially for Linux-based EC2 instances using **SSH** (Secure Shell).

Key Pair Components

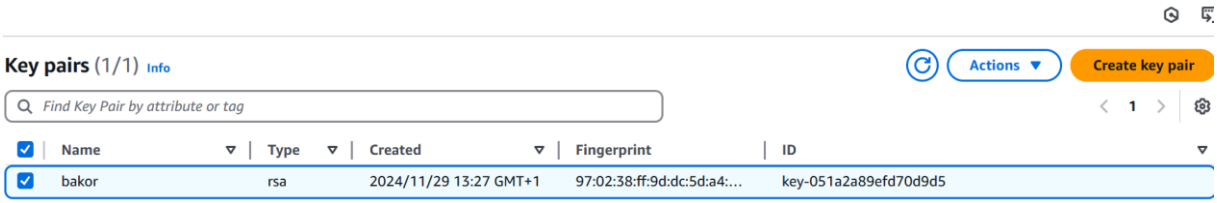
A key pair consists of:

 Public **Key** :

- Stored by AWS and associated with the EC2 instance during creation.
- Embedded into the instance's **authorized keys** file (for Linux/UNIX instances) during launch.
- Cannot be downloaded; AWS manages it internally.

 Private **Key** :

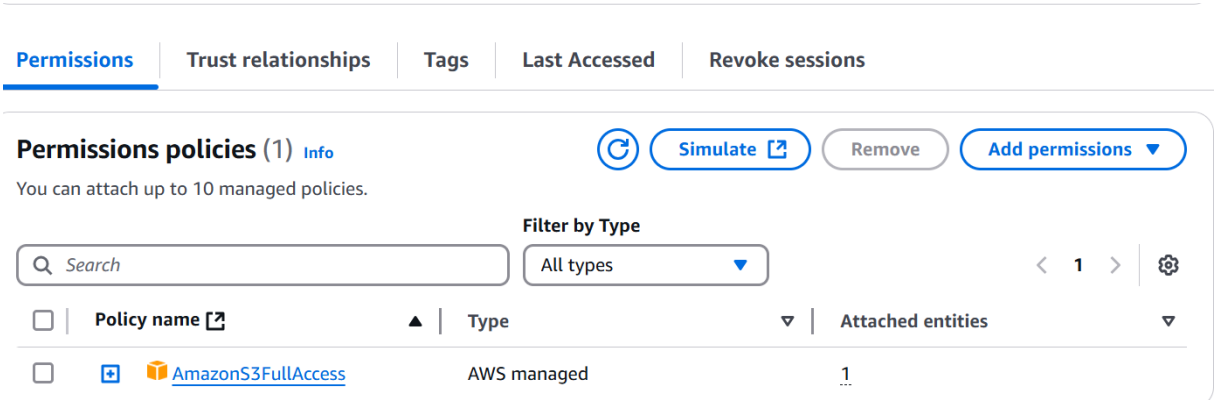
- Generated by AWS or your own system (if you create and import a key pair).
- Must be securely stored by the user, as AWS does not retain it.
- Used by the client (e.g., your local machine) to establish an SSH connection to the instance.



How To Create and Modify the IAM Role.

Step 1 : Create an IAM Role

1. **Navigate to the IAM Console**:
   - Go to the IAM Dashboard.
2. **Create a New Role** :
   - Click on **Roles** in the left-hand menu, then click **Create Role**.
3. **Select Trusted Entity** :
   - Choose **AWS Service** and select **EC2** as the trusted entity type.
4. **Attach Policies to the Role**:
   - Select the managed policies that provide the necessary permissions (e.g., AmazonS3ReadOnlyAccess or custom permissions). You can skip this step if you plan to attach inline policies later.
5. **Name the Role** :
   - Give the role a descriptive name (e.g., EC2S3AccessRole) and complete the creation process.



How to create an Inline policy and attach to a role.

Step 1: Create the Role (if not already created)

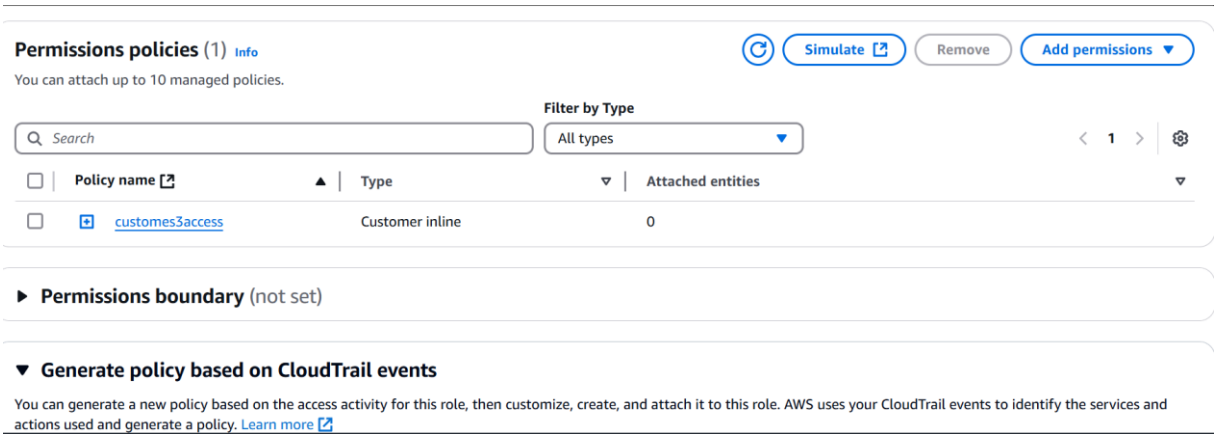
1. **Log in to AWS Console**.
2. Go to the IAM Dashboard.
3. Select **Roles** from the left-hand menu.
4. Click **Create Role** and choose a **trusted entity** (e.g., EC2, Lambda).
5. Add any required **AWS Managed Policies** during this step (optional).
6. Name the role and complete the process.

Step 2: Create and Attach an Inline Policy

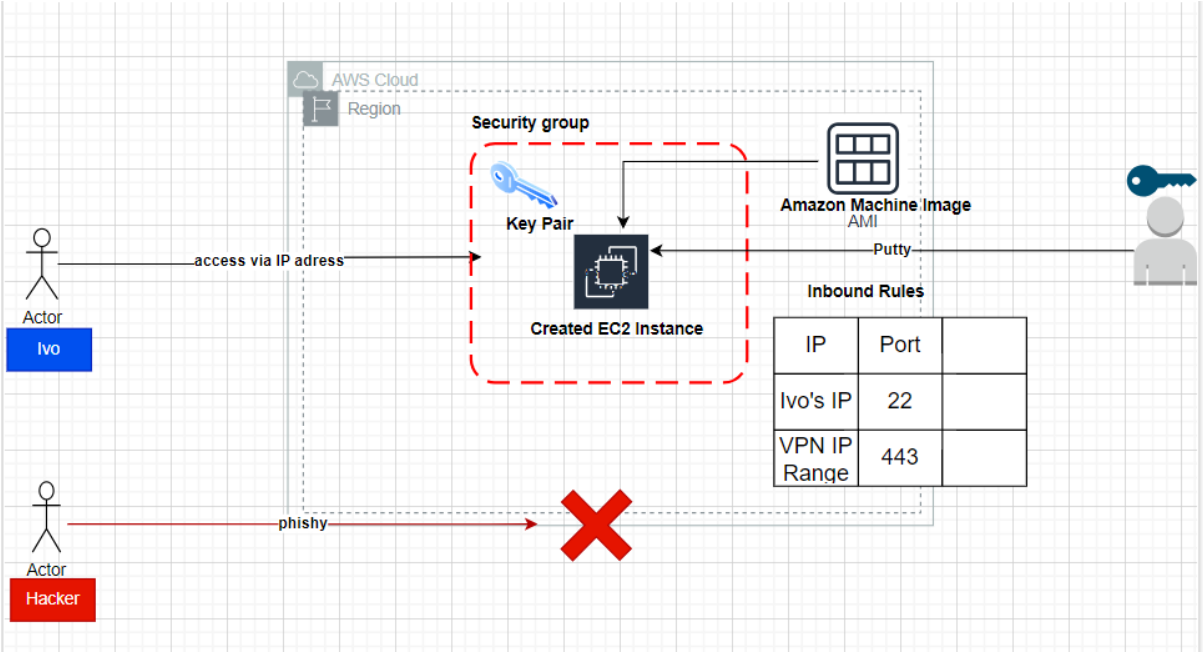
1. **Locate the Role** :
   - In the IAM Dashboard, click **Roles**.
   - Find and select the role to which you want to attach the inline policy.
2. **Attach Inline Policy** :
   - Scroll down to the **Permissions** tab and click **Add permissions** > **Create inline policy**.
3. **Define the Policy** :
   - Use either the **Visual Editor** or the **JSON Editor** to define the policy.
     - Example JSON for S3 Read-Write access to a specific bucket:

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": [
                "s3:PutObject",
                "s3:GetObject"
            ],
            "Resource": "arn:aws:s3:::example-bucket/*"
        }
    ]
}
```

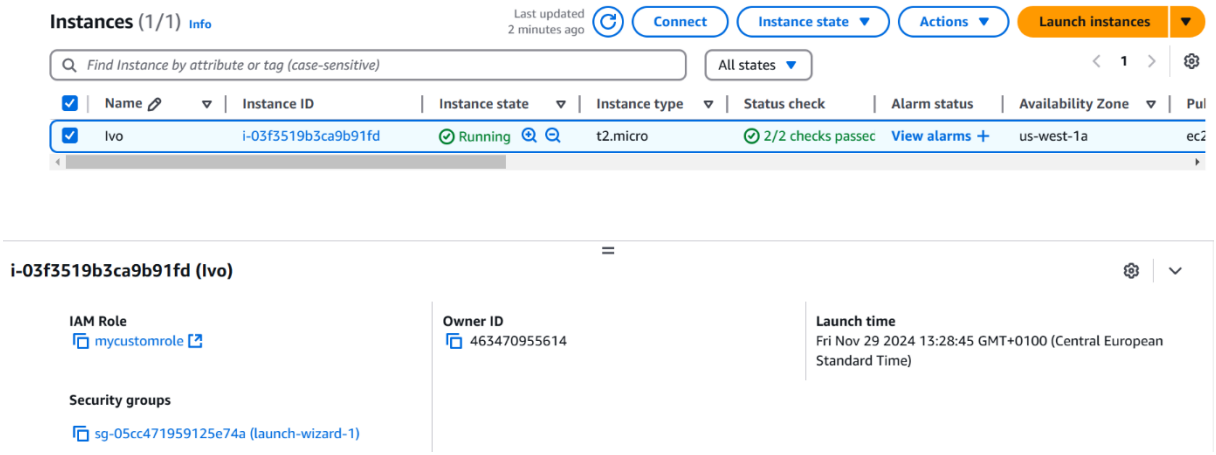
4. **Review and Attach** :
   - Click **Review Policy**, name the policy (e.g., `S3InlinePolicy`), and save it.



AWS Illustration.



Final Work.


Instances (1/1) Info
Last updated
2 minutes ago
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
1
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Pul
Ivo
i-03f3519b3ca9b91fd
Running
t2.micro
2/2 checks passec
View alarms +
us-west-1a
ec2
i-03f3519b3ca9b91fd (Ivo)
IAM Role
mycustomrole
Owner ID
463470955614
Launch time
Fri Nov 29 2024 13:28:45 GMT+0100 (Central European Standard Time)
Security groups
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