# Step-by-Step Guide: Creating an EC2 Instance in AWS


- **What is EC2?**

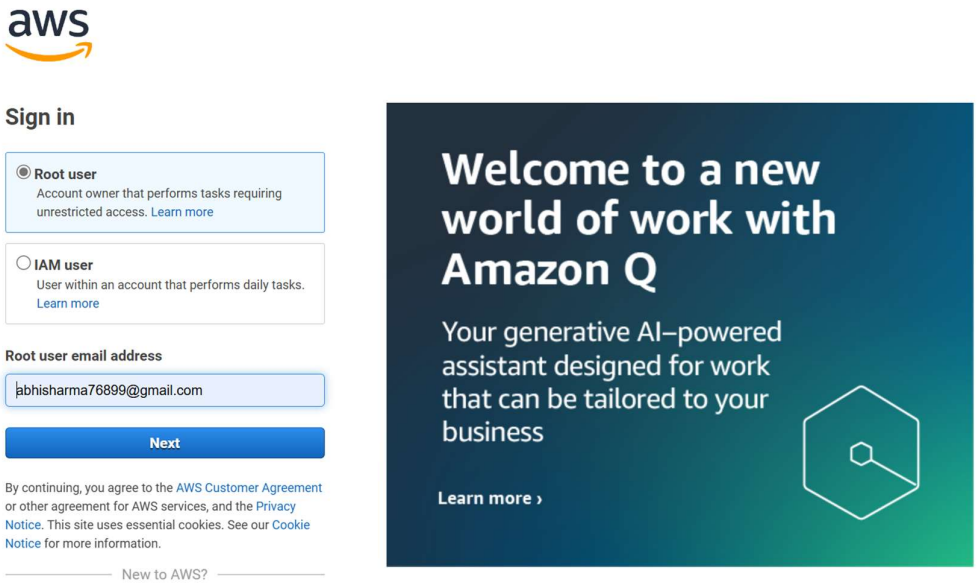
  Amazon Elastic Compute Cloud (EC2) is a web service provided by Amazon Web Services (AWS) that allows users to rent virtual servers (referred to as "instances") on which they can run their applications. EC2 instances are essentially virtual machines that can be launched in the cloud and scaled up or down as needed. EC2 provides a wide range of instance types to choose from, allowing users to select the instance size and configuration that best fits their needs.

- **Why do we need an EC2 instance?**

  One of the main reasons we need EC2 instances is because they offer scalability and flexibility. We can launch EC2 instances on demand and scale up or down as needed to match our workload requirements. This means we can easily provision resources when we need them and only pay for what we use.

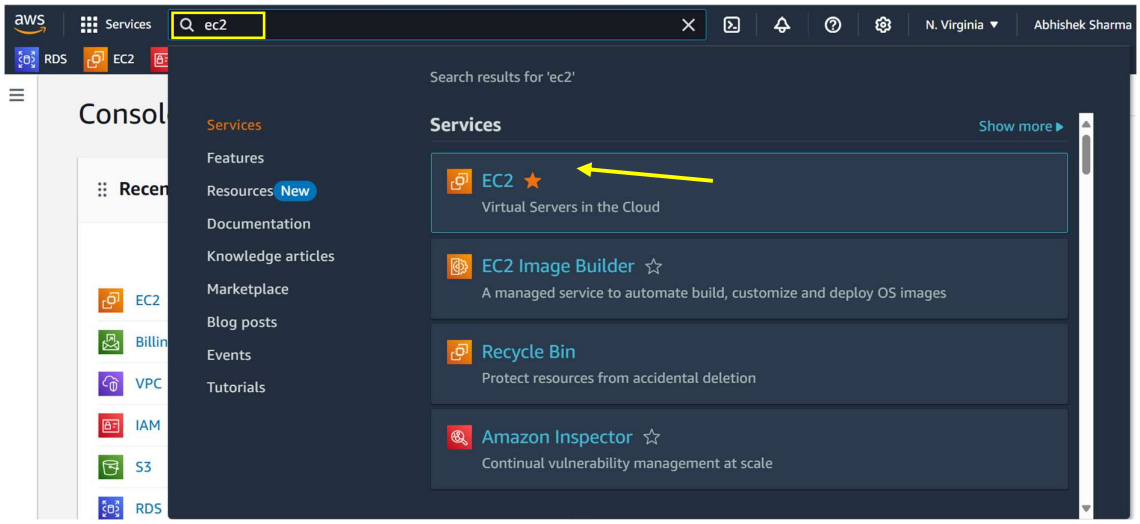
## Step 1: Log in to the AWS Management Console

- Log in using your **AWS** account credentials.



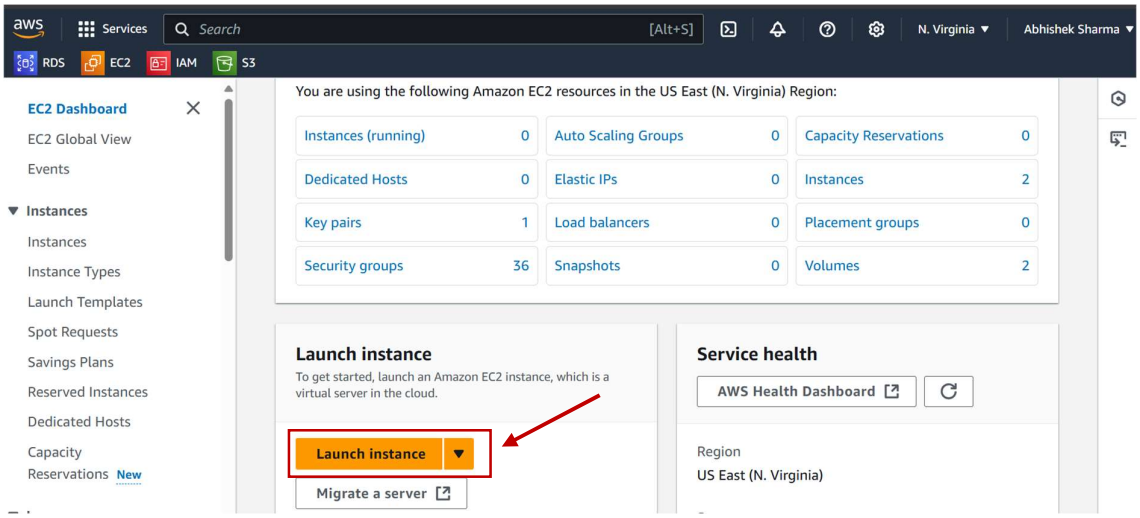

## Step 2: Navigate to EC2 Dashboard

- Search for **EC2** service on the search bar and **Click** on **EC2**

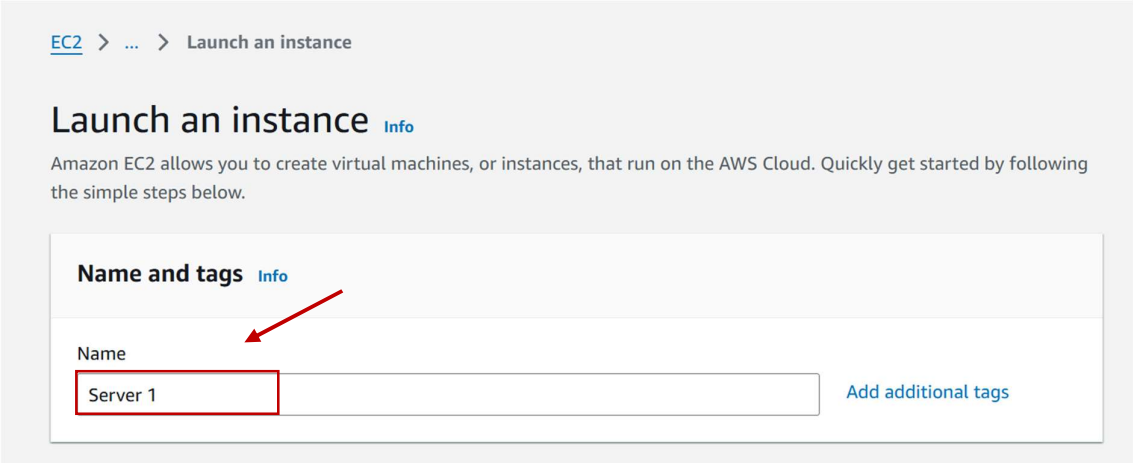


## Step 3: Launch an Instance

- Click on **Launch Instance**.

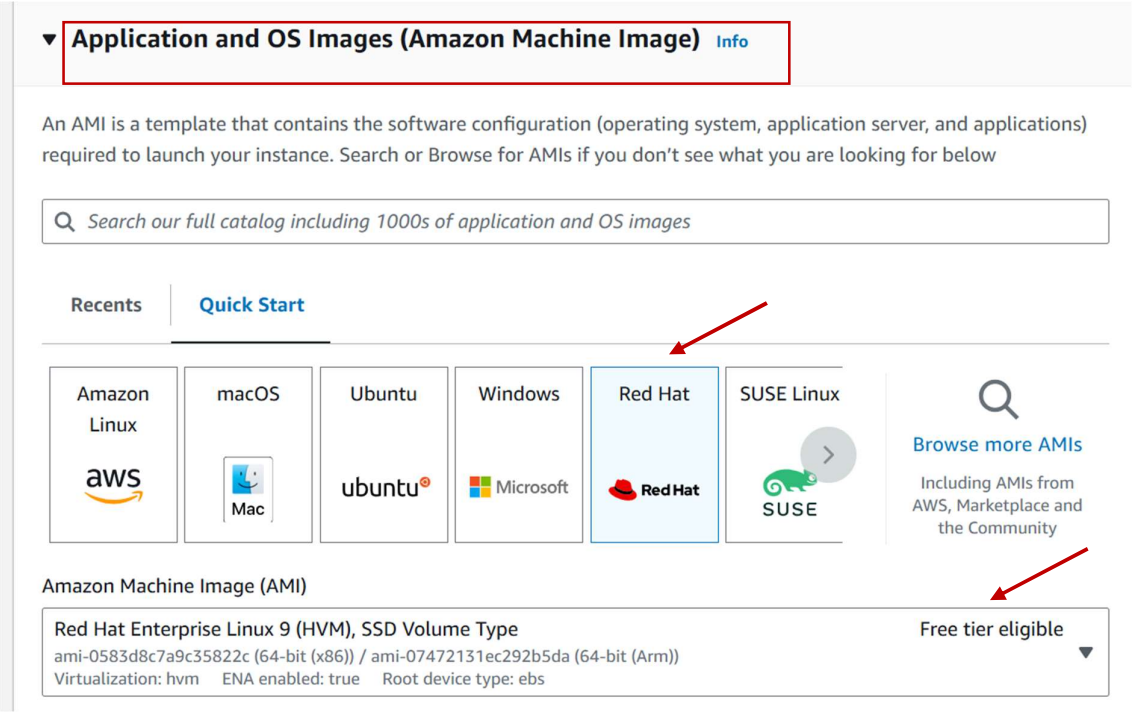



- Enter a name for your instance under **Name and Tags.**



**Step 4: Choose an Amazon Machine Image (AMI)**

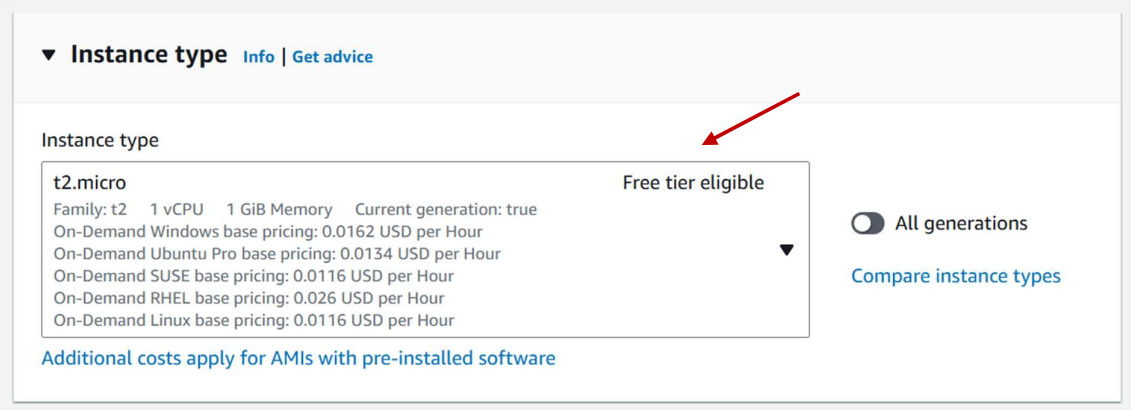
- An **Amazon Machine Image (AMI)** is a preconfigured template for your instance, which includes an operating system and other required configurations.
- Choose from **Amazon Linux 2, Ubuntu, Red Hat, Microsoft Windows Server**, if you want other then **Browse more AMIs**.
- Click **Select** on your chosen **AMI**.




**Step 5: Choose an Instance Type**

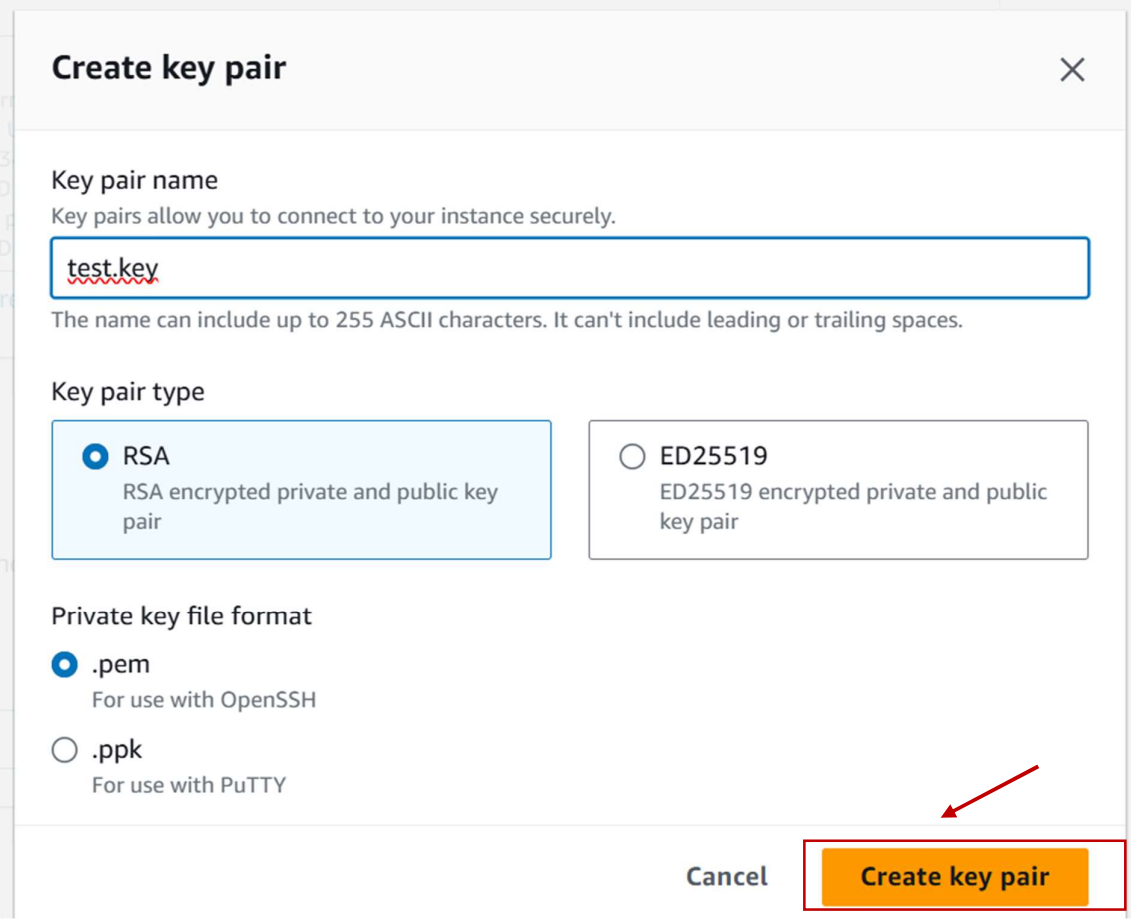
- An instance type determines the computing resources **(CPU, RAM, storage, etc.)** available to your **EC2 instance**. There are a variety of **instance types** to choose from, ranging from **small** and **low-cost to large** and **high-performance**. Select the instance type that best fits your needs and budget.

- By default, the instance type is **"t2.micro"** which is a free tier-eligible service.



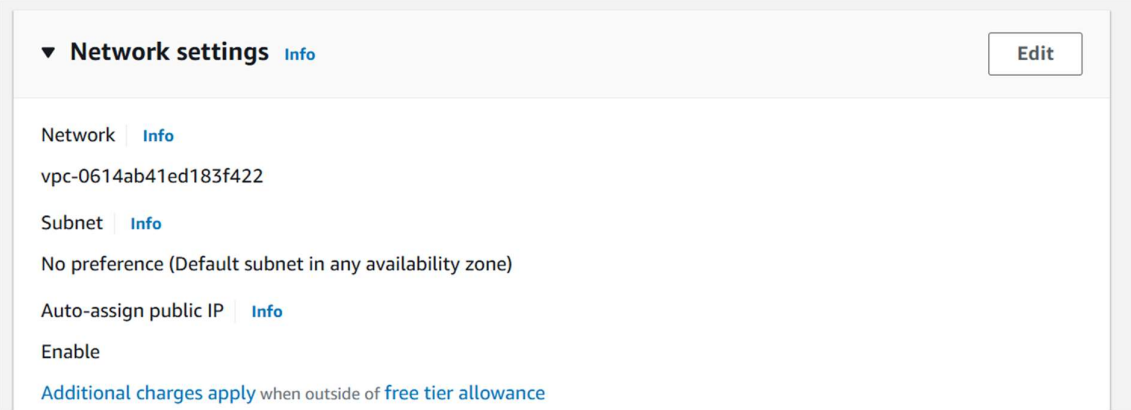

**Step 6: Create a key pair**

- Create a **key pair** and **store** it in a safe place because it will act as a key to **log in** to your instance.



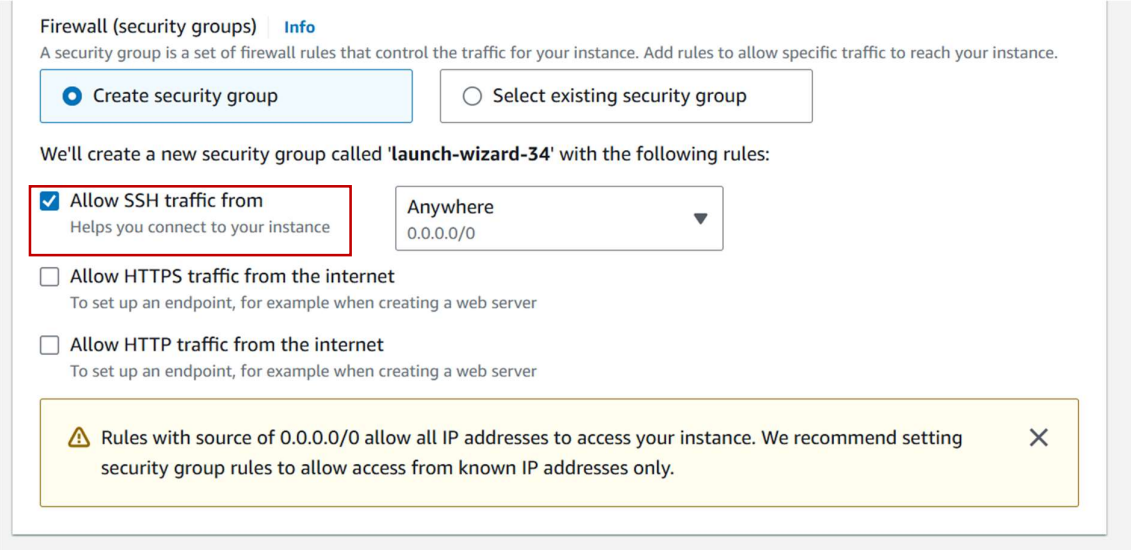
## Step 7: Network settings

- Network Settings are **set by default** make changes if required.



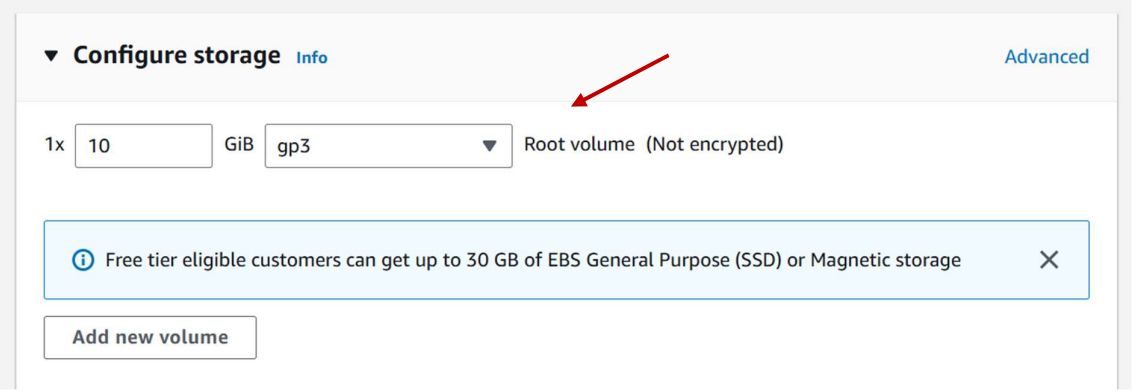

## Step 8: Configure Security Group

- Security groups act as **virtual firewalls** for your **EC2 instance**, **controlling inbound and outbound traffic**. You can configure security groups to **allow** or **deny traffic from specific IP addresses, protocols, and ports**. In this step, you'll need to create a new security group or select an existing one.
- Allow **SSH** Port for **Remote access**.



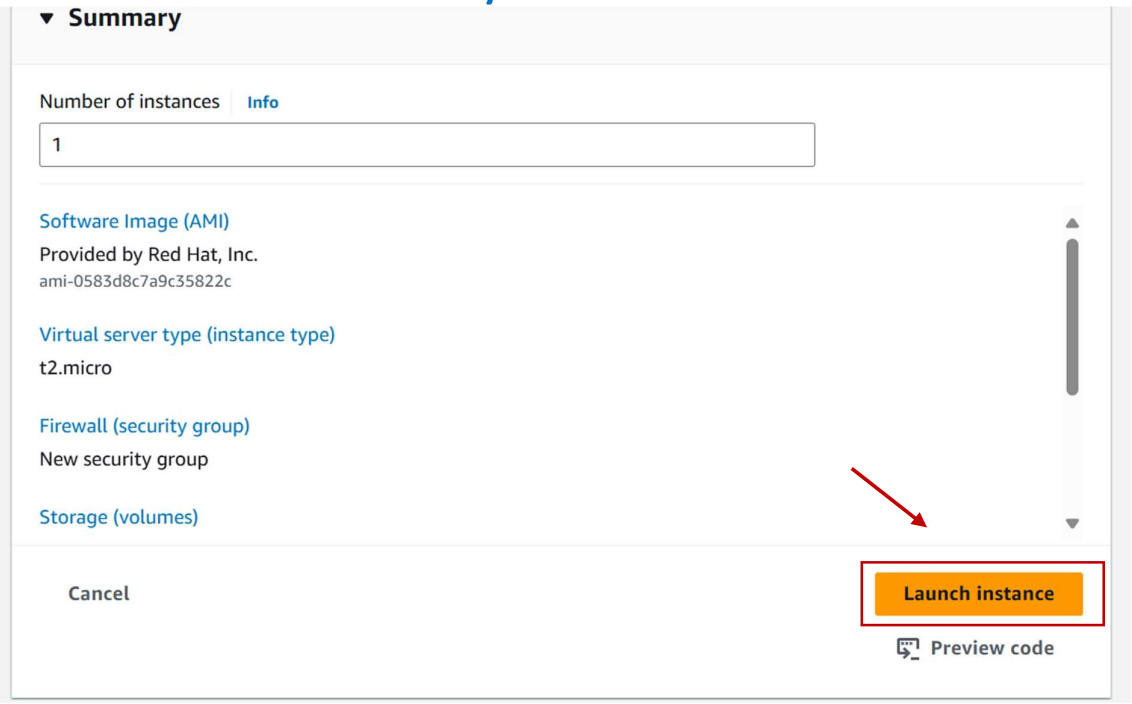
**Step 9: Configure Storage**

- **EC2 instances** require **storage** for the **operating system, applications, and data**. In this step, you can **add** and **configure storage volumes** for **your instance**. You can choose from **different types of storage**, including **Amazon Elastic Block Store (EBS) volumes** and **instance store volumes**.
- **10 GiB** by **default** for Red Hat Linux.



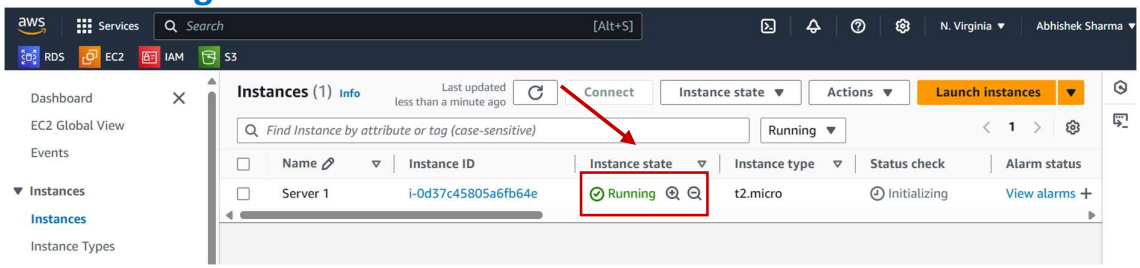

**Step 10: Review and Launch**

- Before **launching** your **instance**, **review** all the details to make sure everything is correct. You can also modify any settings that need to be changed. Once you're ready, click the **"Launch"** button to **start your EC2** instance.



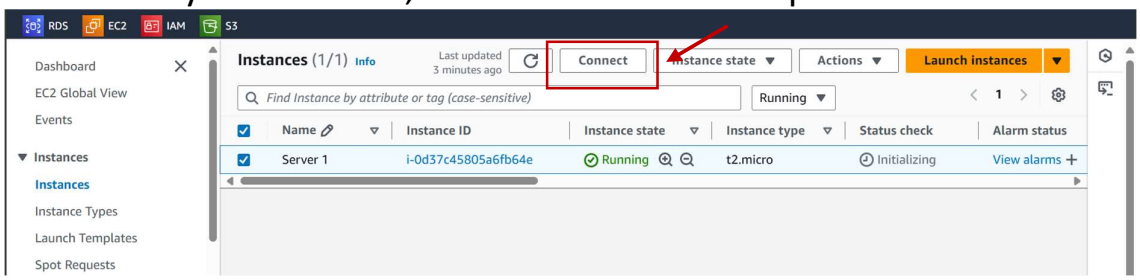
## Step 11: Wait for the Instance to Start

- Go to the **Instances** page and **wait** until the **instance** status is **Running**.

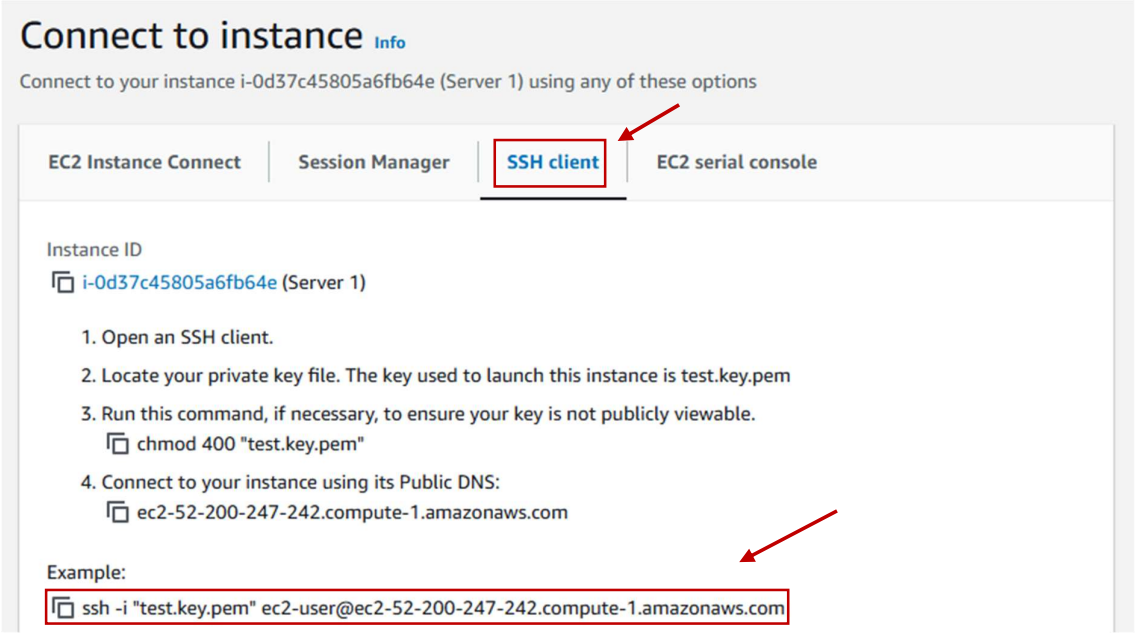



## Step 12: Connect to Your Instance With Command Prompt

- After launching your instance, you can connect to it using various methods, such as **SSH** or **Remote Desktop Protocol** (**RDP**).
- You can also use the AWS Systems Manager Session Manager to connect to your instance securely without the need for a public IP address.
- Select your **instance**, click **Connect** at the top.

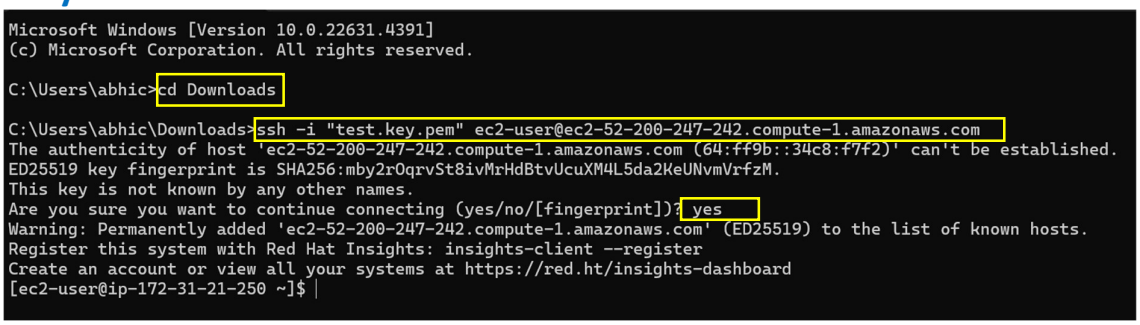



- choose the **SSH Client tab** and **copy SSH commands** for connecting to your instance.



- Open **Command Prompt**, navigate to your **.pem** file location, and **Paste the SSH command** provided in the AWS SSH Client tab.

- If prompted with **“Are you sure you want to continue?”**, type **yes**.




You're connected!

**Note**: Remember to **terminate your instance** when it’s no longer in use to avoid unnecessary charges.

## Conclusion

- Creating an EC2 instance in AWS is a simple and straightforward process. With just a few clicks, you can launch a virtual machine in the cloud and start using it right away. By following the steps outlined in this guide, you can create your own EC2 instance in no time.