AWS EBS

Amazon Elastic Block Store (Amazon EBS) is a scalable, high-performance blockstorage service that is designed for Amazon Elastic Compute Cloud (Amazon EC2). In this article, we'll walk through essential tasks to help you harness the full potential of EBS.

In this comprehensive guide, we'll dive into key objectives that will equip you with the skills to wield EBS effectively. From creating and attaching volumes to snapshotting for data security, this step-by-step tutorial will empower you to navigate the intricacies of EBS with confidence.

Why Mastering EBS Matters:

As data volumes grow and business demands evolve, having a firm grasp on EBS is essential. Whether you're managing critical databases, powering high-performance applications, or simply safeguarding your valuable data, EBS offers the flexibility and durability to meet these diverse needs.

Objectives

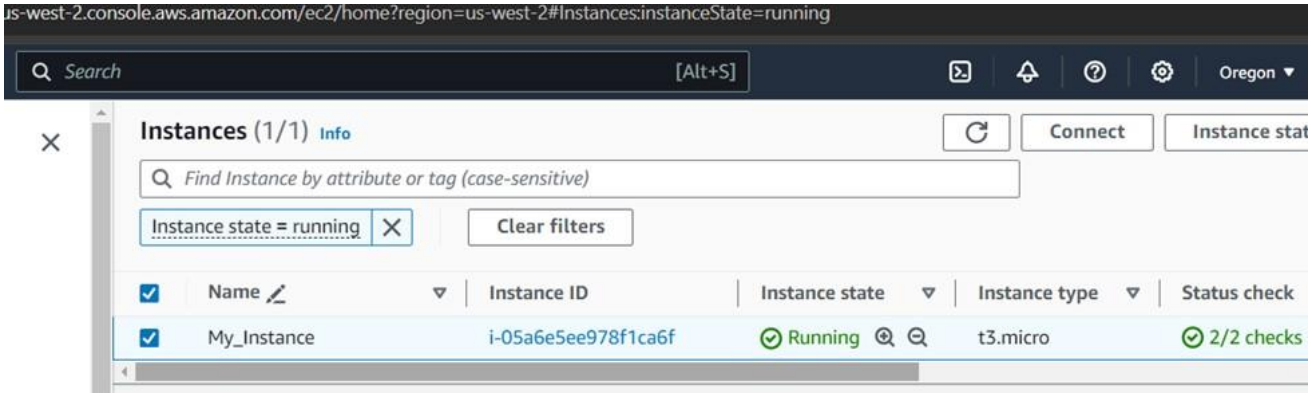
- Create an EBS volume.
- Attach and mount an EBS volume to an EC2 instance.
- Create a snapshot of an EBS volume.

Task 1: Creating a new EBS volume

We will create a new EBS volume and attach to the EC2 instance. By the way, you may have a question.***Why we're doing it:*** The answer is, creating an EBS volume is the foundational step in **configuring storage for your AWS resources**. It allows you to allocate the required storage capacity and type to meet the specific needs of your applications. Whether you're setting up a database, hosting a web server, or managing application files, creating an EBS volume is the starting point for ensuring your resources have the **necessary storage space**.

On the **AWS Management Console**, in the **Search** bar, enter and choose EC2 to open the **EC2 Management Console**.

1. An EC2 instance is already created for this activity. If not available, you can launch a new EC2 new instance from the console and get ready with a working instance.

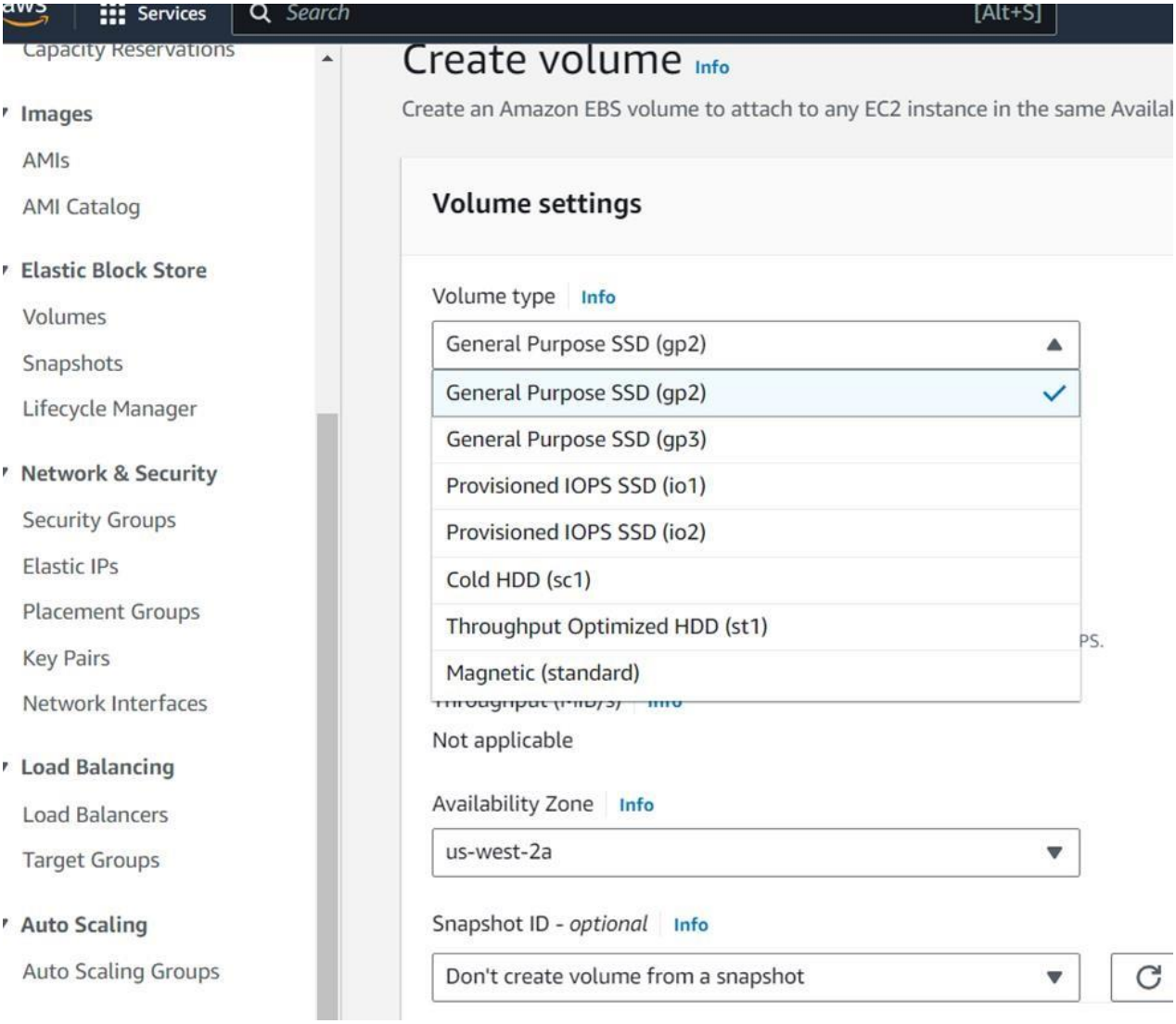


Ec2 Instance

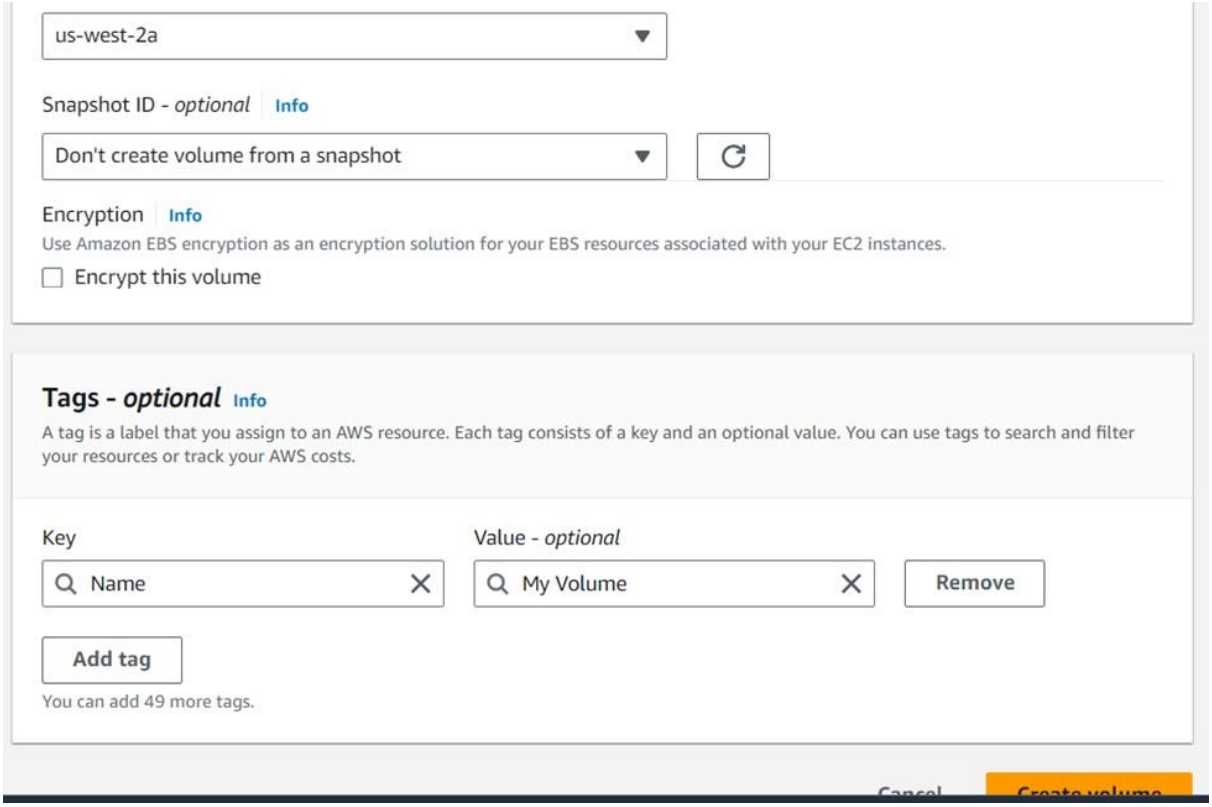
2. Note the **Availability Zone** for the instance is **us-west-2a.**

Tip: You might have to scroll to the right to see the **Availability Zone** column.

3. In the left navigation pane, for **Elastic Block Store**, choose **Volumes**.



Creating Volume - Screen 1



Create Volume Screen - 2

4. Choose **Create volume**, and configure the following options:

· **Volume type:** Choose **General Purpose SSD (gp2)**.

· **Size (GiB):** Enter 1 GiB

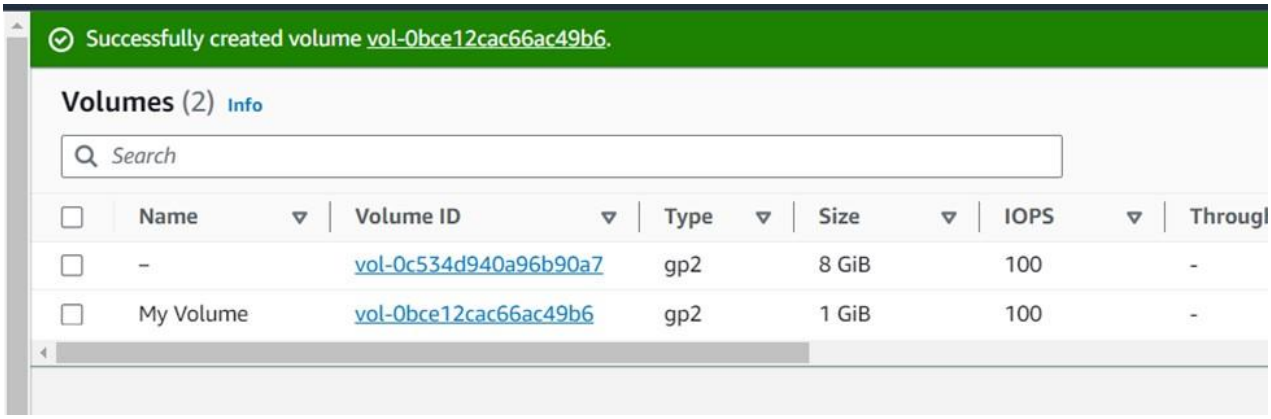
· **Availability Zone:** Choose the same Availability Zone as your EC2 instance (which is us-west-2a in this case).

5. In the **Tags -*optional*** section, choose Add Tag, and configure the following options:

o **Key:** Enter Name o

Value: Enter My Volume

6. Choose **Create volume**.



My Volume is created successfully

A new volume appears with the status of *Creating* in the **Volume state** column. This status soon changes to *Available*. You might need to choose **Refresh** to see your new volume.

Task 2: Attaching the volume to an EC2 instance

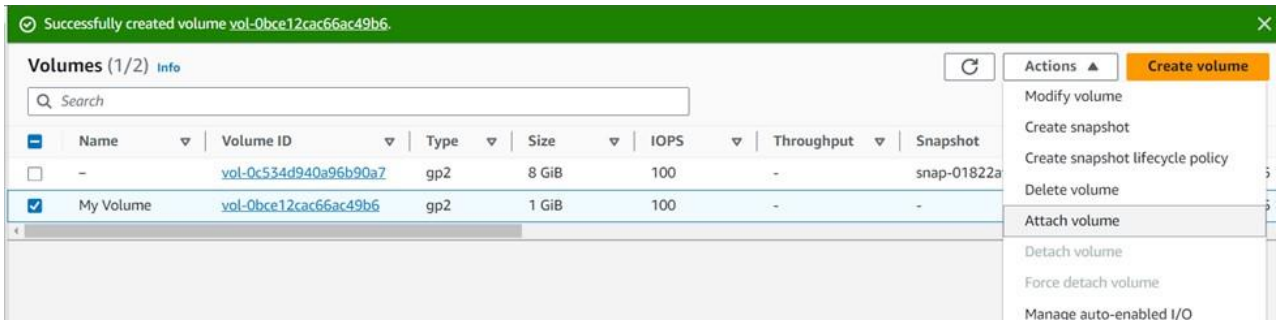
You now attach your new volume to an EC2 instance.

Why to attach the volume to an EC2 instance ?

Attaching and mounting an EBS volume to an EC2 instance is crucial for enabling direct access to the allocated storage. This process establishes a vital link between the EC2 instance and the EBS volume, enabling applications to read and write data. By properly attaching and mounting, you're ensuring **seamless integration** between compute and storage resources, which is fundamental for **data persistence and retrieval.**

12. Select **My Volume**.

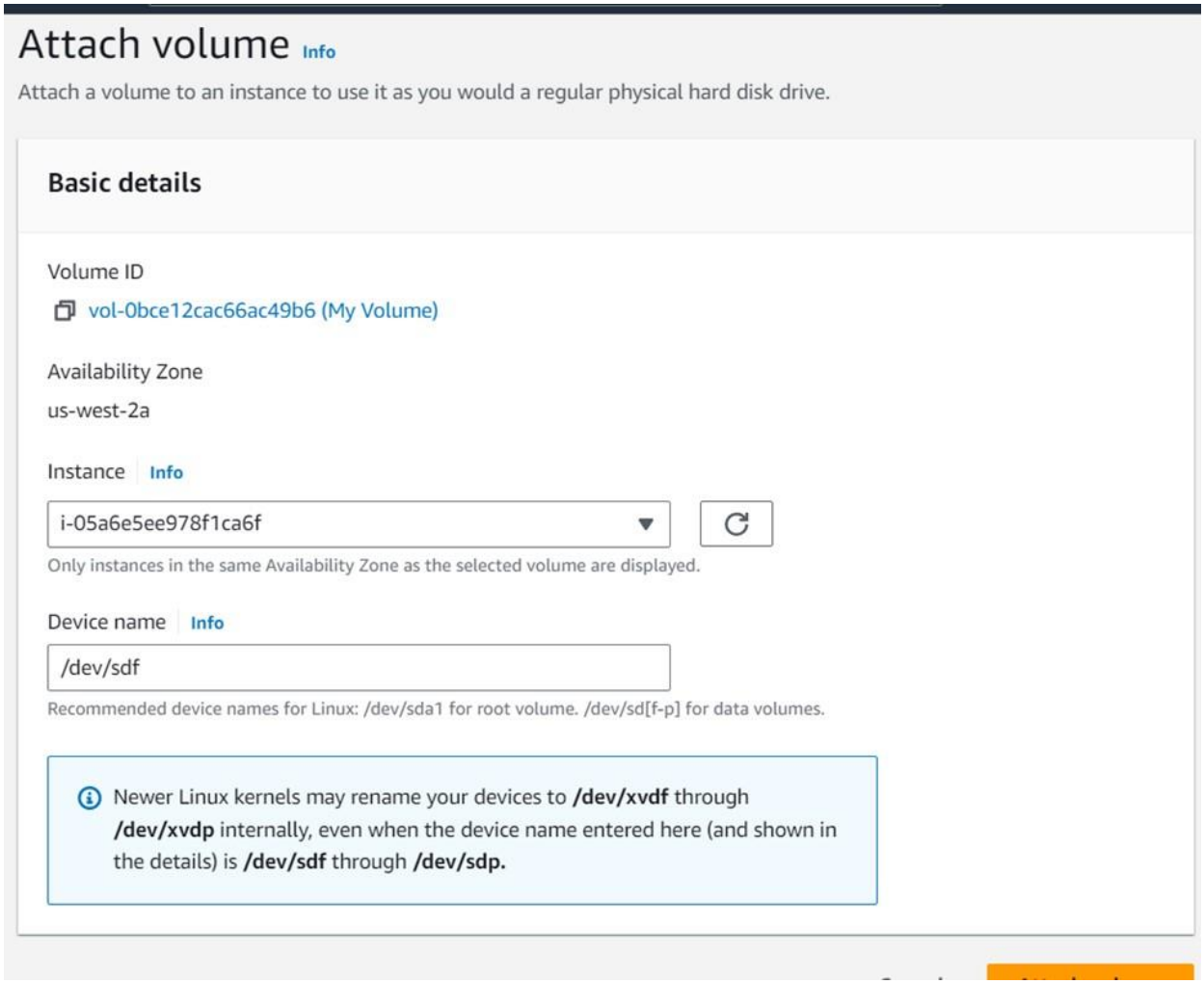
13. From the **Actions** menu, choose **Attach volume**.



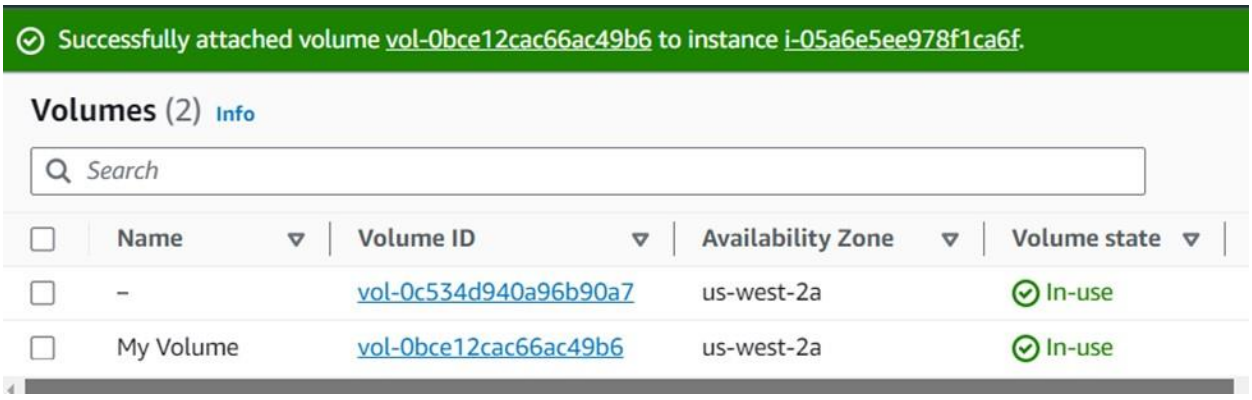
Choose Attach volume after selecting the created Volume x`14. From the

Instance dropdown list, choose the **My_Instance** instance.

The **Device name** field is set to **/dev/sdf**.



15. Choose **Attach volume**.



My Volume is attached to the EC2 instance

The **Volume state** of your new volume is now *In-use*.

Why there is a need for Task 3:

We may have a doubt that we have attached the volume to EC2 then why we need to perform the below steps by connecting to the instance. The answer is:

- The OS needs to recognize the new attached volume.(command: lsblk)
- We need to format the EBS volume with a file system (command mkfs) so that it creates a file system structure on the volume and gets ready to store files.
- Creating a mount point (command: /mnt/data).The mount point is a directory where the file system of the attached volume will be attached.
- Mounting the volume (command: mount), establishes a connection between file system on EBS volume and specified mount point.

Task 3: Connecting to the EC2 instance

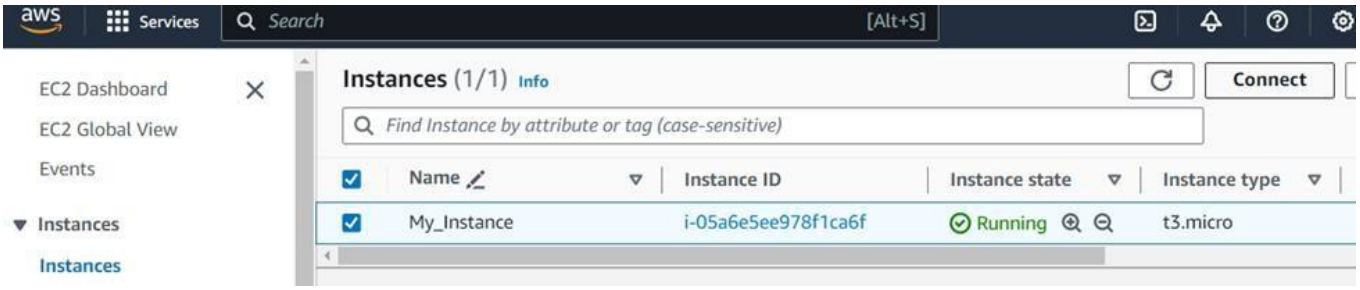
Use EC2 Instance Connect to connect to the EC2 instance.

16. On the **AWS Management Console**, Choose EC2.

17. In the navigation pane, choose **Instances**.

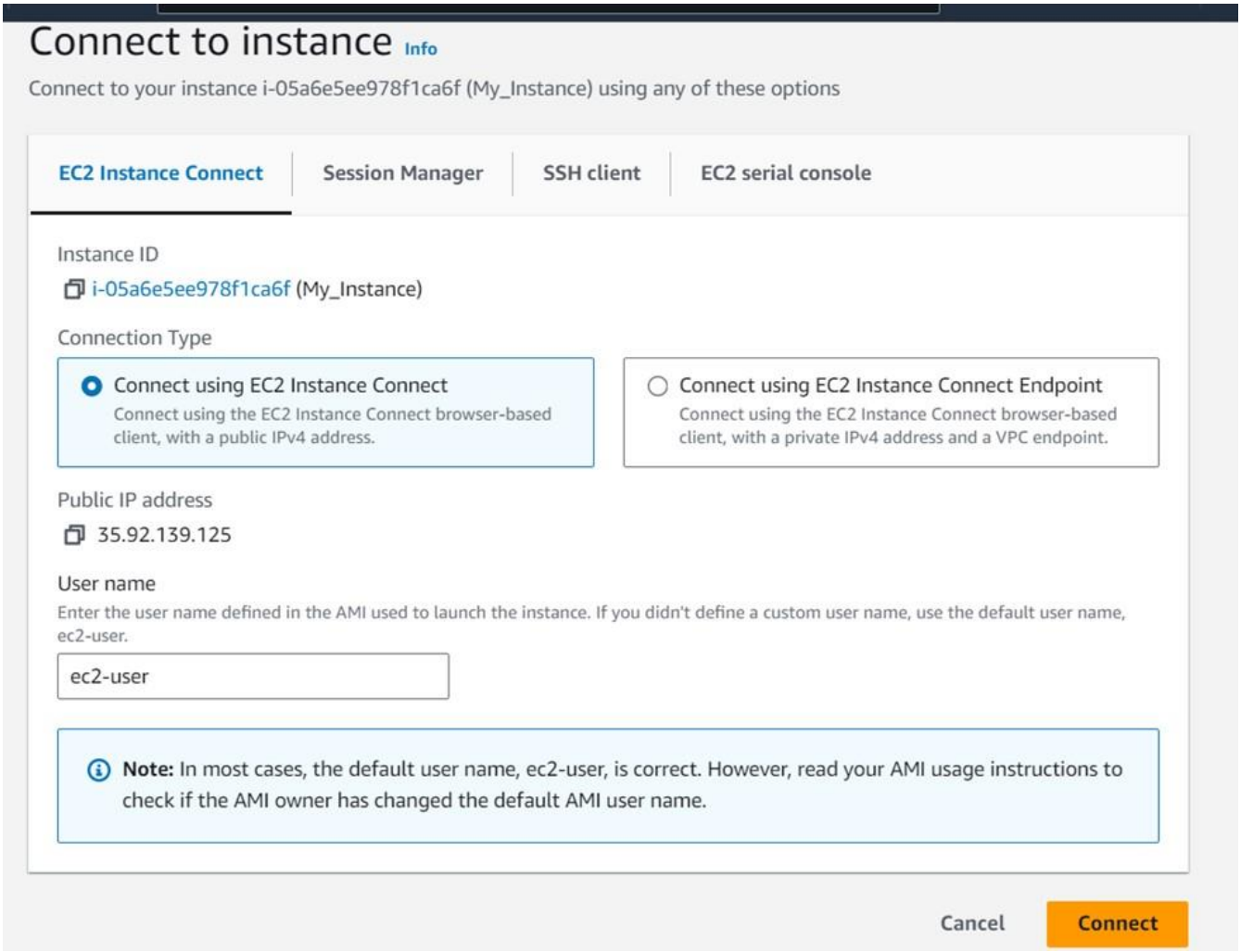
18. From the list of instances, select the **My_Instance** instance.

19. Choose **Connect**.



Select the EC2 instance to connect

20. On the **EC2 Instance Connect** tab, choose **Connect**.



My_Instance is connect via EC2 Instance Connect

This option opens a new browser tab with the **EC2 Instance Connect** terminal window. We can also use an SSH client to connect to the EC2 instance.