DAY 1

DOCKER

1. EC2

- EC2 stands for Amazon Elastic Compute Cloud.
- Amazon EC2 is a web service that provides resizable compute capacity in the cloud.
- Amazon EC2 reduces the time required to obtain and boot new user instances to minutes rather than in older days, if you need a server then you had to put a purchase order, and cabling is done to get a new server which is a very time-consuming process. Now, Amazon has provided an EC2 which is a virtual machine in the cloud that completely changes the industry.
- You can scale the compute capacity up and down as per the computing requirement changes.
- Amazon EC2 changes the economics of computing by allowing you to pay only for the resources that you actually use. Rather than you previously buy physical servers, you would look for a server that has more CPU capacity, RAM capacity and you buy a server over 5 year term, so you have to plan for 5 years in advance. People spend a lot of capital in such investments. EC2 allows you to pay for the capacity that you actually use.
- Amazon EC2 provides the developers with the tools to build resilient applications that isolate themselves from some common scenarios.

2.EC2 Pricing Options

On Demand

- It allows you to pay a fixed rate by the hour or even by the second with no commitment.
- Linux instance is by the second and windows instance is by the hour.
- On Demand is perfect for the users who want low cost and flexibility of Amazon EC2 without any up-front investment or long-term commitment.

Reserved

- It is a way of making a reservation with Amazon or we can say that we make a contract with Amazon. The contract can be for 1 or 3 years in length.

- In a Reserved instance, you are making a contract means you are paying some upfront, so it gives you a significant discount on the hourly charge for an instance.

Spot Instances

- It allows you to bid for a price whatever price that you want for instance capacity, and providing better savings if your applications have flexible start and end times.
- Spot Instances are useful for those applications that have flexible start and end times.
- It is useful for those applications that are feasible at very low compute prices.
- It is useful for those users who have an urgent need for large amounts of additional computing capacity

Dedicated Hosts

- A dedicated host is a physical server with EC2 instance capacity which is fully dedicated to your use.
- Dedicated hosts are used to address compliance requirements and reduces host by allowing to use your existing server-bound server licenses.
- It can be purchased as a Reservation for up to 70% off On-Demand price.

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1. Open the Amazon EC2 console .
2. Choose **Launch Instance**.

3. In **Step 1: Choose an Amazon Machine Image (AMI)**, find an Amazon Linux 2 AMI at the top of the list and choose **Select**.
4. In **Step 2: Choose an Instance Type**, choose **Next: Configure Instance Details**.
5. In **Step 3: Configure Instance Details**, provide the following information:
    - Leave **Number of instances** at one.
    - Leave **Purchasing option** at the default setting.
    - For **Network**, choose the entry for the same VPC that you noted when you created your EFS file system .
    - For **Subnet**, choose a default subnet in any Availability Zone.
    - For **File systems**, make sure that the EFS file system that you created in Step 1: is selected. The path shown next to the file system ID is the mount point that the EC2 instance will use, which you can change.
    - The **User data** automatically includes the commands for mounting your Amazon EFS file system.
6. Choose **Next: Add Storage**.
7. Choose **Next: Add Tags**.
8. Name your instance and choose **Next: Configure Security Group**.
9. In **Step 6: Configure Security Group**, set **Assign a security group** to **Select an existing security group**. Choose the default security group to make sure that it can access your EFS file system.
10. Choose **Review and Launch**.
11. Choose **Launch**.
12. Select the check box for the key pair that you created, and then choose **Launch Instances**