EC2 Instances

Instance:

An instance is a virtual server in the cloud. A cloud instance allows software developers to scale beyond traditional physical boundaries. There are two main benefits of cloud instances.
1. Scalability - Developers can horizontally scale cloud resources by increasing the CPU, memory, storage, and network resources to the particular instance.
2. Fault tolerance - Organizations create redundancy by using multiple duplicate instances for backup.

Its configuration at launch is a copy of the AMI that you specified when you launched the instance. You can launch different types of instances from a single AMI. An instance type essentially determines the hardware of the host computer used for your instance. Each instance type offers different compute and memory capabilities. Select an instance type based on the amount of memory and computing power that you need for the application or software that you plan to run on the instance.

Steps to launch an instance:

1. Open the Amazon EC2 console at https://console.aws.amazon.com/ec2/.

2. In the navigation bar at the top of the screen, the current AWS Region is displayed (for example, US East (Ohio)). Select a Region in which to launch the instance. This choice is important because some Amazon EC2 resources can be shared between Regions, while others can't.

3. From the Amazon EC2 console dashboard, choose Launch instance.

4. (Optional) Under Name and tags, for Name, enter a descriptive name for your instance.

5. Under Application and OS Images (Amazon Machine Image), choose Quick Start, and then choose the operating system (OS) for your instance.

6. Under Key pair (login), for Key pair name, choose an existing key pair or create a new one.

7. In the Summary panel, choose Launch instance.

Security:

Cloud security at AWS is the highest priority. As an AWS customer, you benefit from a data center and network architecture that are built to meet the requirements of the most security-sensitive organizations.

Security is a shared responsibility between AWS and you. The shared responsibility model describes this as security of the cloud and security in the cloud:

- Security of the cloud – AWS is responsible for protecting the infrastructure that runs AWS services in the AWS Cloud. AWS also provides you with services that you can use securely. Third-party auditors regularly test and verify the effectiveness of our security as part of the AWS Compliance Programs. To learn about the compliance programs that apply to Amazon EC2, see AWS Services in Scope by Compliance Program.

- Security in the cloud – Your responsibility includes the following areas:

    - Controlling network access to your instances, for example, through configuring your VPC and security groups. For more information, see Controlling network traffic.

    - Managing the credentials used to connect to your instances.

    - Managing the guest operating system and software deployed to the guest operating system, including updates and security patches. For more information, see Update management in Amazon EC2.

    - Configuring the IAM roles that are attached to the instance and the permissions associated with those roles. For more information, see IAM roles for Amazon EC2.

Monitoring:

Monitoring is an important part of maintaining the reliability, availability, and performance of your Amazon Elastic Compute Cloud (Amazon EC2) instances and your AWS solutions. You should collect monitoring data from all of the parts in your AWS solutions so that you can more easily debug a multi-point failure if one occurs.

System status checks – monitor the AWS systems required to use your instance to ensure that they are working properly. These checks detect problems with your instance that require AWS involvement to repair. When a system status check fails, you can choose to wait for AWS to fix the issue or you can resolve it yourself (for example, by stopping and restarting or terminating and replacing an instance). Examples of problems that cause system status checks to fail include:

- Loss of network connectivity
- Loss of system power
- Software issues on the physical host
- Hardware issues on the physical host that impact network reachability

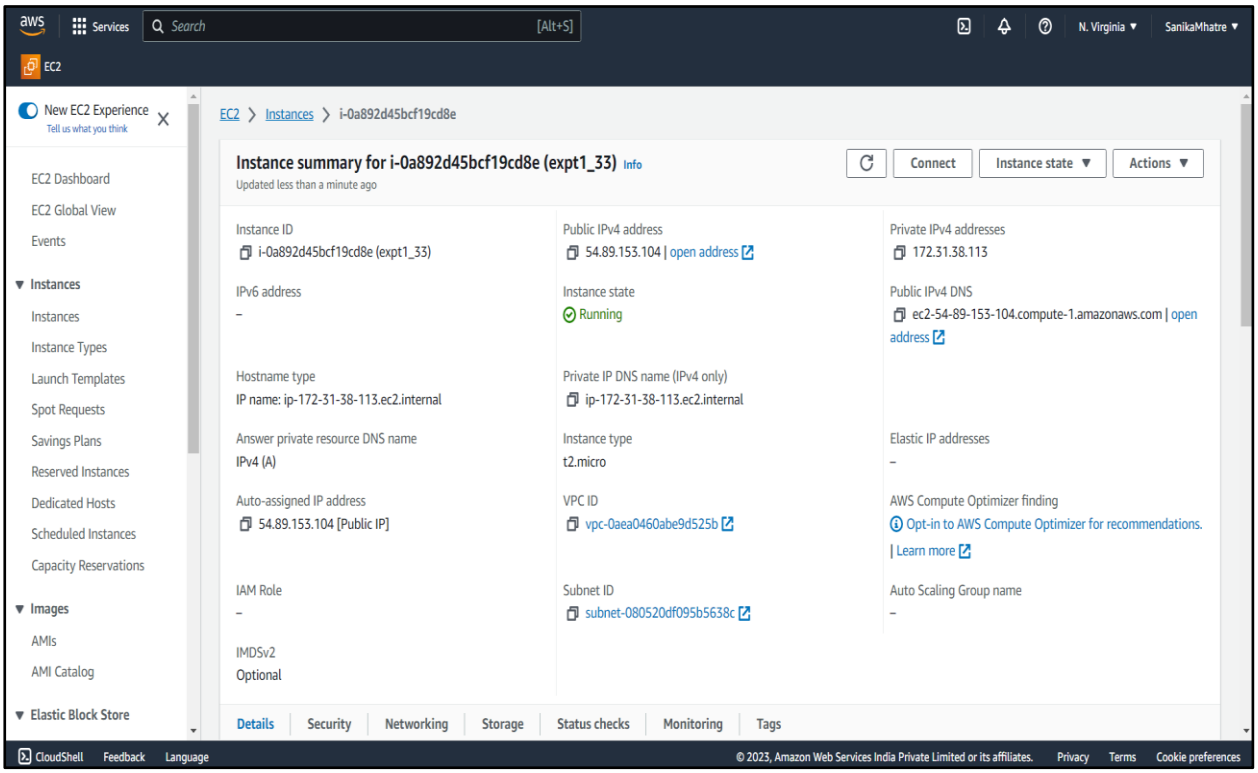
Instance status checks – monitor the software and network configuration of your individual instance. These checks detect problems that require your involvement to repair. When an instance status check fails, typically you will need to address the problem yourself (for

example, by rebooting the instance or by making modifications in your operating system). Examples of problems that may cause instance status checks to fail include:

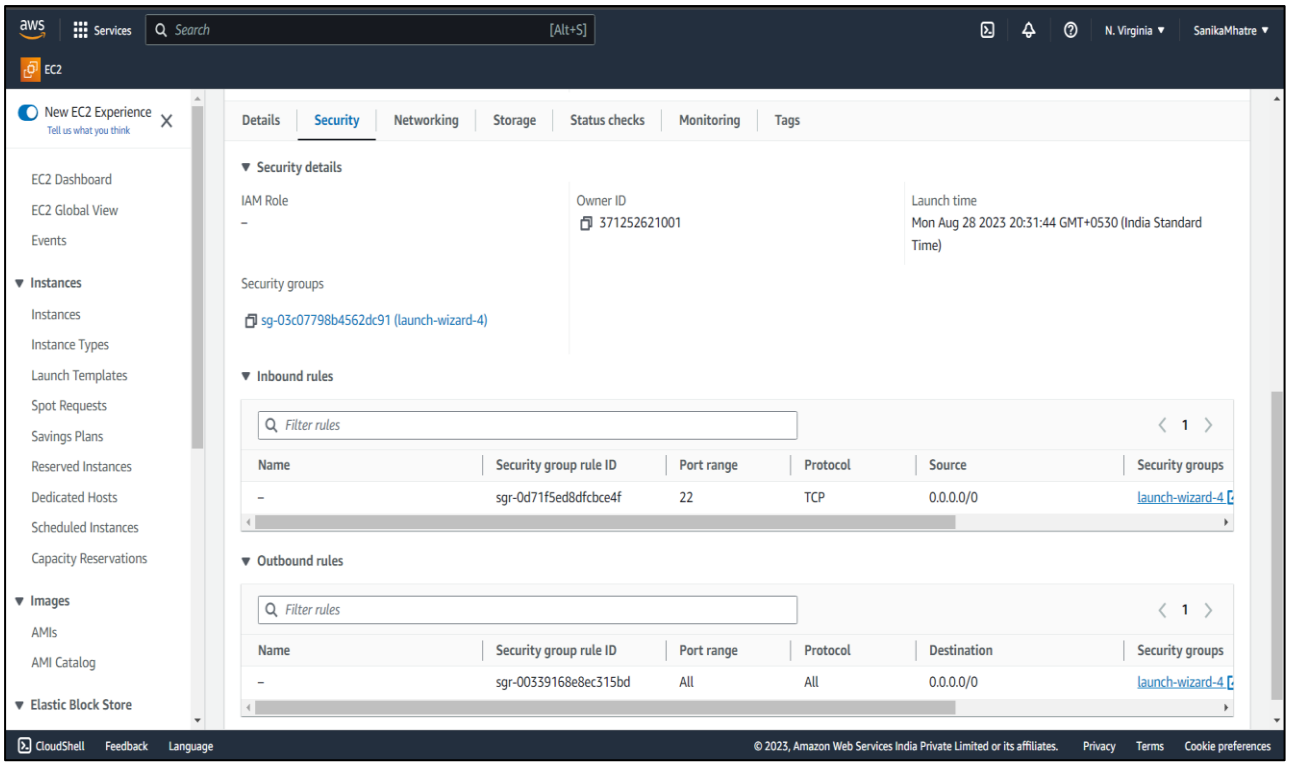
- Failed system status checks
- Misconfigured networking or start-up configuration
- Exhausted memory
- Corrupted file system
- Incompatible kernel

Output:

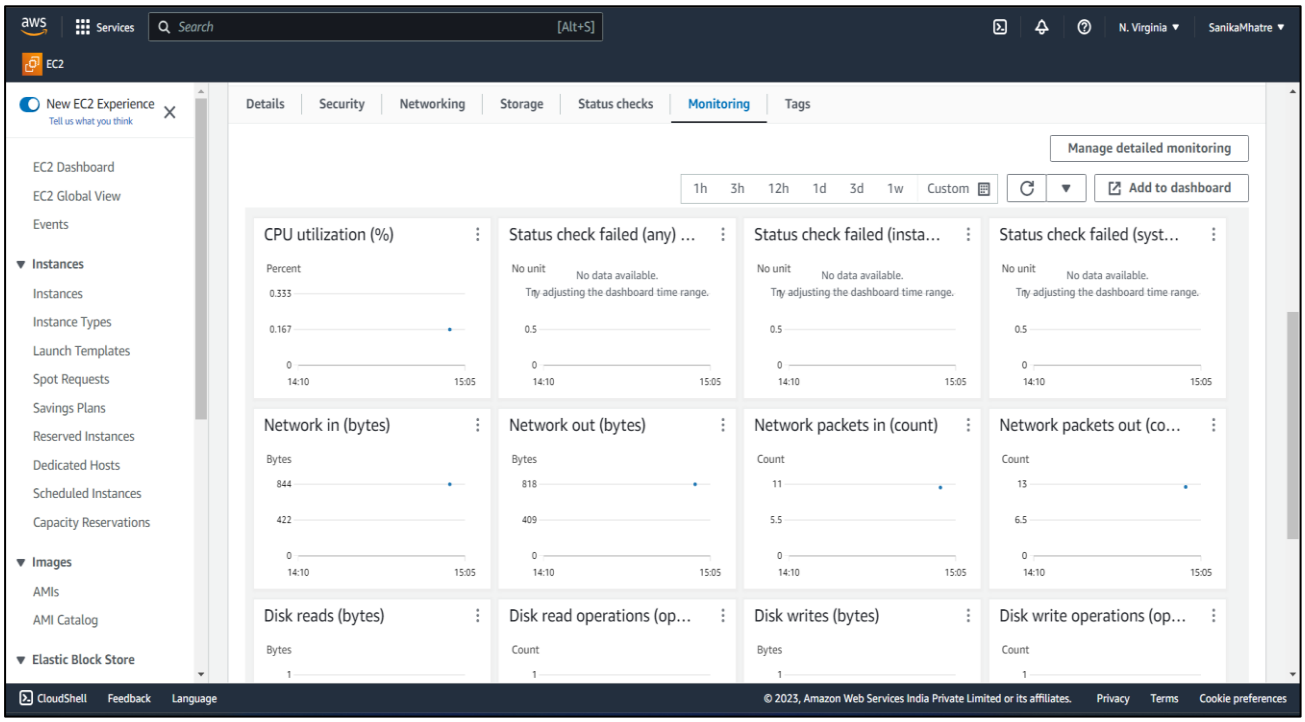
1. Screenshot of Launched EC2 instance-



2.Screenshot of Security details of the launched EC2 instance.



3.Screenshot of monitoring tab of launched instance-



4. Screenshot of MobaXterm window – Connected the launched instance-