Project Report: Deploying a ROS2 Server on AWS Cloud

Problem Title: Deploy a ROS Server on AWS Cloud

Introduction

As a software engineer at IS Robotics, the goal is to deploy the Robot Operating System (ROS2) on an AWS EC2 instance. This deployment will enable developers to run robotic simulations and implementations remotely, leveraging the scalability and accessibility of cloud resources. This document outlines the steps to set up an EC2 instance running Ubuntu 24.04 LTS and install ROS2 on it.

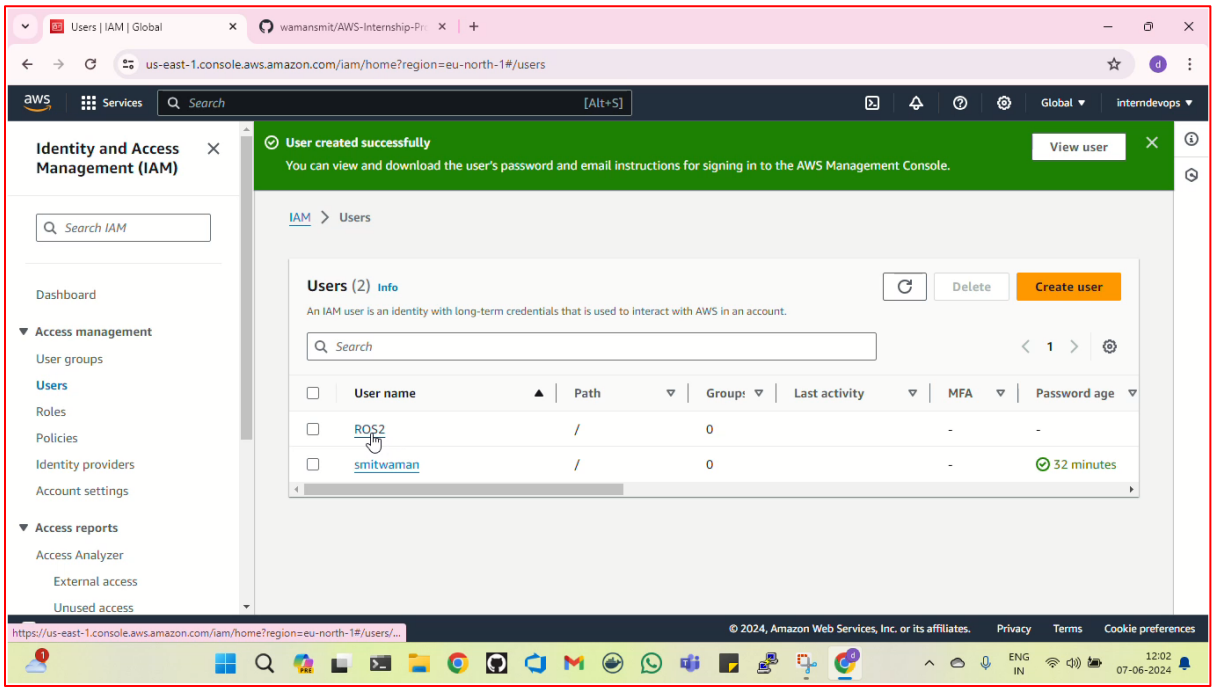
Requirements for the Cloud

- **Operating System**: Ubuntu 24.04 LTS
- **Instance Type**: General purpose t2.micro
- **Storage**: 20GB
- **Prerequisites**: AWS Account

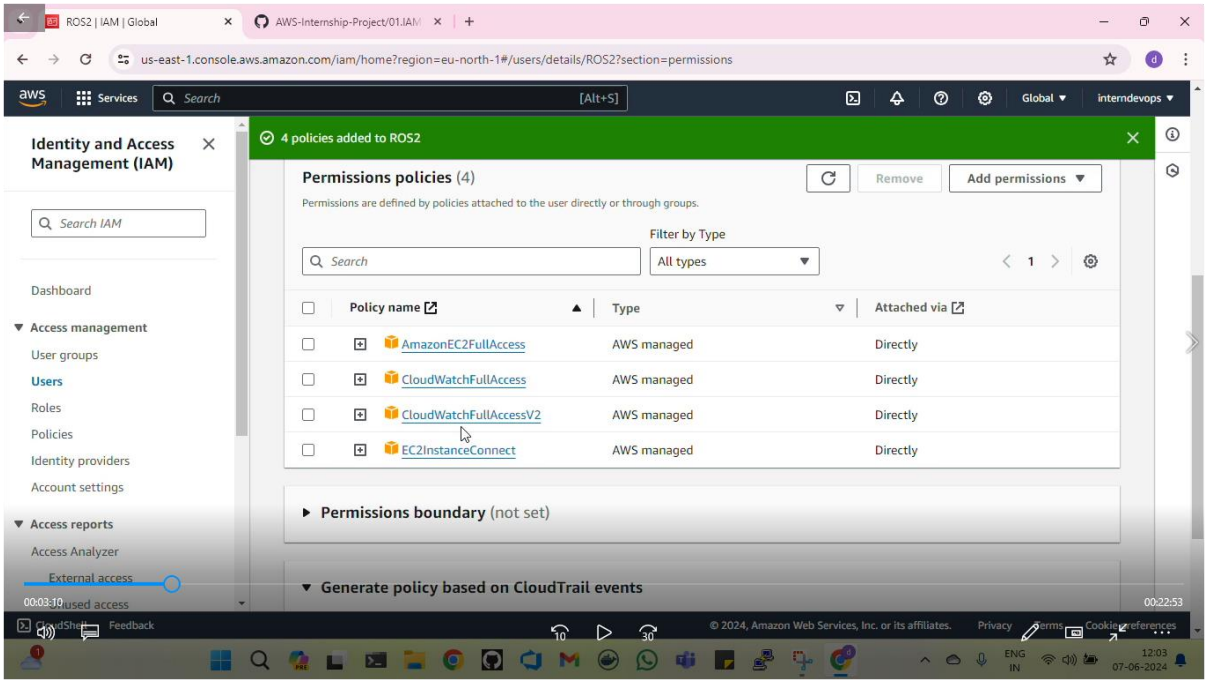
Steps to Deploy ROS2 on AWS EC2

Step 1: Setup IAM User and Roles

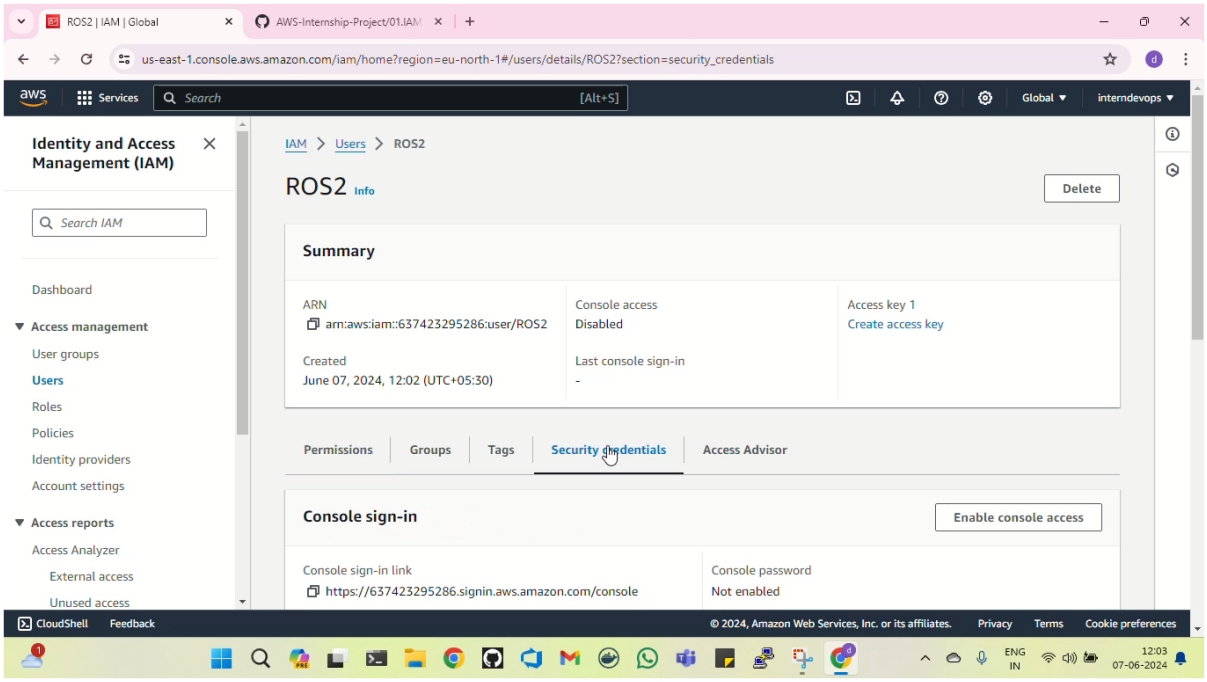
1. Create an IAM user named "ROS2".



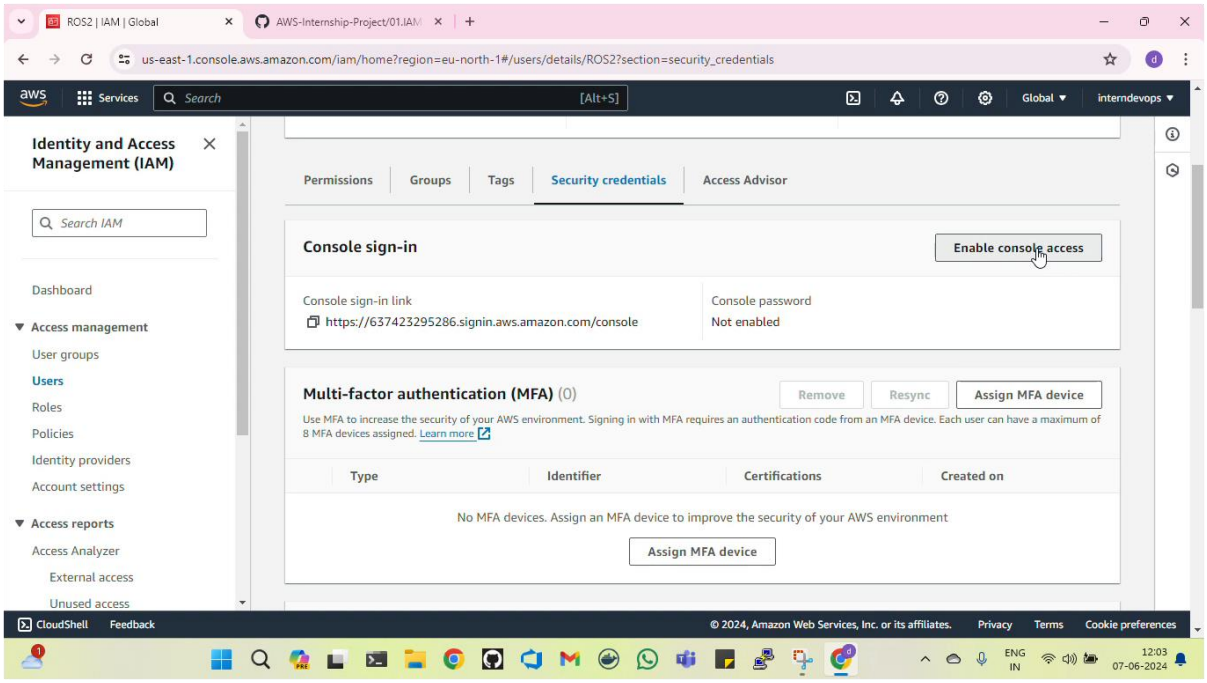
2. Provide programmatic access and AWS Management Console access.



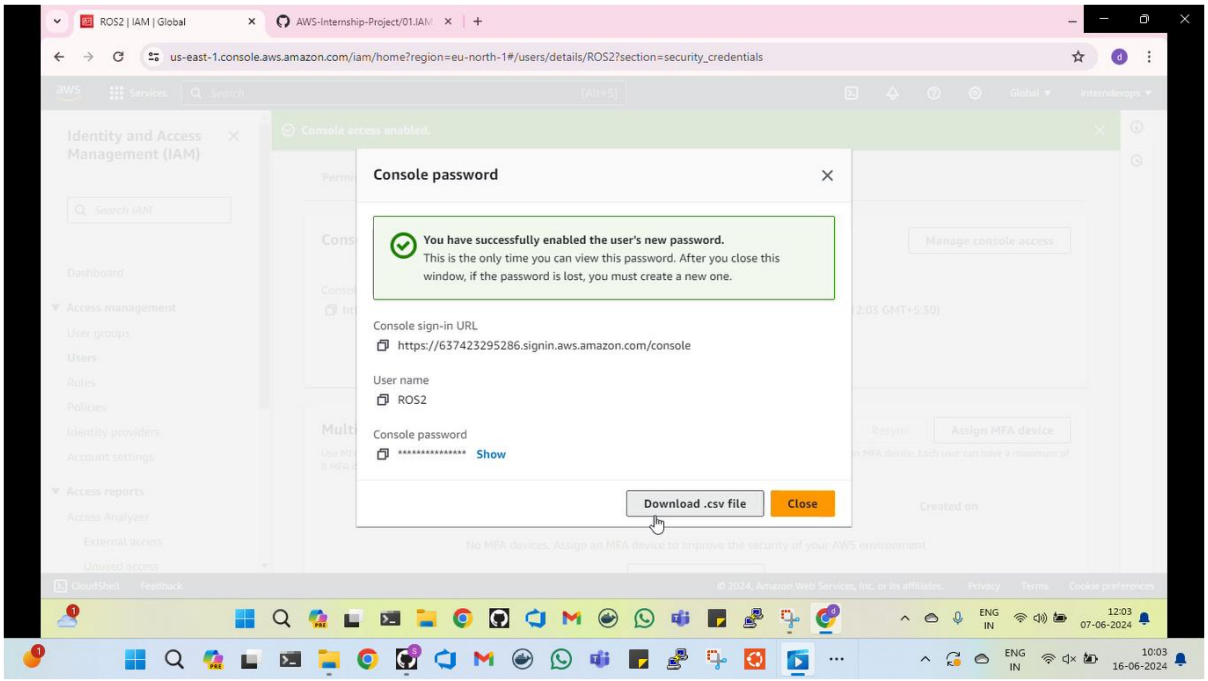
3. Click on ROS2 user in IAM user console and go to “security credentials” section.



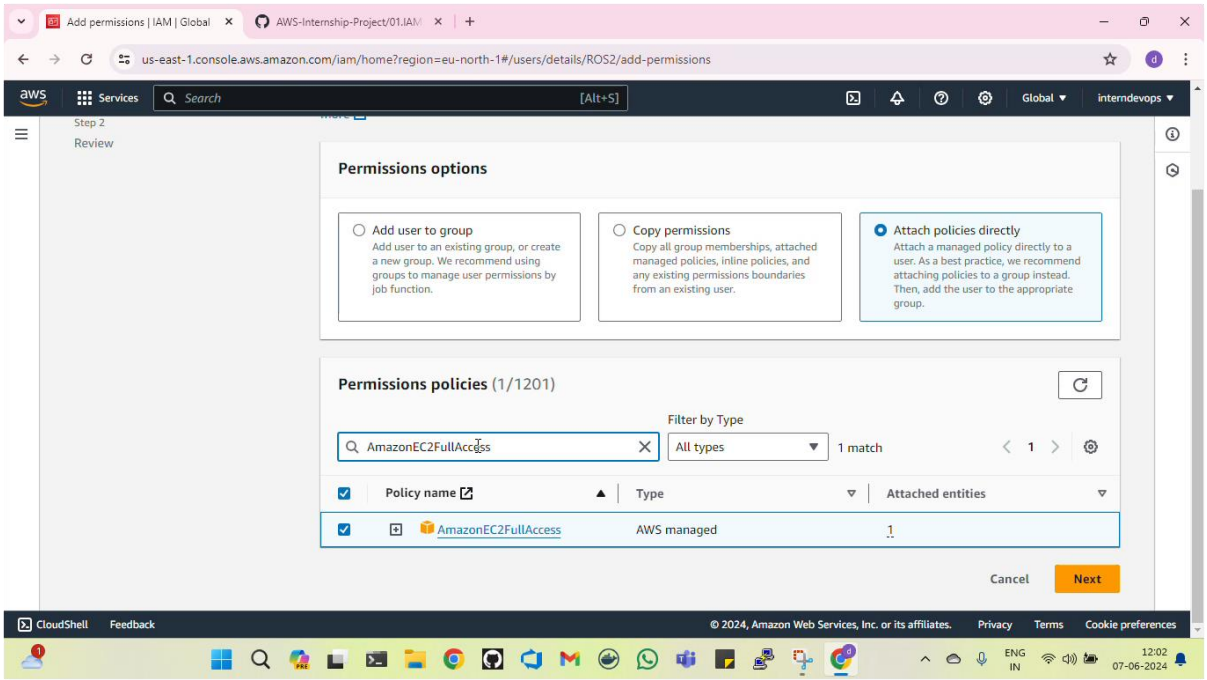
4. Click on “Enable Console Access”



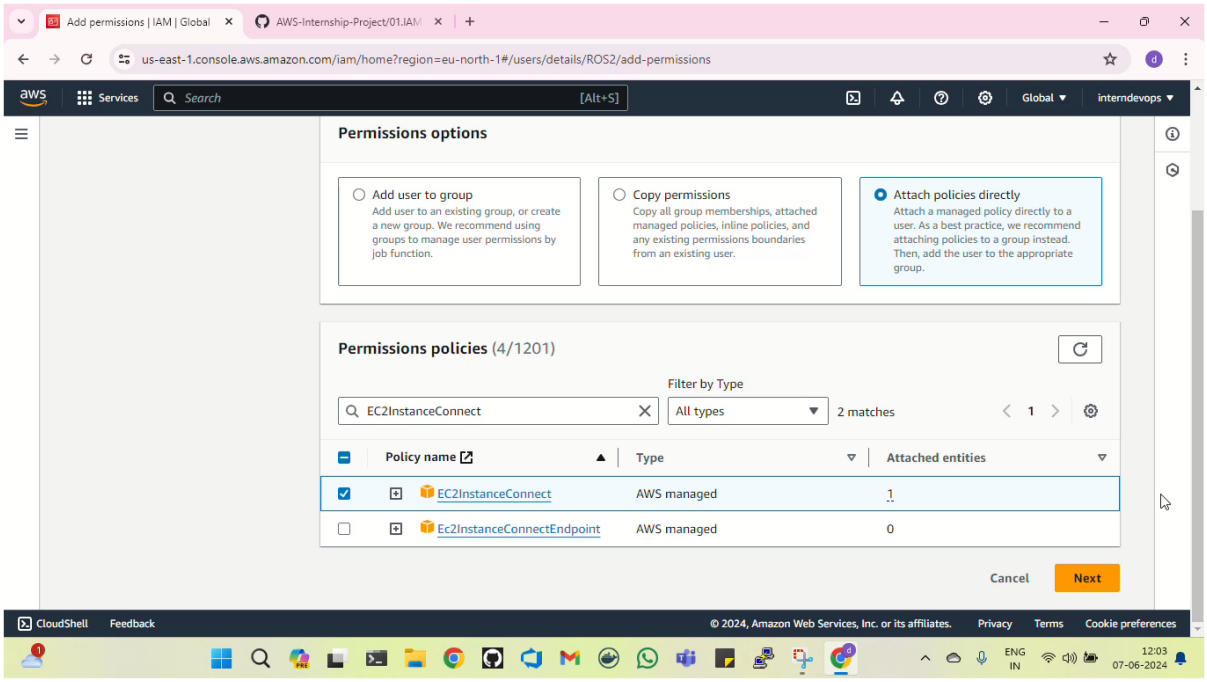
5. Download the user credentials (Access key ID and Secret access key).



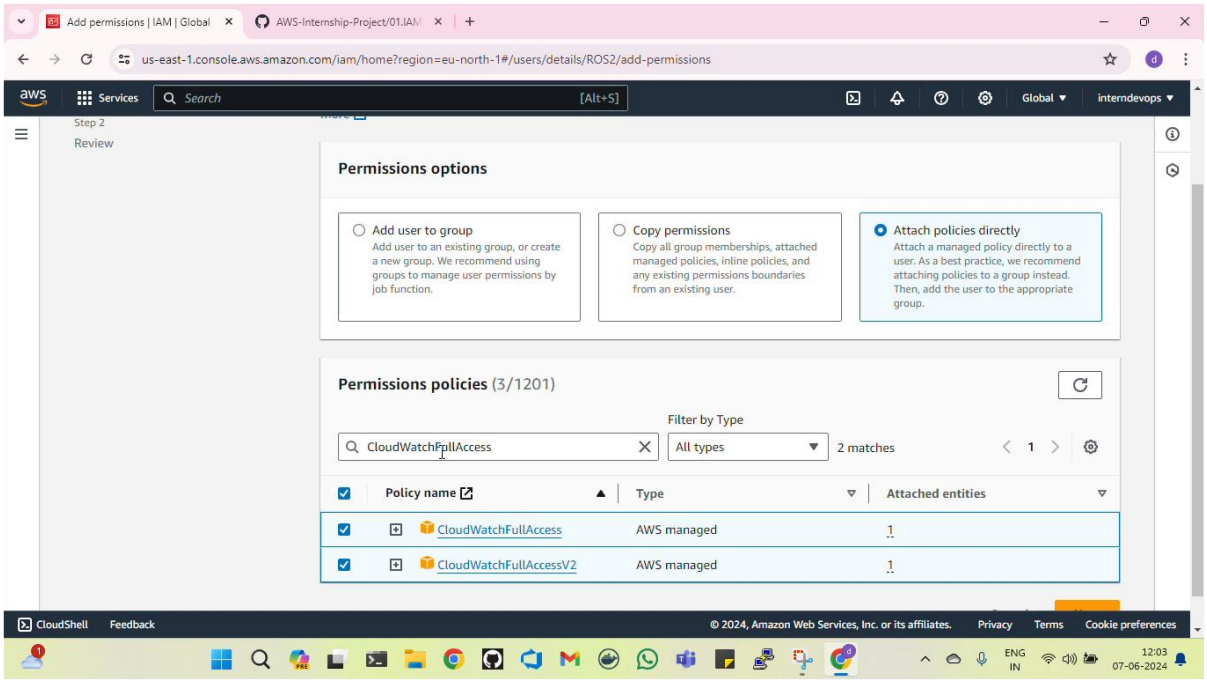
6. Attach policies to allow EC2 full access.



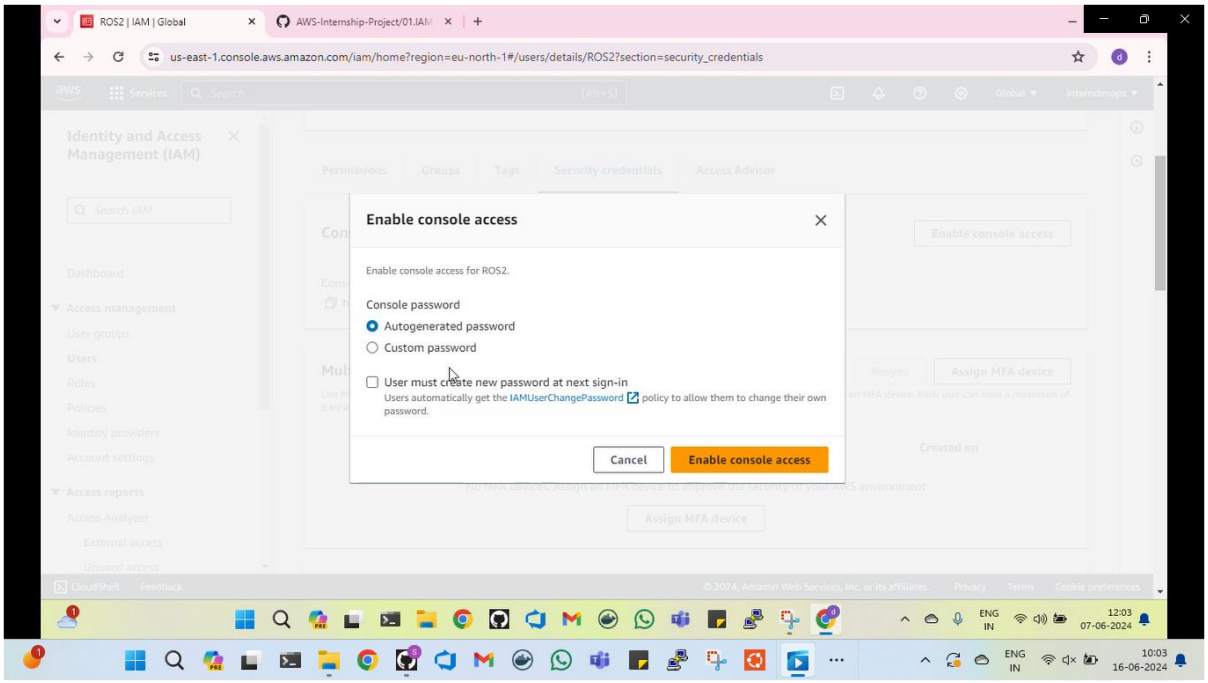
7. Attach policies for SSH access.



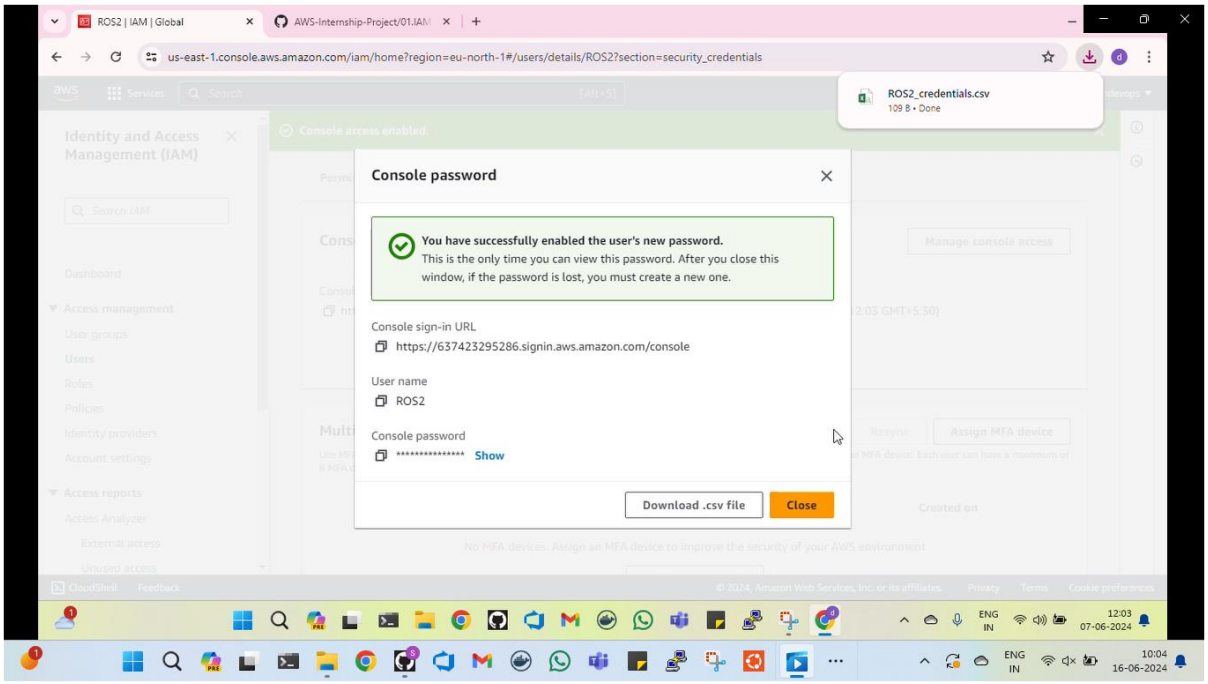
8. Attach policies for Cloud Watch monitoring.



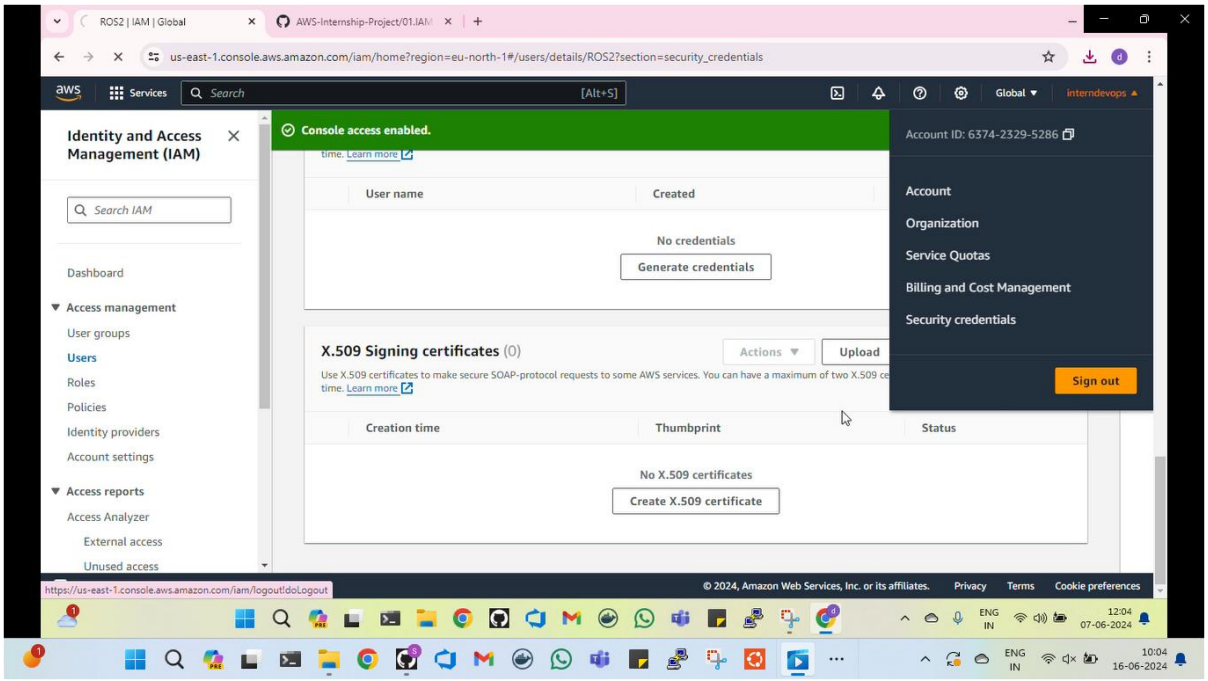
9. Here you can auto generate and custom password. Select any that you want and click on “enable console access” button.



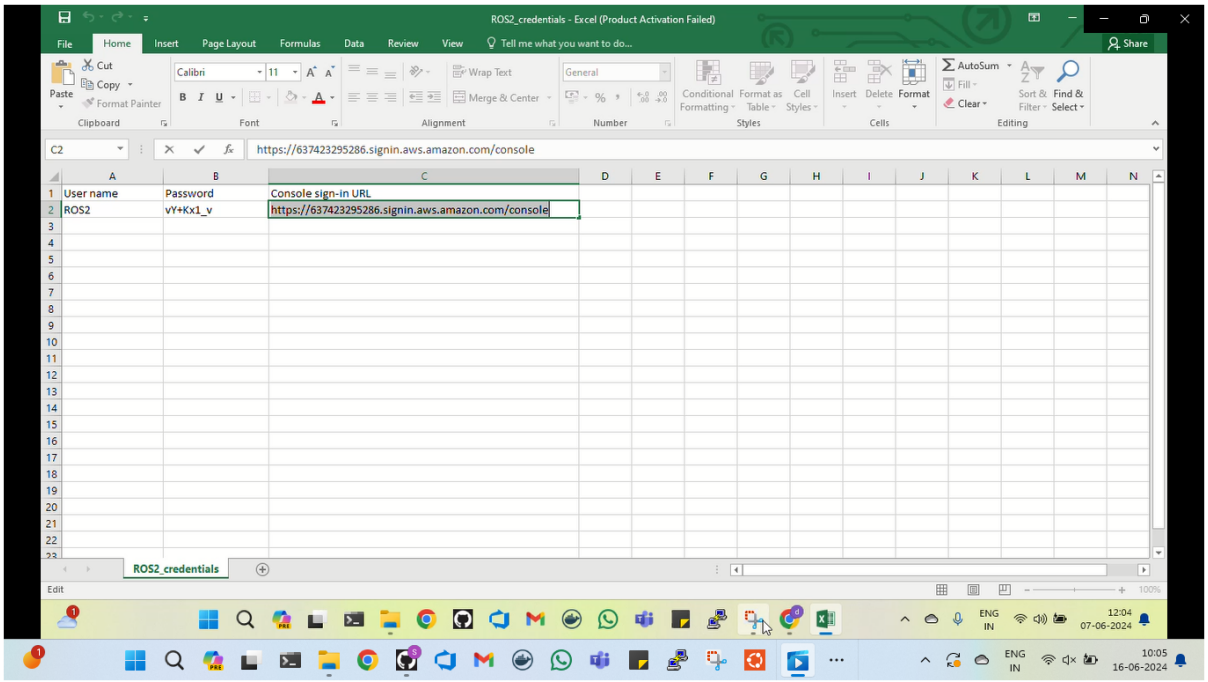
10. Once you successfully generated password for your console access download .csv file.



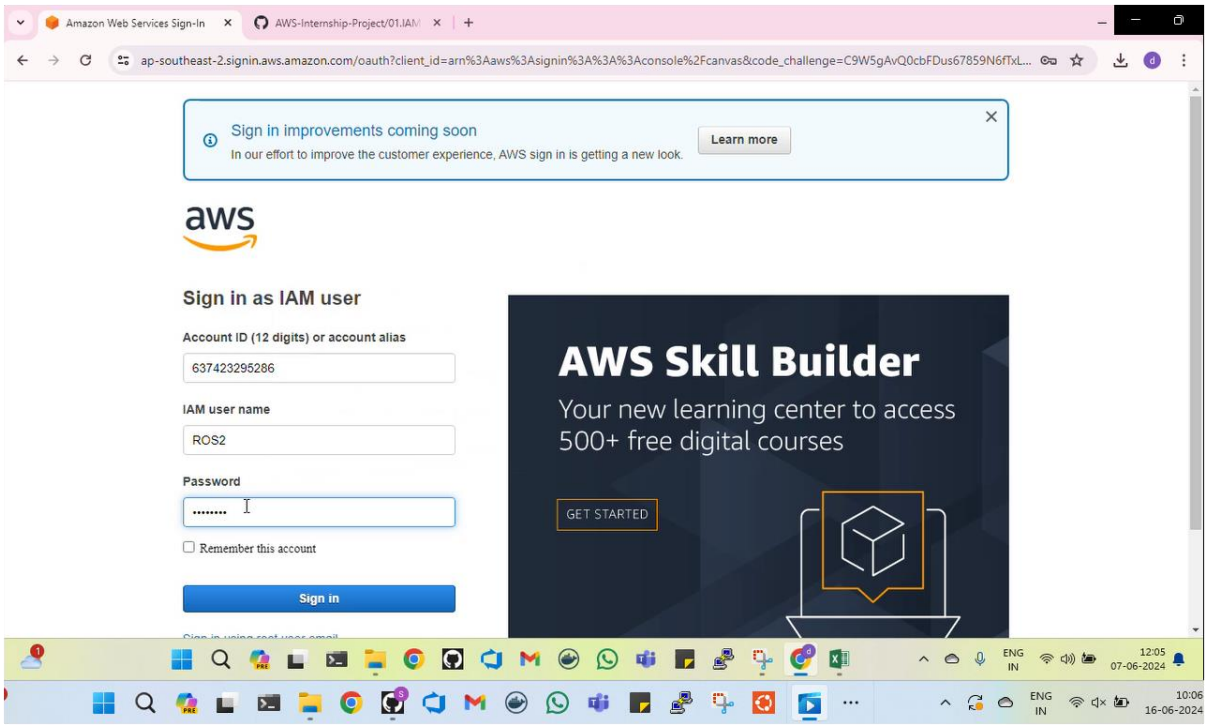
11. Sign out your root user AWS account.



12. Now go to your Download folder and open .csv file.



13. Copy sign-in and navigate to url with pasting it into browser. Copy your credentials and paste into IAM username and password.



14. Login to your AWS management console with new ROS2 user.