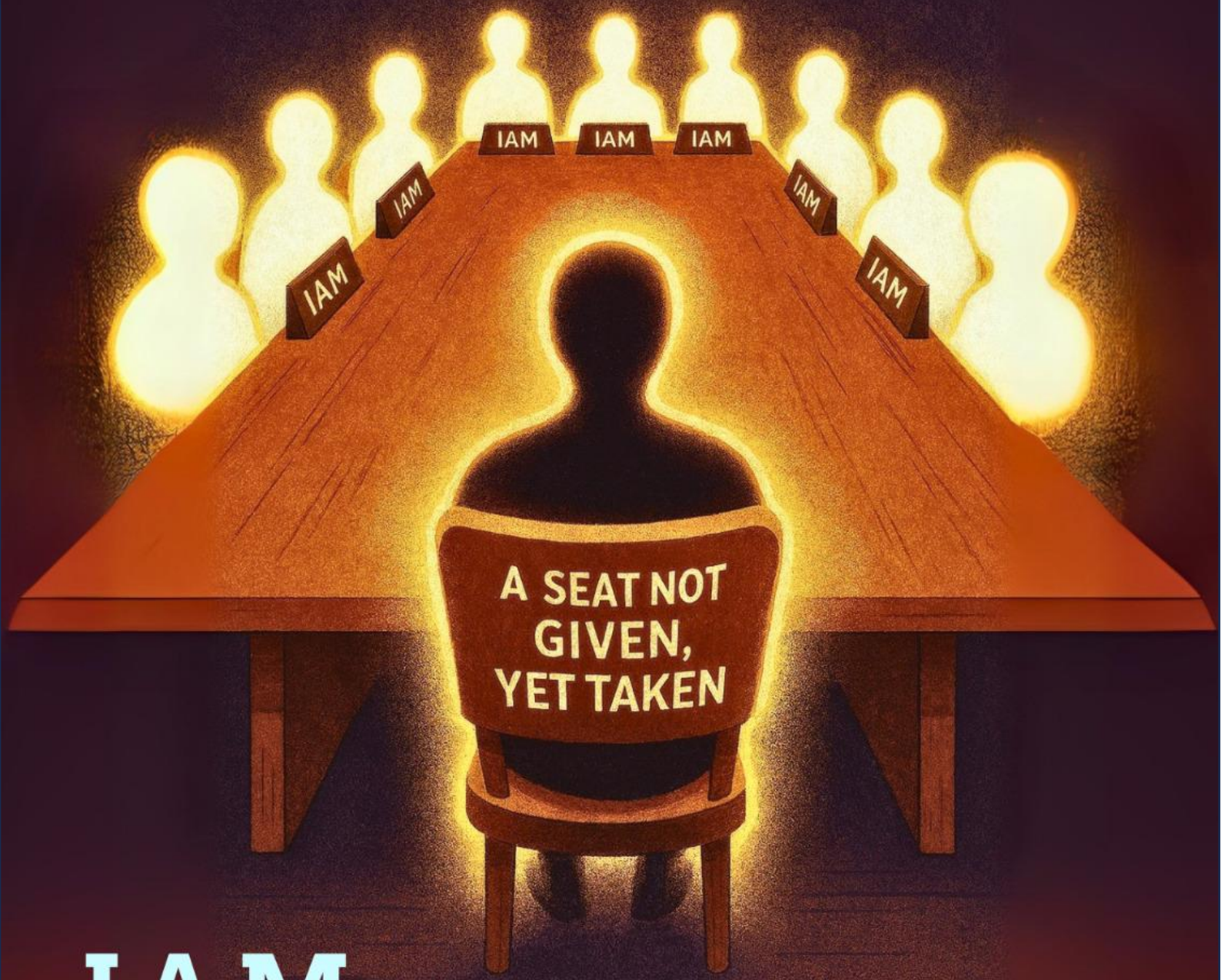
iGNITE Technologies

AWS



IAM

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ABUSE

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Contents

Introduction

Identity and Access Management (IAM) is the foundation of security in every cloud platform. Misconfigurations or over-privileged identities are among the most common causes of cloud breaches, making IAM a prime target for both attackers and defenders.

This hands-on lab demonstrates how a low-privileged IAM user can create console login profiles for other users that can be abused to escalate to full account admin.

About IAM: CreateLoginProfile

CreateLoginProfile in AWS IAM is the API action that **creates a password (login profile) for an IAM user so they can sign in to the AWS Management Console**.

You can use the AWS CLI, the AWS API, or the **Users** page in the IAM console to create a password for any IAM user.

Lab Setup and Prerequisites

1. An AWS Account
2. VM Kali Linux

If you are new to AWS platform, it is recommended to go through the AWS Lab setup here.

Part 1: IAM Lab Setup

Here are the instructions for setting up the environment. We will access the AWS console and configure the AWS Command Line Interface (CLI).

Users:

Igt_sanjeet : Low privileged user with risky permissions attached

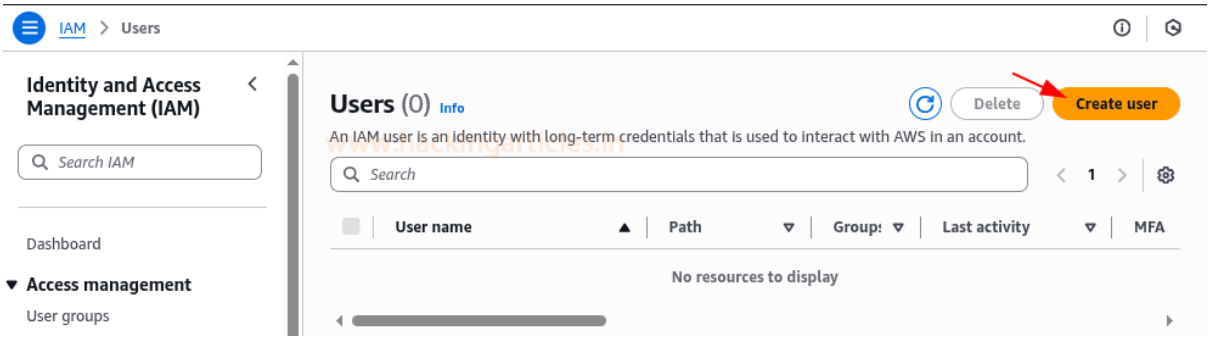
Igt_admin : High privileged user with admin access

Policy name:

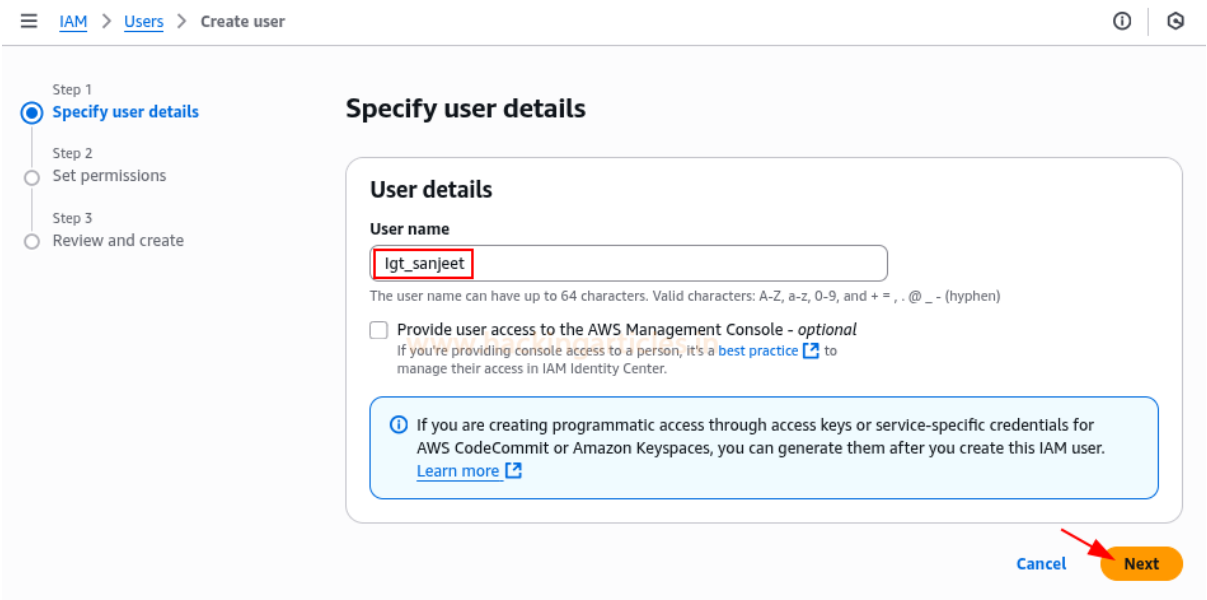
Igt_LoginProfile-PrivEsc

Provisioning a Low-Privileged IAM User

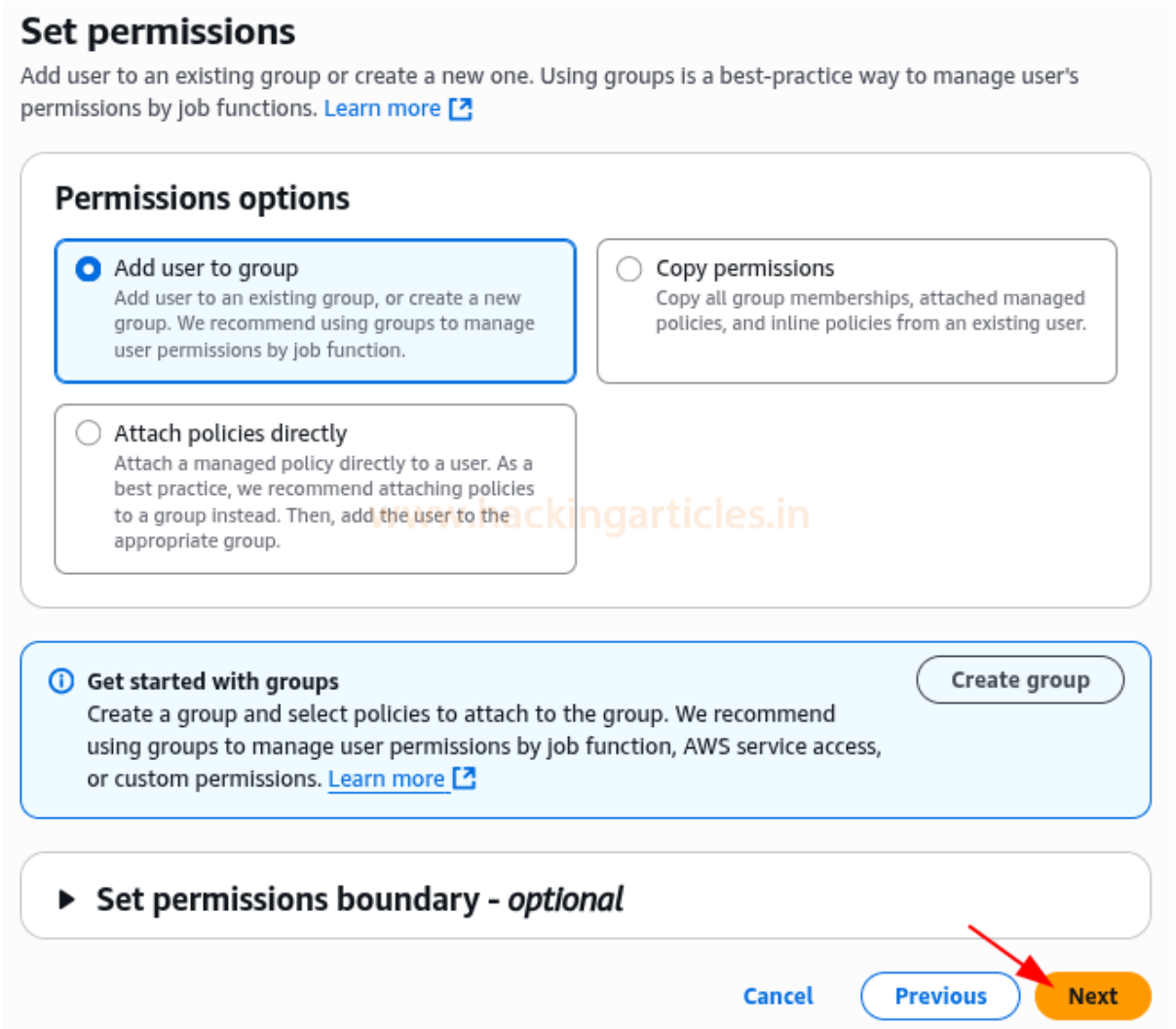
- Navigate to **IAM > Users**, then click **Create user**to set up a new IAM identity.



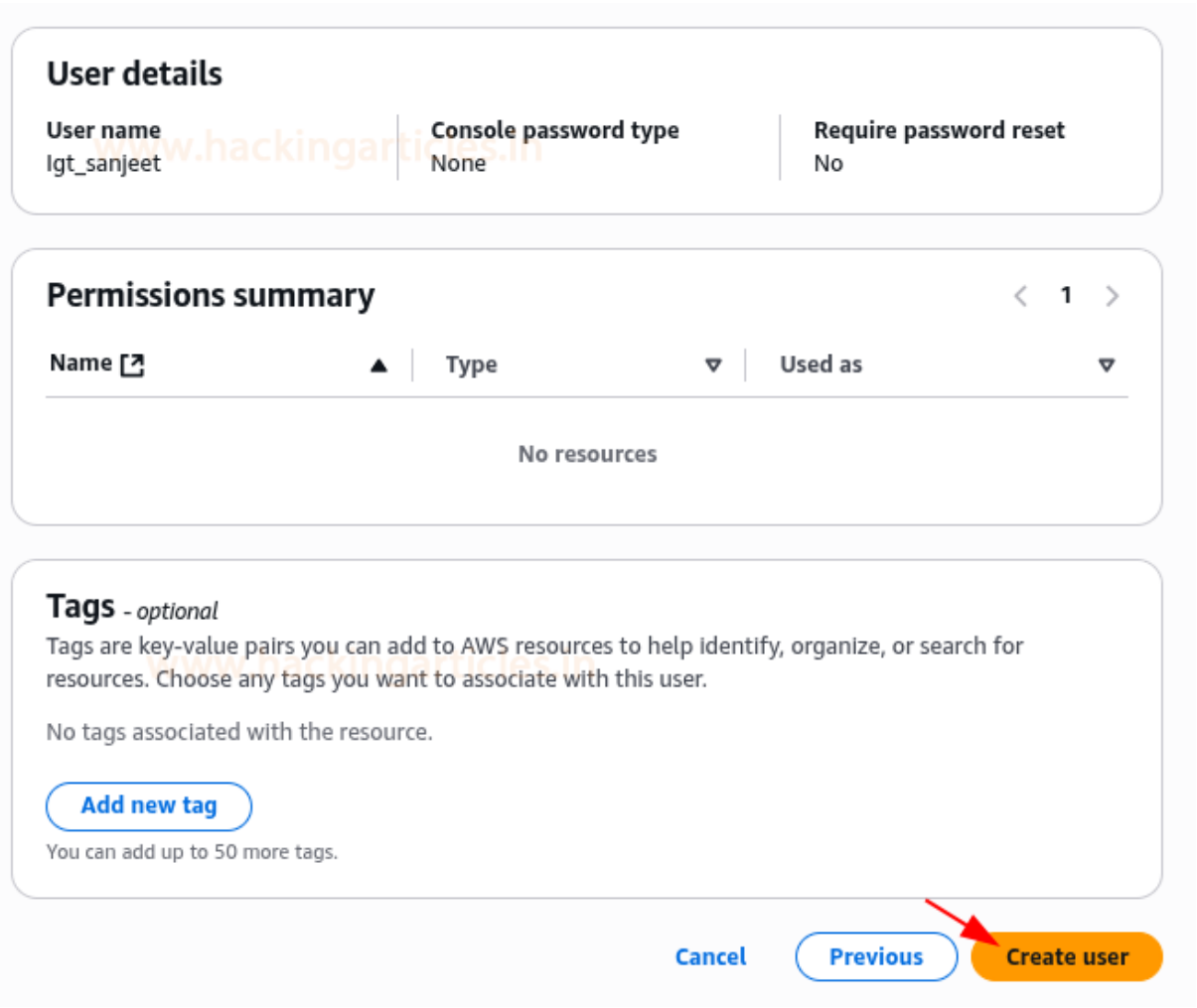
- Create the user a **Username**(e.g. lgt_sanjeet) and press **Next** to **set permission.**



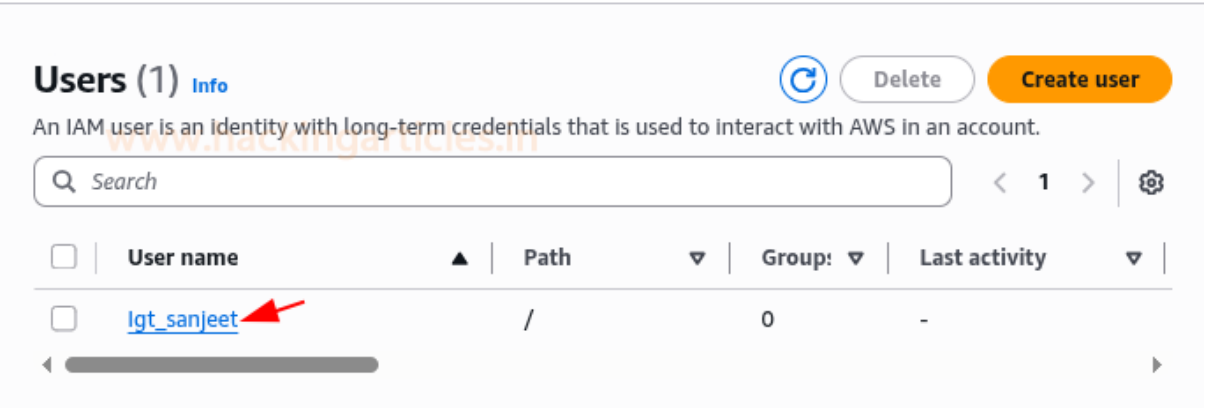
- Set permission to configure lgt_sanjeet user's permissions as **Add user to group**from the Permissions options, press Next



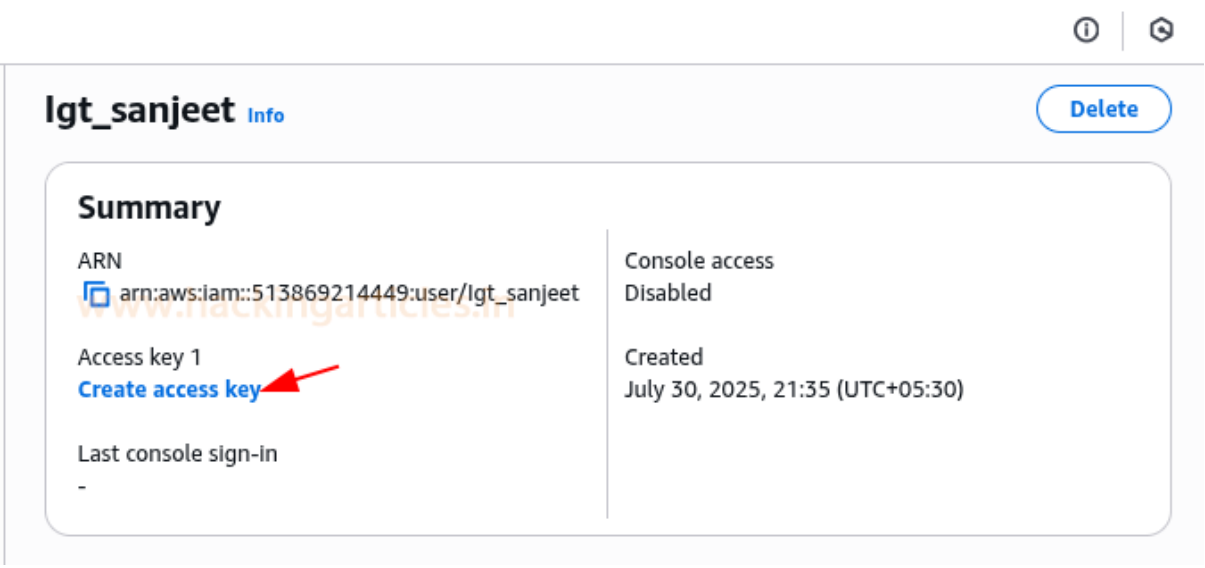
- Create user as show



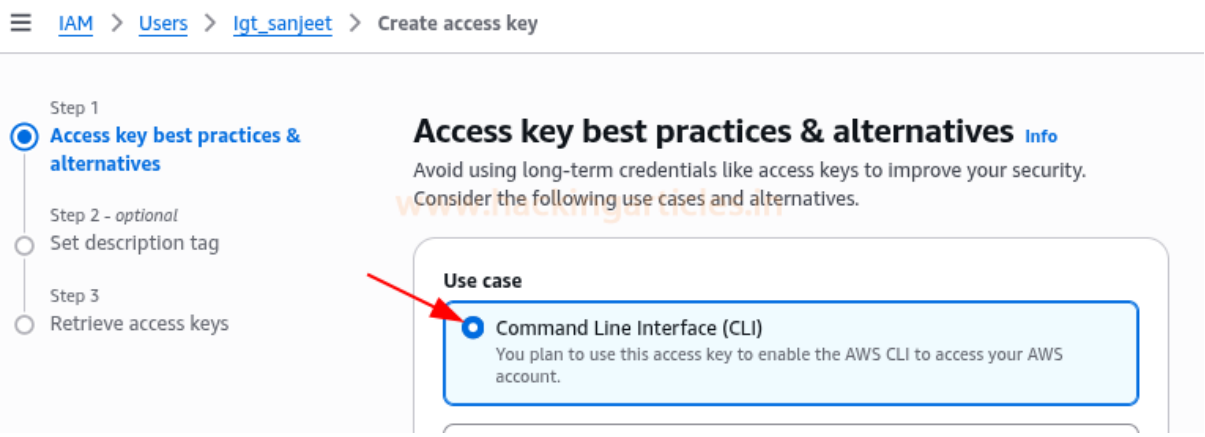
- Click on the username i.e. lgt_sanjeet



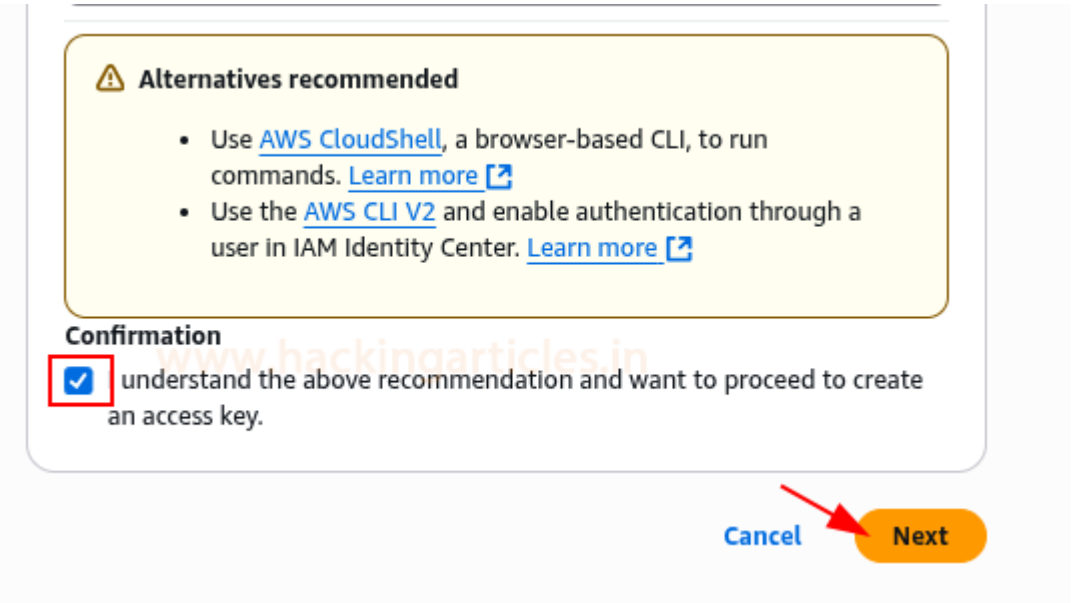
- **Create access key** for the user.



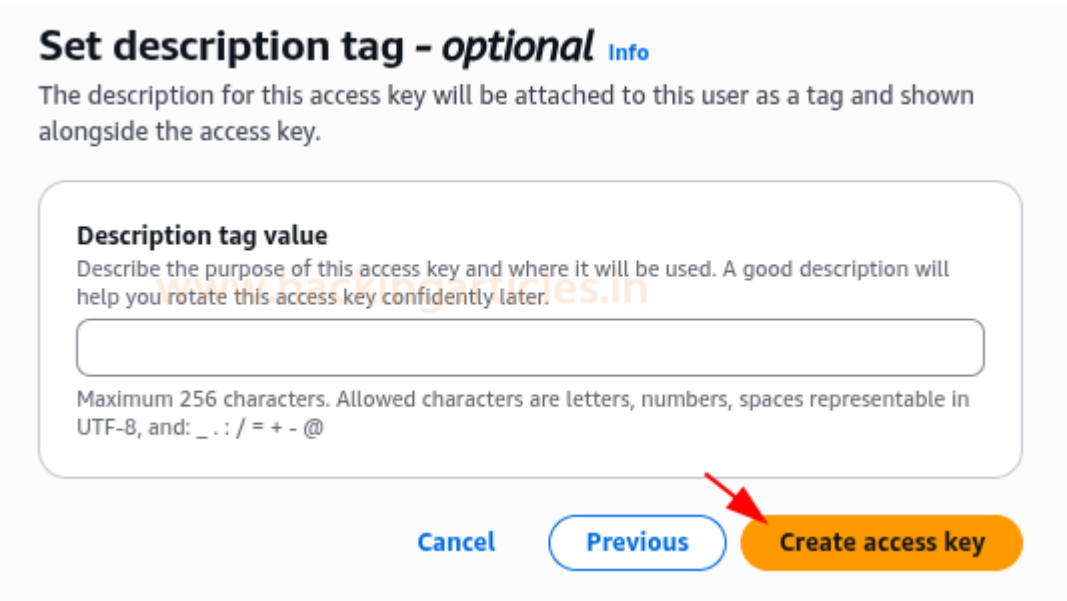
- Select **"Command Line Interface (CLI)"**as the use case.



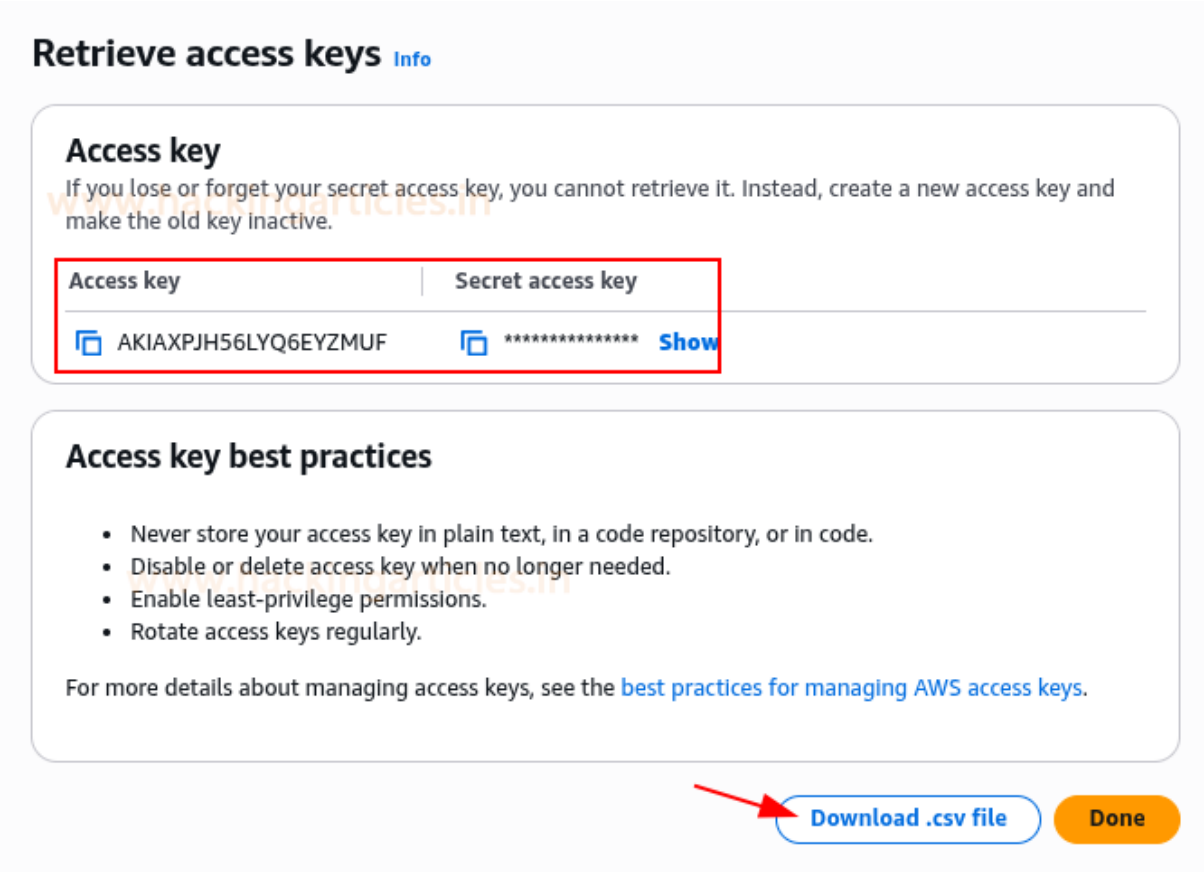
- Check the box as shown and proceed.



- Click **Create access key**



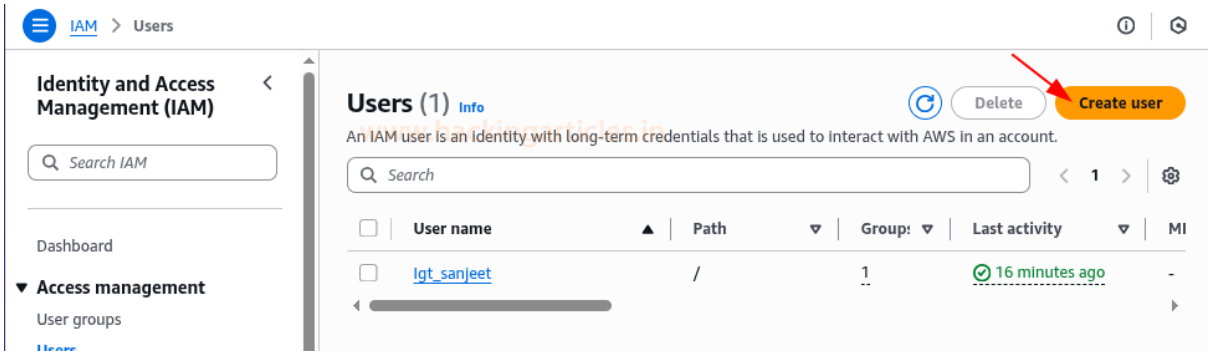
- Now **download the .csv file containing** the Access Key ID and Secret Access Key. **Keep these credentials secure.**



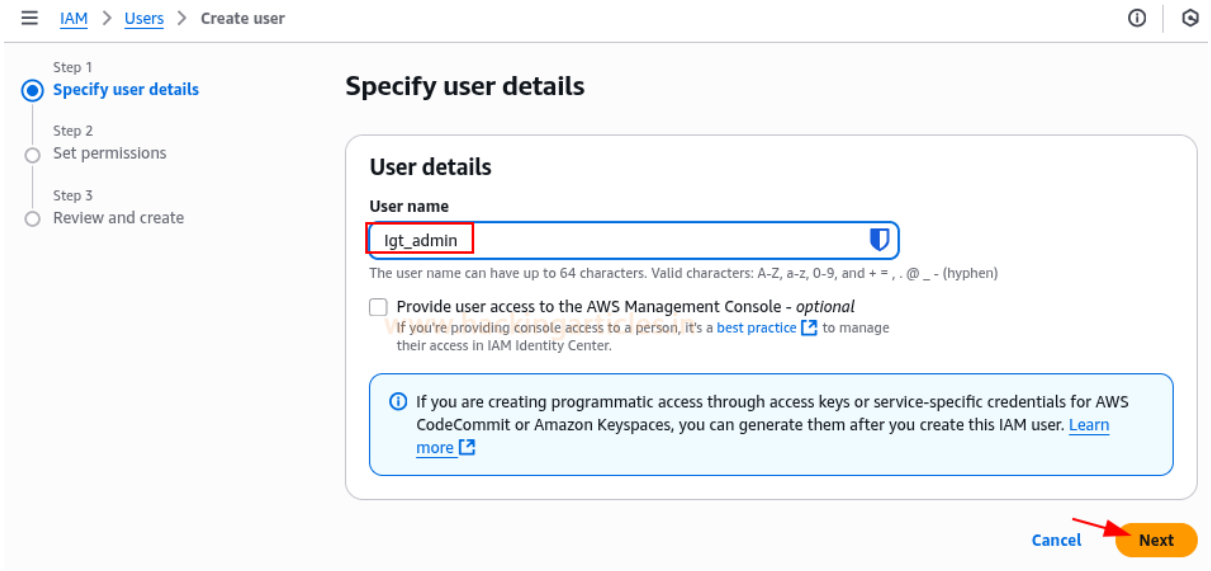
Provisioning a High-Privileged IAM User

Then, create a powerful IAM user. This user embodies the elevated permissions that **lgt_sanjeet** (low-privileged user) will temporarily gain during our demonstration.

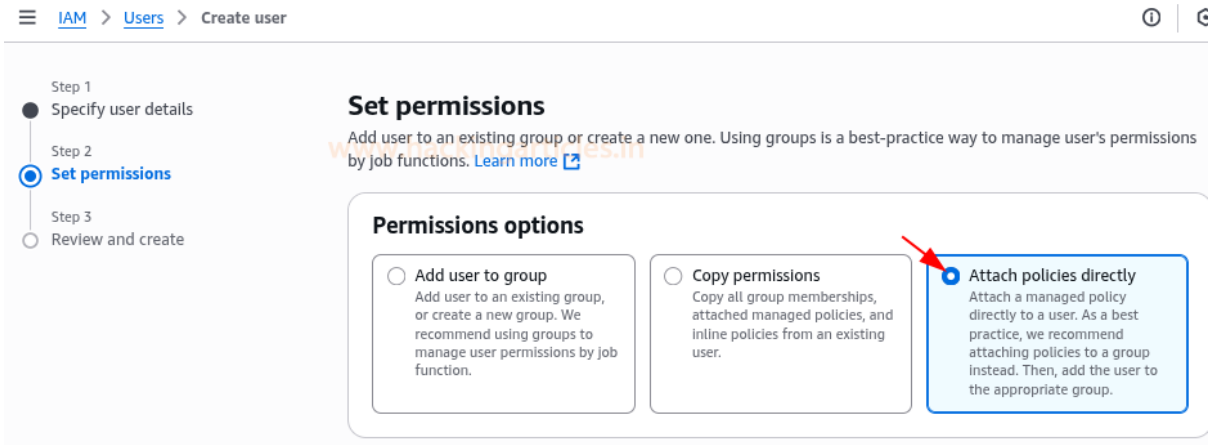
- Navigate to **IAM > Users**, then click **Create user to** set up a new IAM identity



- Give details as **lgt_admin** as username, click **Next**

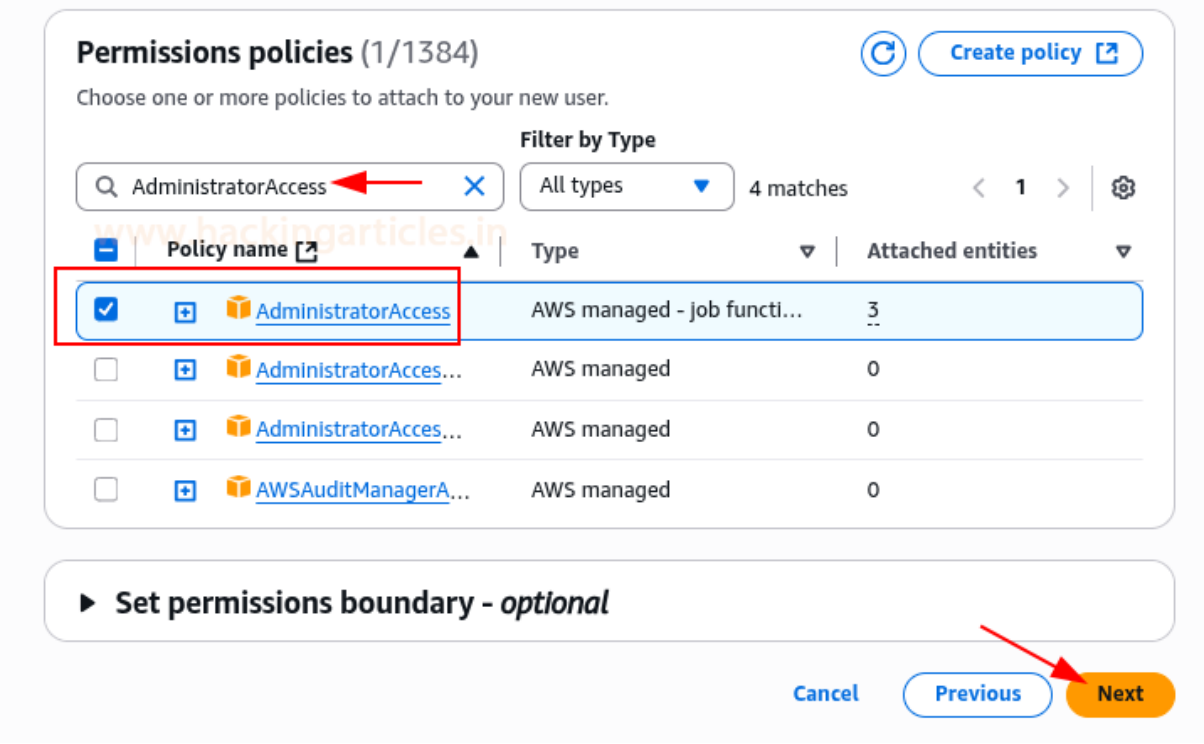


- Then, to **Set permissions,** select **Attach policies directly**

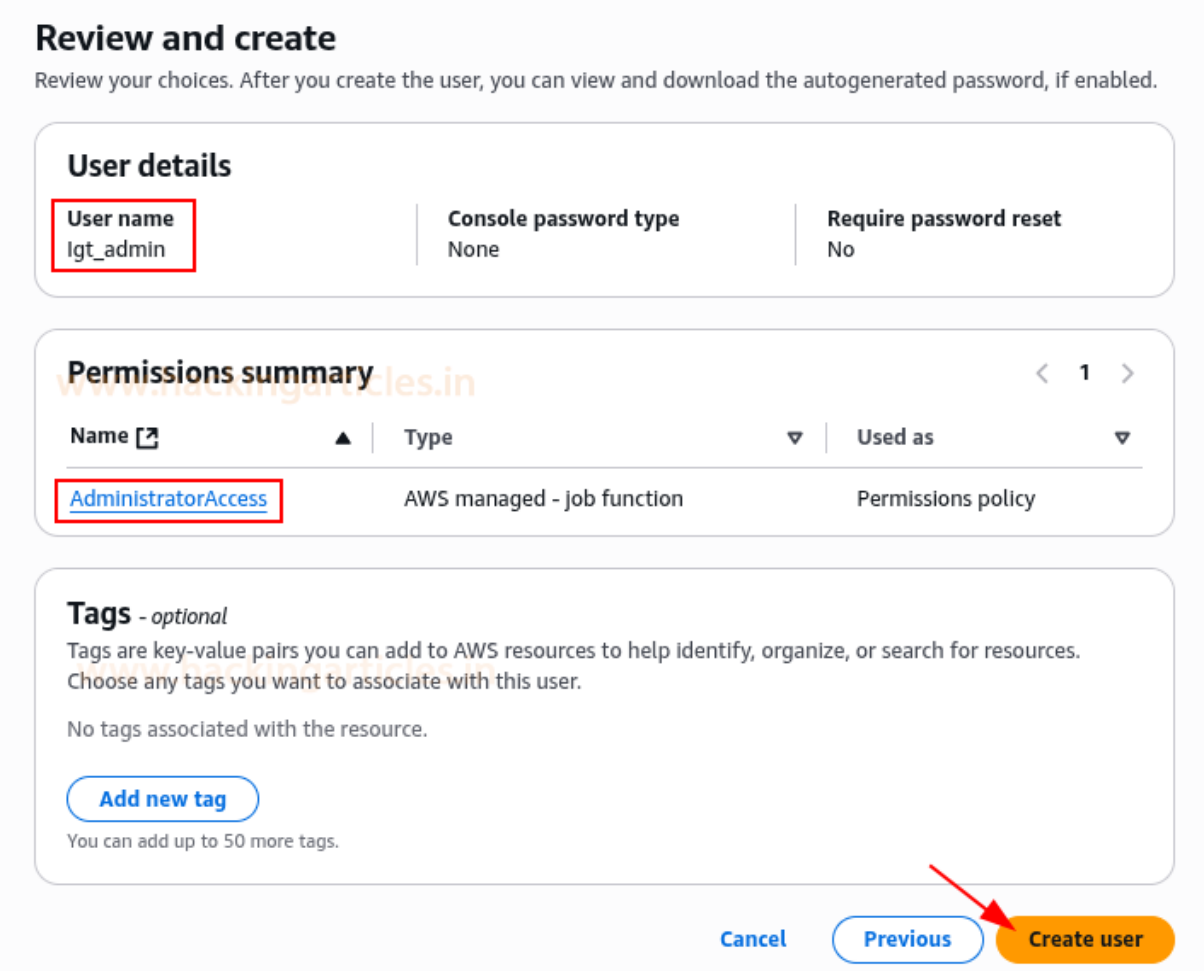


- **On Permissions policies, s**earch and select **"AdministratorAccess"**. This policy grants comprehensive control over virtually all AWS services and resources, making it our "high-privileged" target for the lab.

Click **Next**

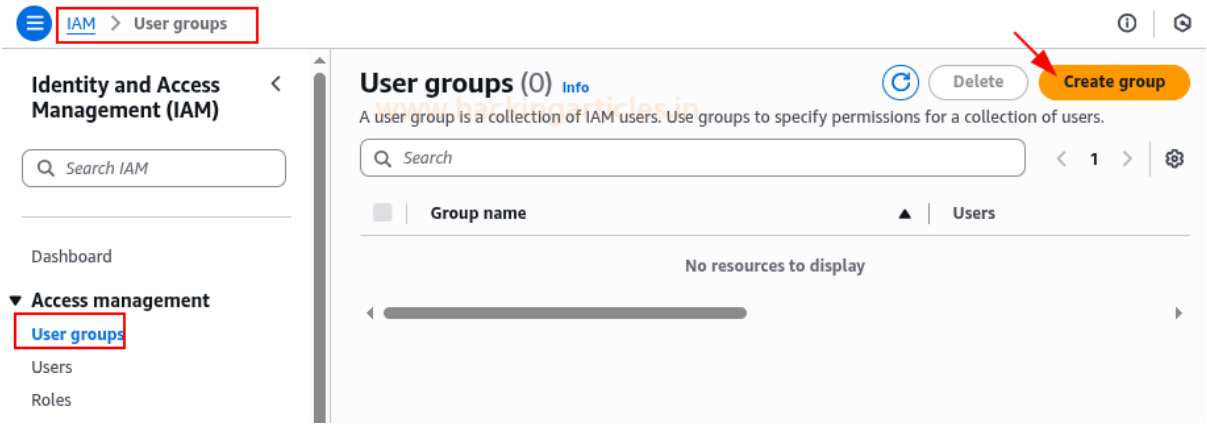


- Create user **lgt_admin**

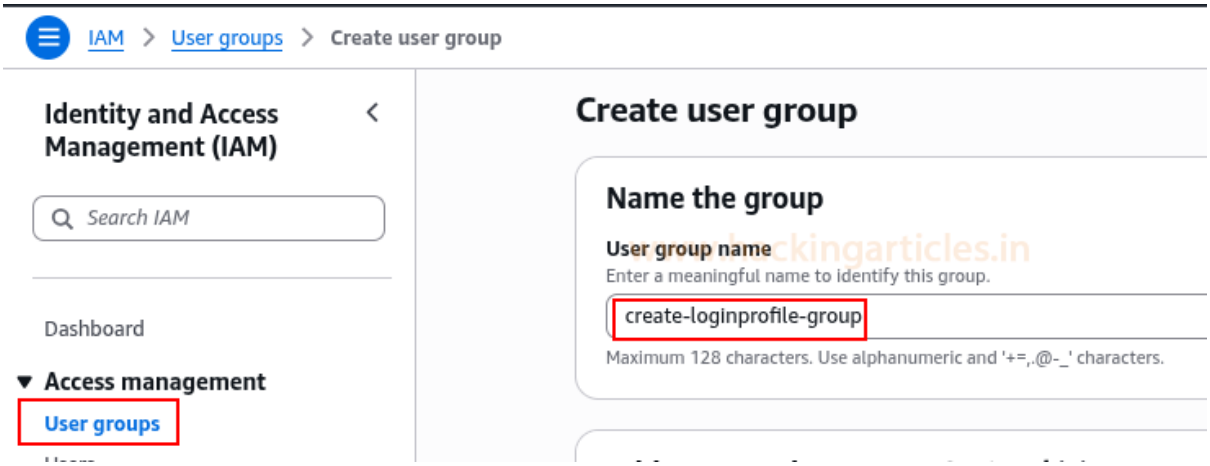


Provisioning a User Group with CreateLoginProfile policy

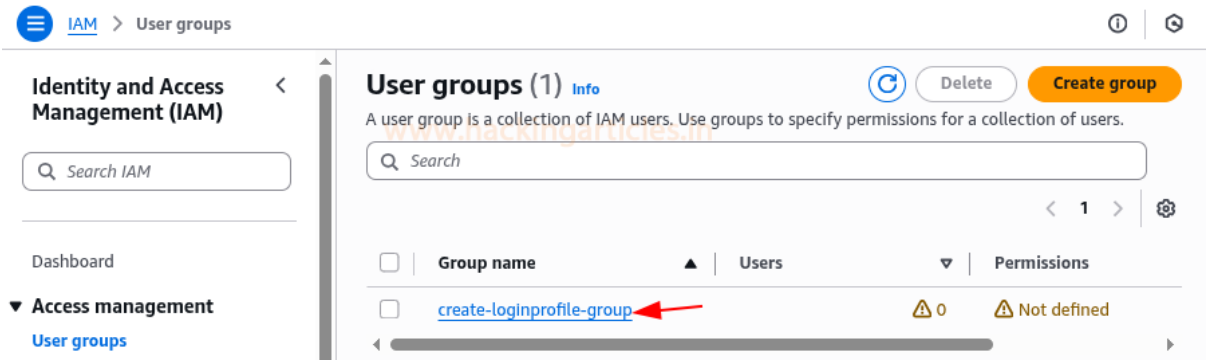
- Firstly, go to **IAM > User groups > Create group.**



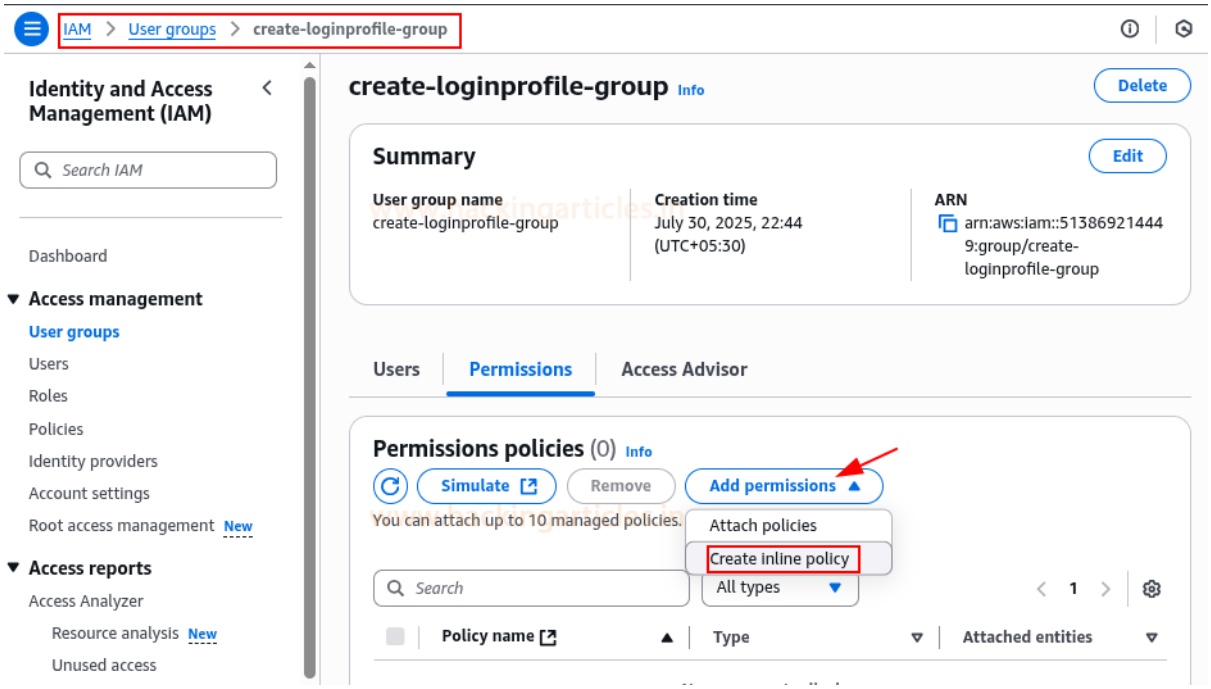
- Add details like the group name as **create-loginprofile-group**



- After creating the group, select its name

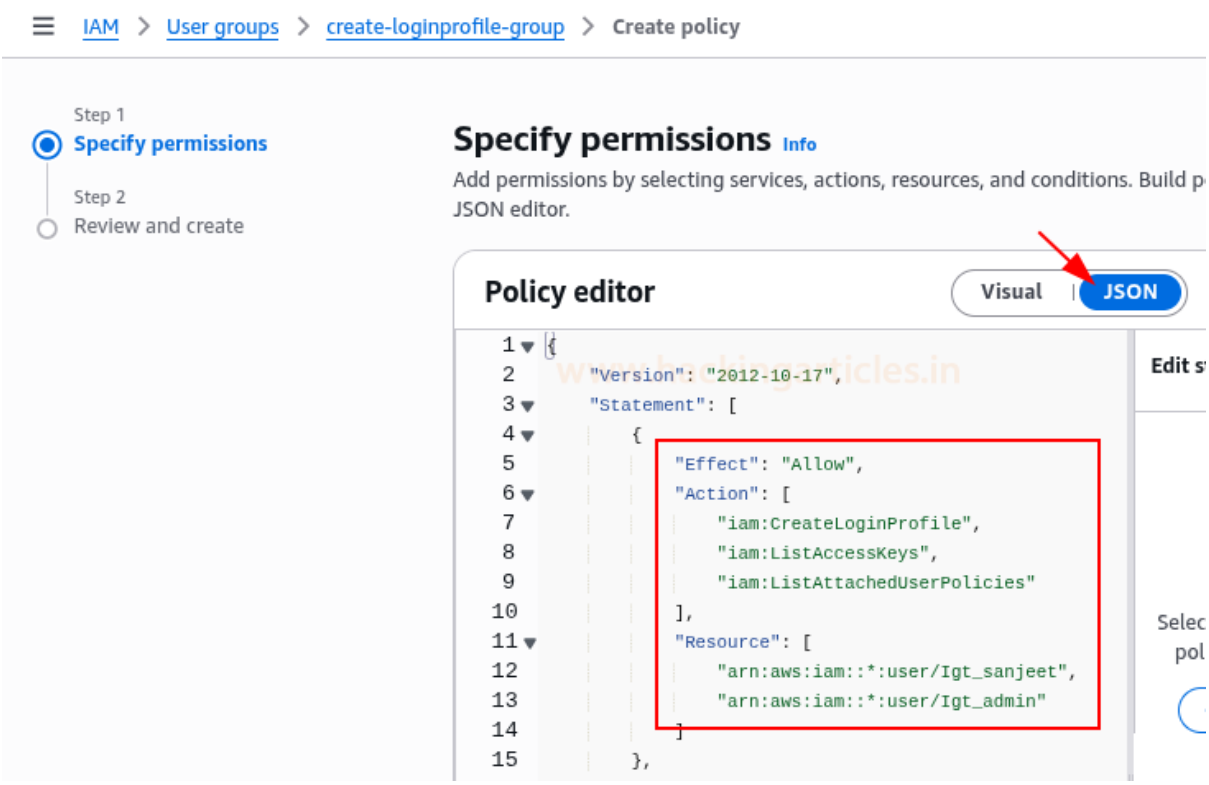


- Click **Add permissions → Create inline policy** to define and attach a custom policy directly to the create-loginprofile-group.



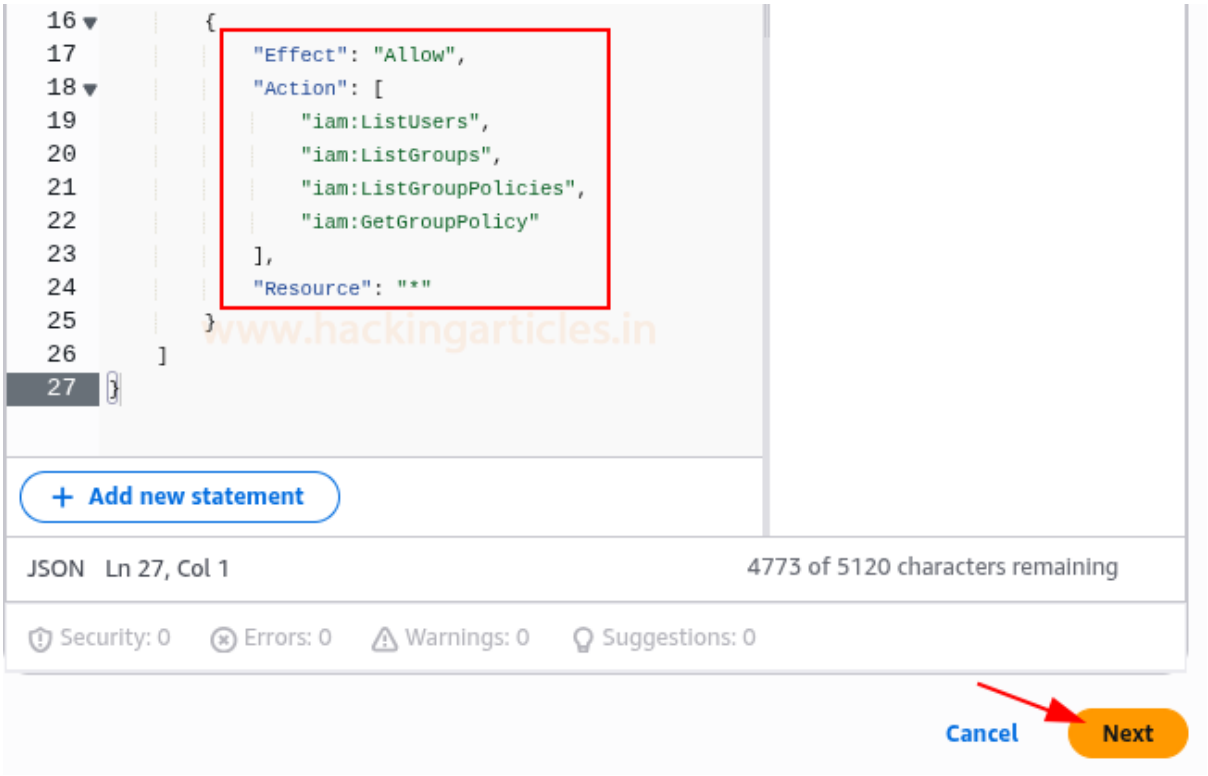
- Specify permissions on the Policy Editor. Write an [inline policy] which created for a single IAM identity (user, group, or role) and later it will be used as an **escalation path.**
    - **iam:CreateLoginProfile** → lets you set a console password for an IAM user so they can log in to the AWS Management Console.
    - **iam:ListAccessKeys** → lets you view the access keys that exist for a specific IAM user.
    - **iam:ListAttachedUserPolicies** → shows which managed policies are attached to a user.
    - **iam:ListUsers** → lists all IAM users in the account.
    - **iam:ListGroups** → lists all IAM groups in the account.
    - **iam:ListGroupPolicies** → lists the names of inline policies embedded in a group.
    - **iam:GetGroupPolicy** → retrieves the actual JSON document of an inline group policy.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "iam:CreateLoginProfile",
        "iam:ListAccessKeys",
        "iam:ListAttachedUserPolicies"
      ],
      "Resource": [
        "arn:aws:iam::*:user/Igt_sanjeet",
        "arn:aws:iam::*:user/Igt_admin"
      ]
    },
    {
      "Effect": "Allow",
      "Action": [
        "iam:ListUsers",
        "iam:ListGroups",
        "iam:ListGroupPolicies",
        "iam:GetGroupPolicy"
      ],
      "Resource": "*"
    }
  ]
}
```

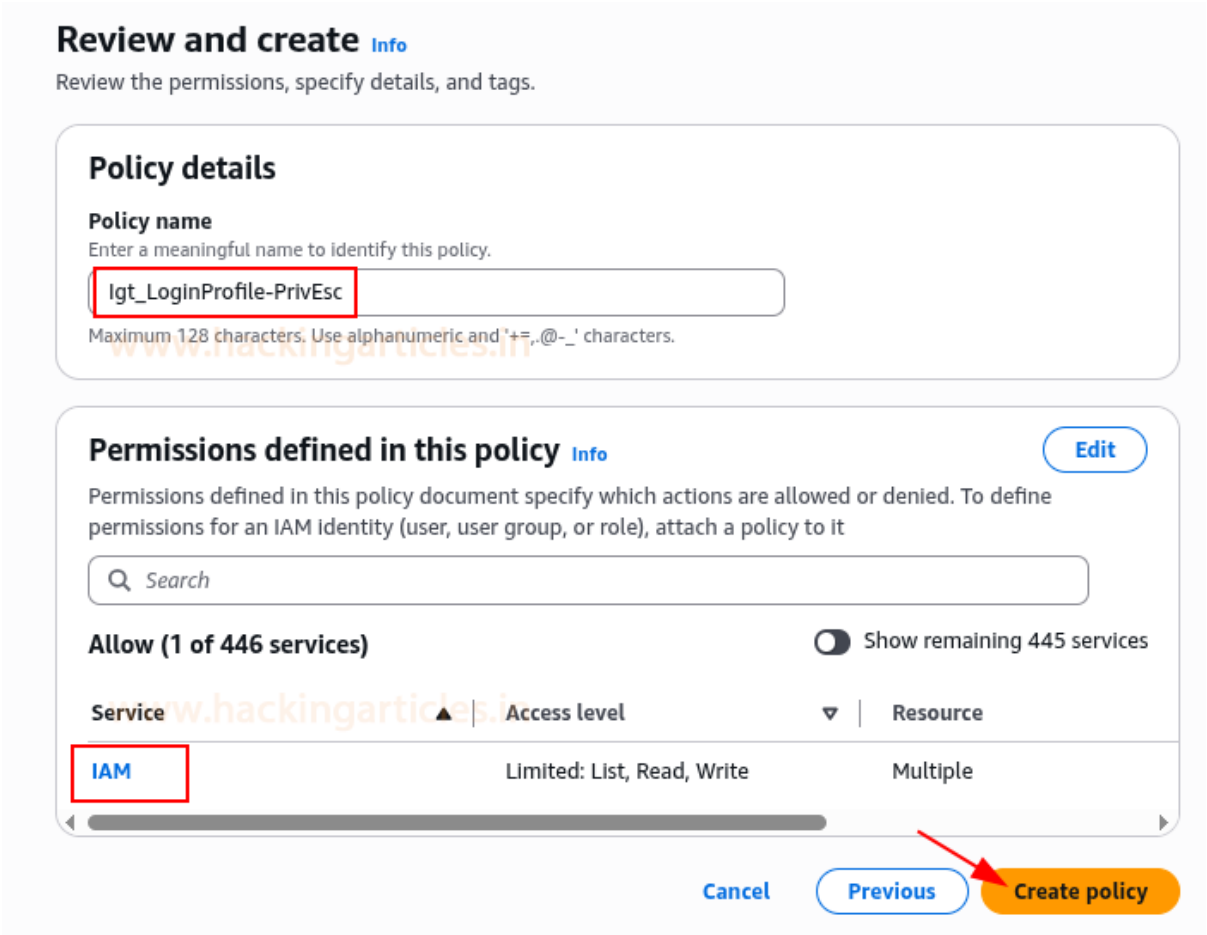


This is how the policy appears on Policy editor in JSON format.

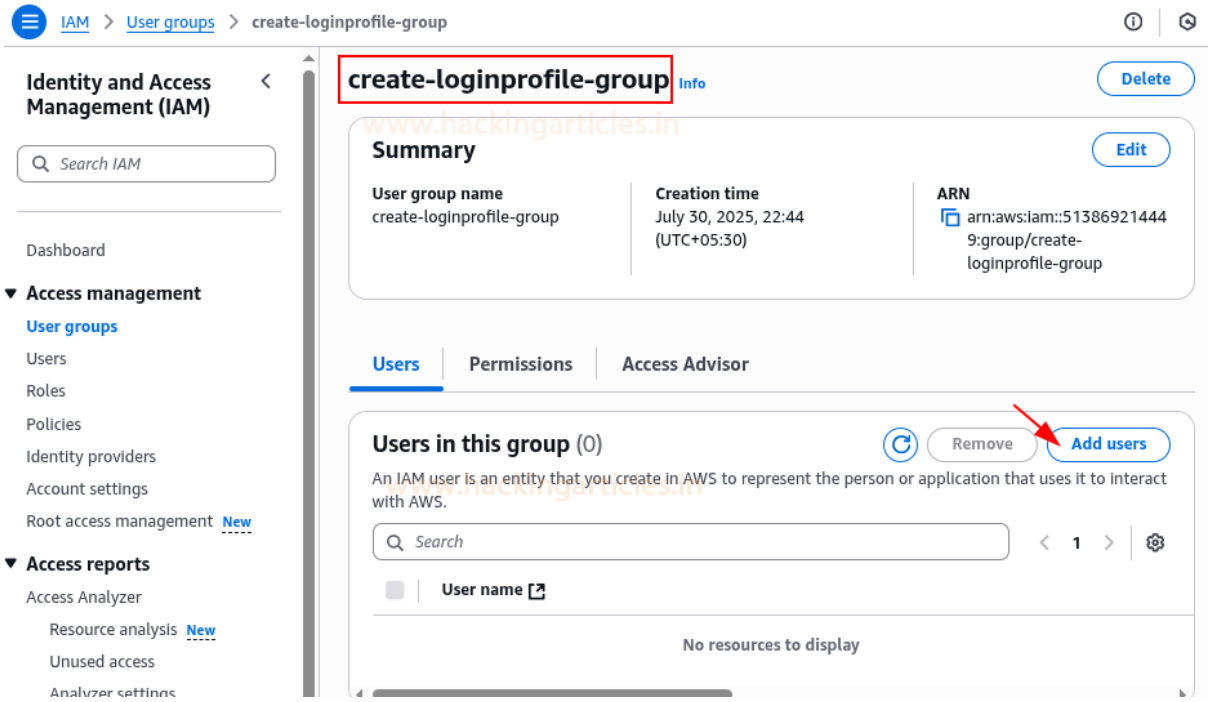
- Click **Next**



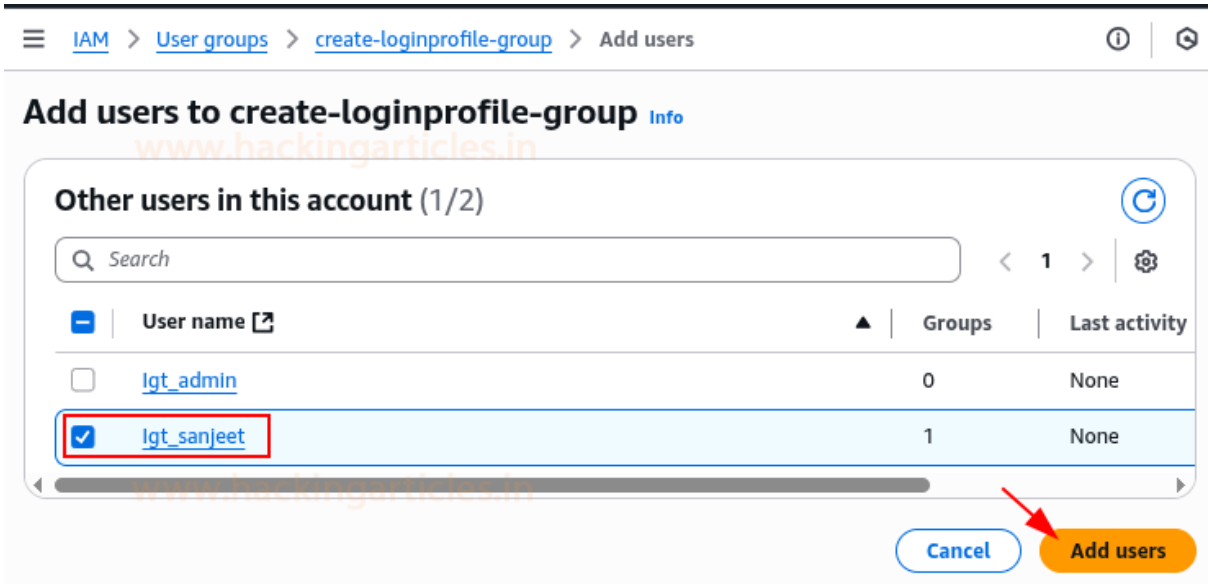
- Give policy details such as its name **Igt_LoginProfile-PrivEsc** and click **create policy**



- Now, select the group name on **users groups** and click the **Add users**



- Select user **lgt_sanjeet and** then he became the part of the group **create-loginprofile-group**



Part 2: Enumeration and Exploitation

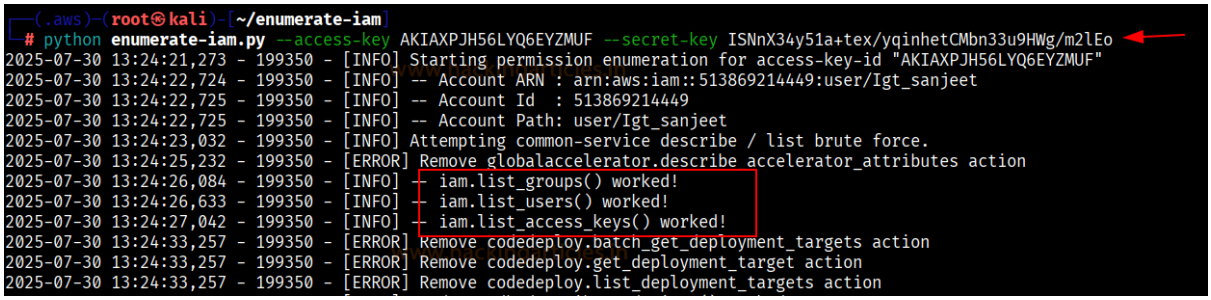
Use Case Scenario for CreateLoginProfile

In real world scenarios, it's for onboarding, but in a security lab it's to demonstrate how misconfigured permissions can lead to privilege escalation.

Enumerating profile with Python script

```
python enumerate-iam.py --access-key AKI********** --secret-key ISN**********
```

This Python enumeration confirmed that the low-privileged user lgt_sanjeet can list IAM users, groups, and access keys, providing the necessary visibility to identify and escalate into higher-privileged accounts.



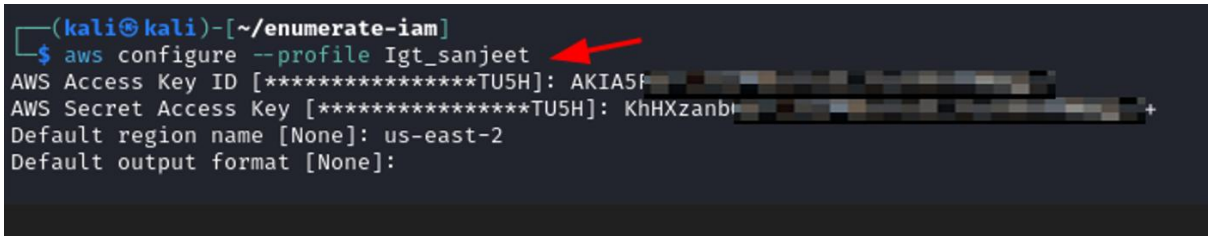
Set up & Enumeration of profile using AWS CLI

Now set up the AWS CLI with the IAM user's credentials, to directly interact with the AWS environment from Kali machine.

- Set up a profile named **Igt_sanjeet** in AWS CLI.

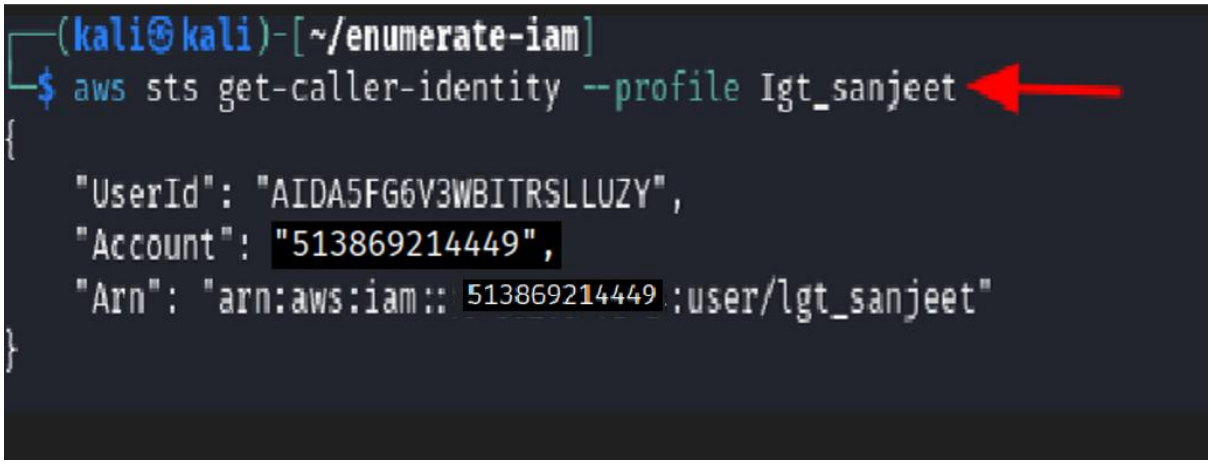
```
aws configure --profile Igt_sanjeet
```

Assigning the **access key ID**, **secret access key**, and default **region** for that profile.



- The following command will retrieve the identity information (UserId, Account ID, ARN) for the currently authenticated user via that profile.

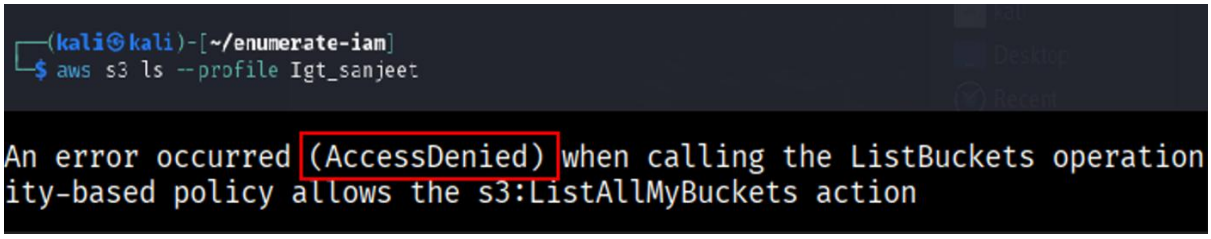
```
aws sts get-caller-identity --profile Igt_sanjeet
```



- Here, we will try to run the command.

```
aws s3 ls --profile Igt_sanjeet
```

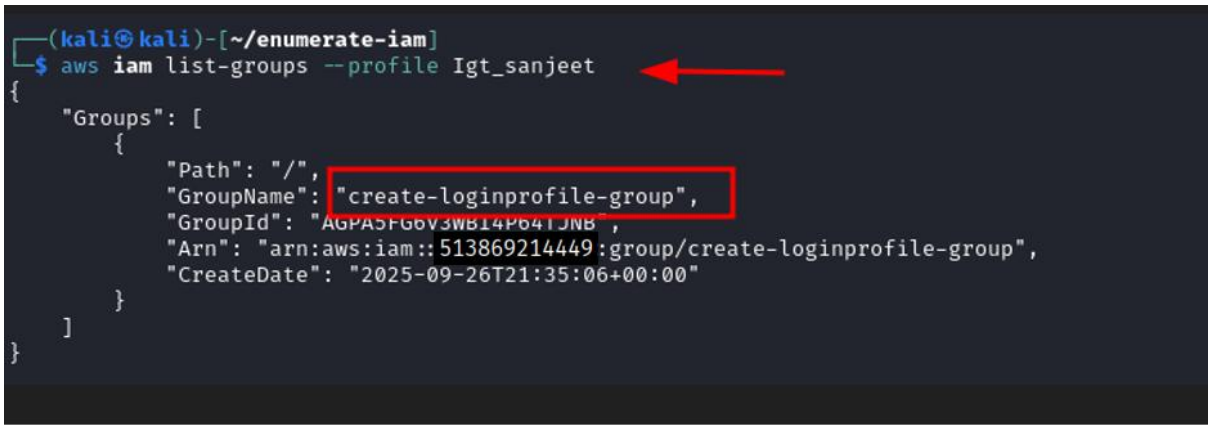
The action will be denied as no identity-based policy can do it.



- Lists **all IAM groups in the account** that the Igt_sanjeet profile has permission to see.

It does **not** filter to only groups that Igt_sanjeet belongs to, it returns every group in the account (unless blocked by permissions).

```
aws iam list-groups –profile Igt_sanjeet
```

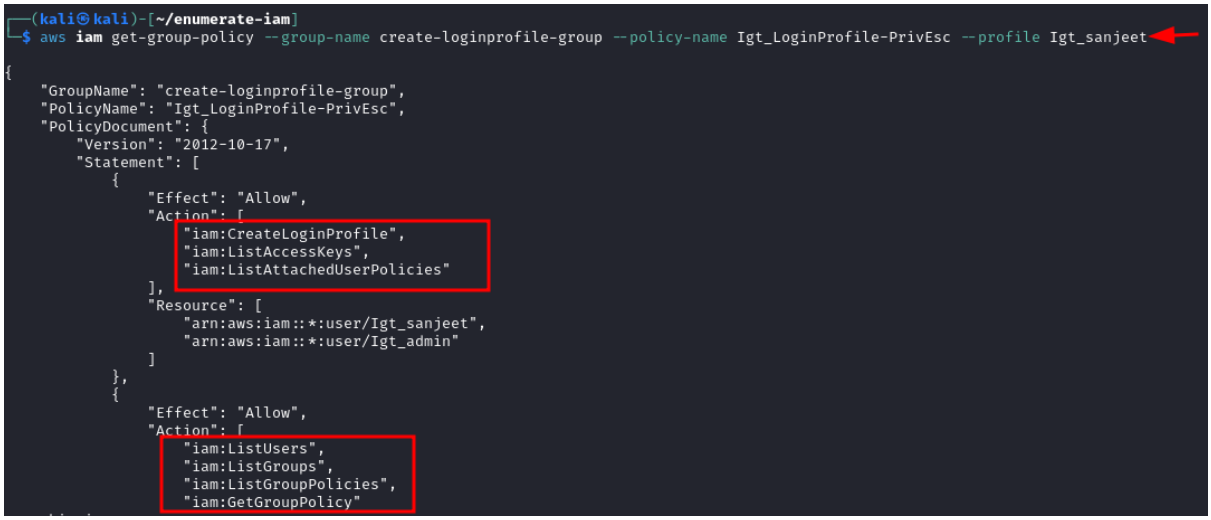


- This command will list the **names of inline policies** attached to the IAM group create-loginprofile-group. Pay attention to the output enclosed in red box.

```
aws iam list-group-policies --group-name create-loginprofile-group --profile
Igt_sanjeet
```

- Now, this command will retrieve and display the **full JSON document** of the inline policy named Igt_LoginProfile-PrivEsc that is attached to the group create-loginprofile-group. Instead of just showing the policy.

```
aws iam get-group-policy --group-name create-loginprofile-group --policy-name
Igt_LoginProfile-PrivEsc --profile Igt_sanjeet
```



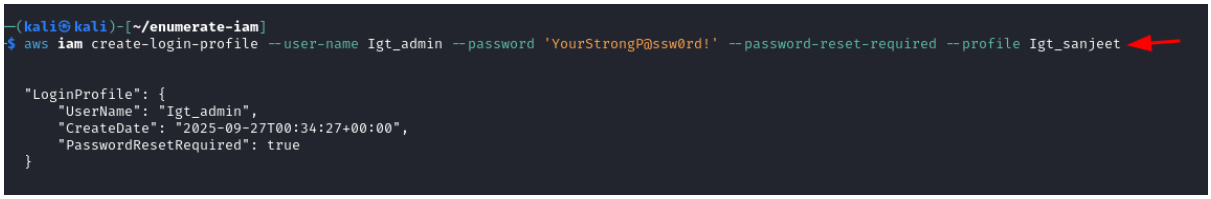
- Running this command will list **all IAM users in the AWS account** that the credentials for the Igt_sanjeet profile have permission to see.

```
aws iam list-users --profile Igt_sanjeet
```

- This command creates a **console login profile** (username + password) for the IAM user Igt_admin.

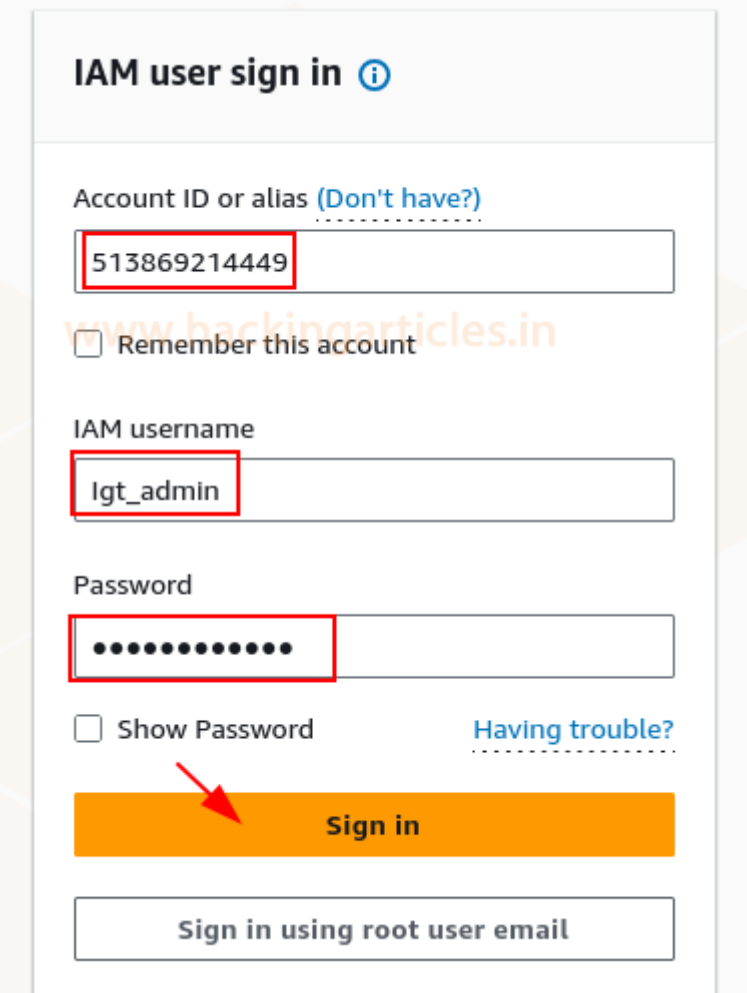
NOTE: Since Igt_admin has the **AdministratorAccess** policy, whoever controls this password can log in to the AWS Console as a full admin, which in a misconfigured environment = **privilege escalation to admin**.

```
aws iam create-login-profile --user-name Igt_admin --password
'YourStrongP@ssw0rd!' --password-reset-required --profile Igt_sanjeet
```

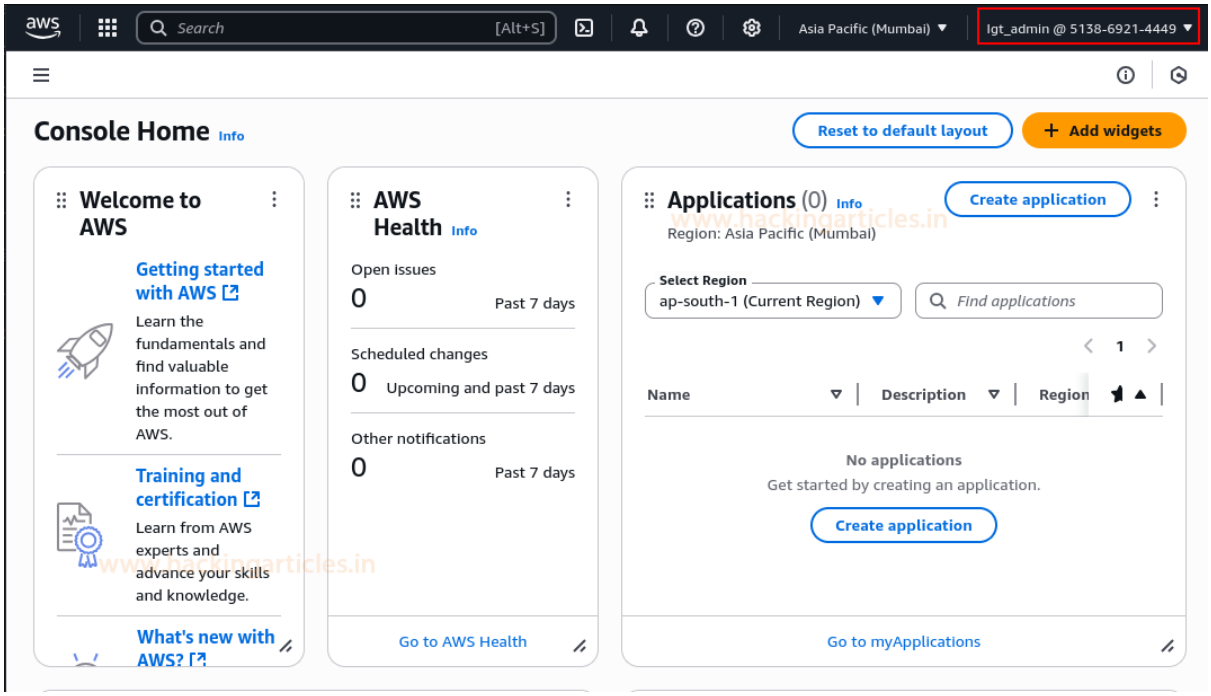


IAM CreateLoginProfile Exploitation

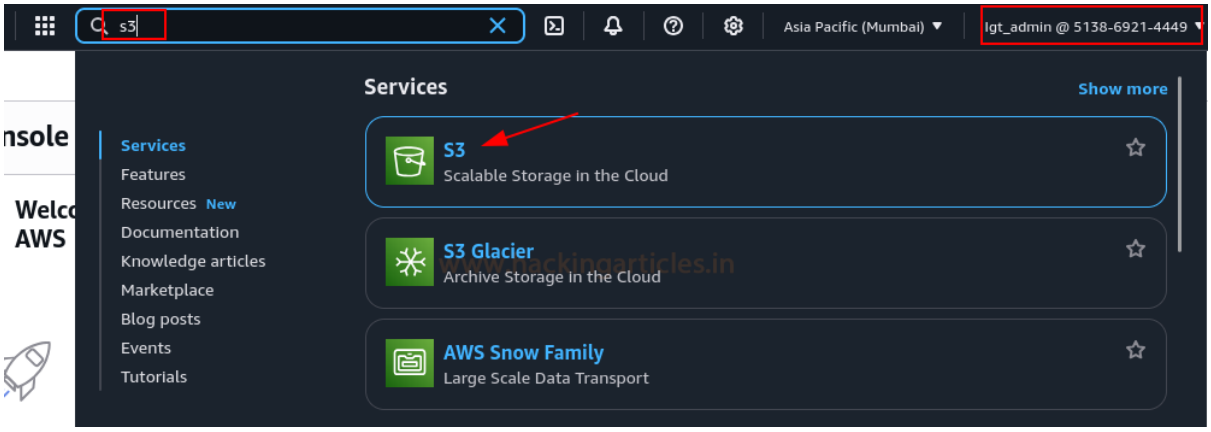
Firstly, use the AWS Console login page with your **account ID**, enter IAM username **lgt_admin**, the password you set with create-login-profile, and click **Sign in**.



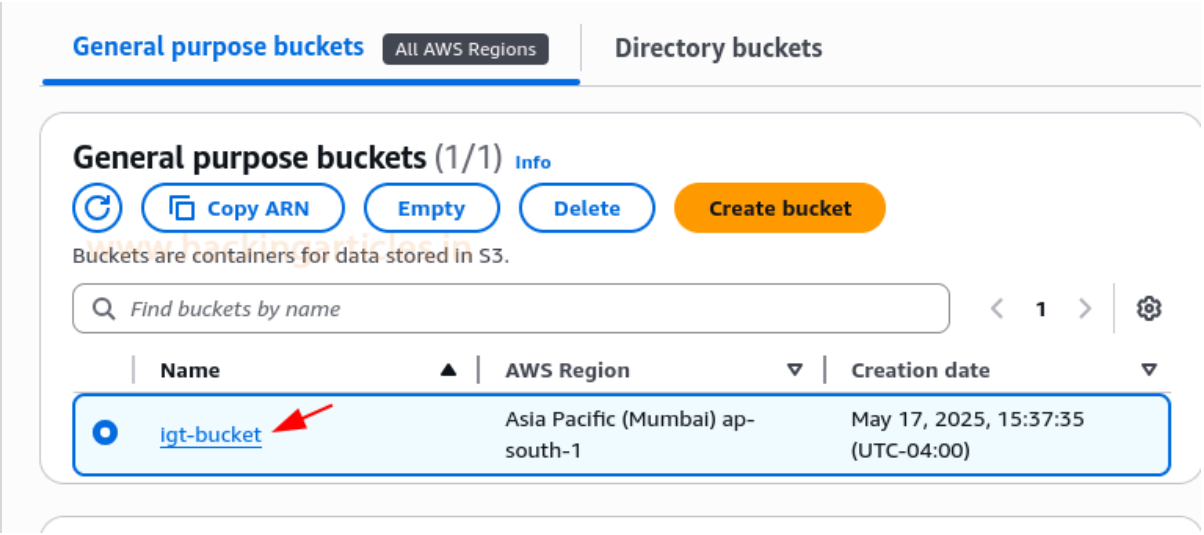
After login, check the console banner, it should show **lgt_admin** with full access. Now, the user has administrator privileges through privilege escalation.



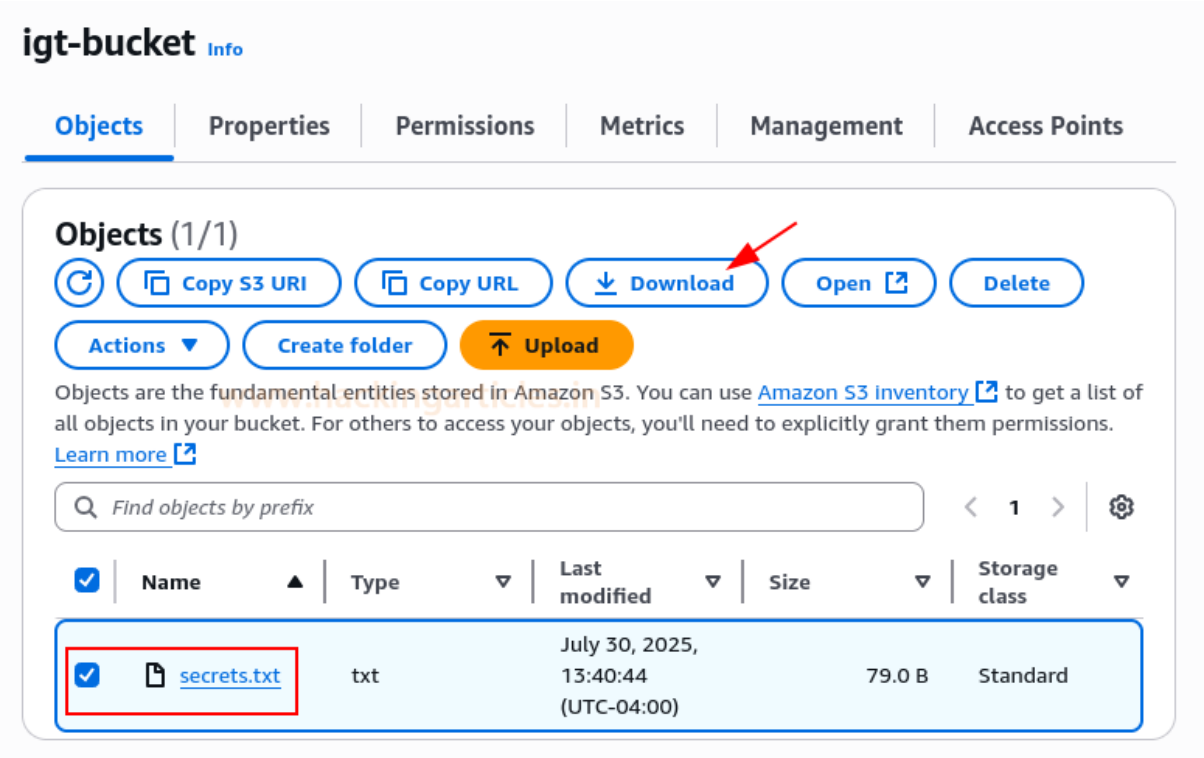
In the Console (top-left search), type s3 and click **S3** — confirm you are signed in as Igt_admin (top-right).



On **General purpose buckets**, select the bucket, named **Igt_bucket**



Then, click your bucket name (Igt-bucket) and here in **objects** you can see a text file **secrets.txt, Download** the file

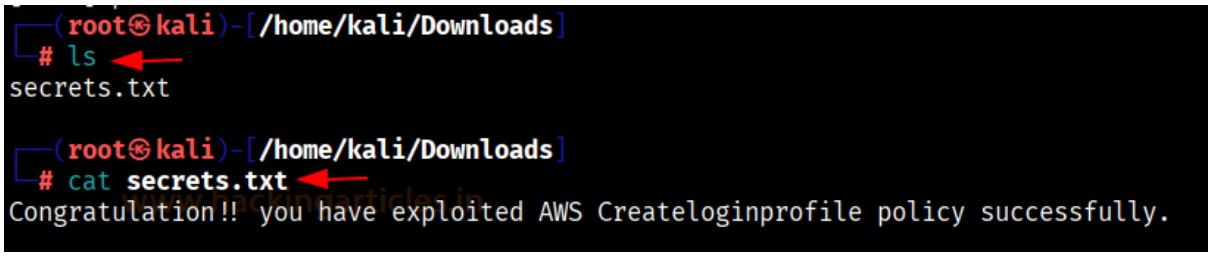


On AWS CLI, use this command to check if it's working, and it’s a success this time.

```
ls secrets.txt
```

Display the contents of file

```
cat secrets.txt
```



Analysis

This lab demonstrates how a seemingly low-privileged IAM user (Igt_sanjeet) abuses a **iam:CreateLoginProfile** permission for the Igt_admin user (who already had the AdministratorAccess policy attached), the attacker gained direct console login as Igt_admin, achieving full account takeover.

Recommendations

- Restrict iam:CreateLoginProfile
  - Only trusted administrators should have this action.
  - Explicitly deny it for all non-admin users.
- Use permissions boundaries
  - Prevent low-privileged accounts from performing privilege escalation actions, even if added groups.
- Limit enumeration rights
- Enable MFA for all admins
- Monitor with CloudTrail
- Apply least privilege

Conclusion

This lab shows how **a single misconfigured IAM permission (CreateLoginProfile) can lead to full account compromise when combined with enumeration rights**. IAM misconfigurations are low-hanging fruit for attackers. Preventive controls, detection, and governance are critical to stop privilege escalation in the cloud.

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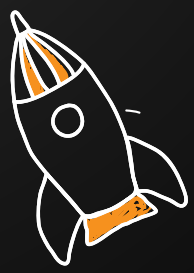

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- Burp Suite Pro
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- Pro Infrastructure VAPT
- CTF
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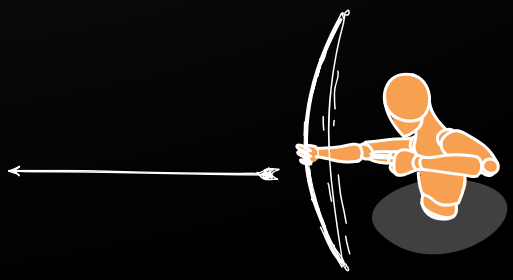
EXPERT



- Red Team Operation
  - APT's - MITRE Attack Tactics
  - Active Directory Attack
  - MSSQL Security Assessment
- Privilege Escalation
  - Windows
  - Linux