AWS-DEVOPS

DATE	:	17.01.2025
DT/NT	:	DT
LESSON	:	AWS
SUBJECT	:	IAM
BATCH	:	B 303

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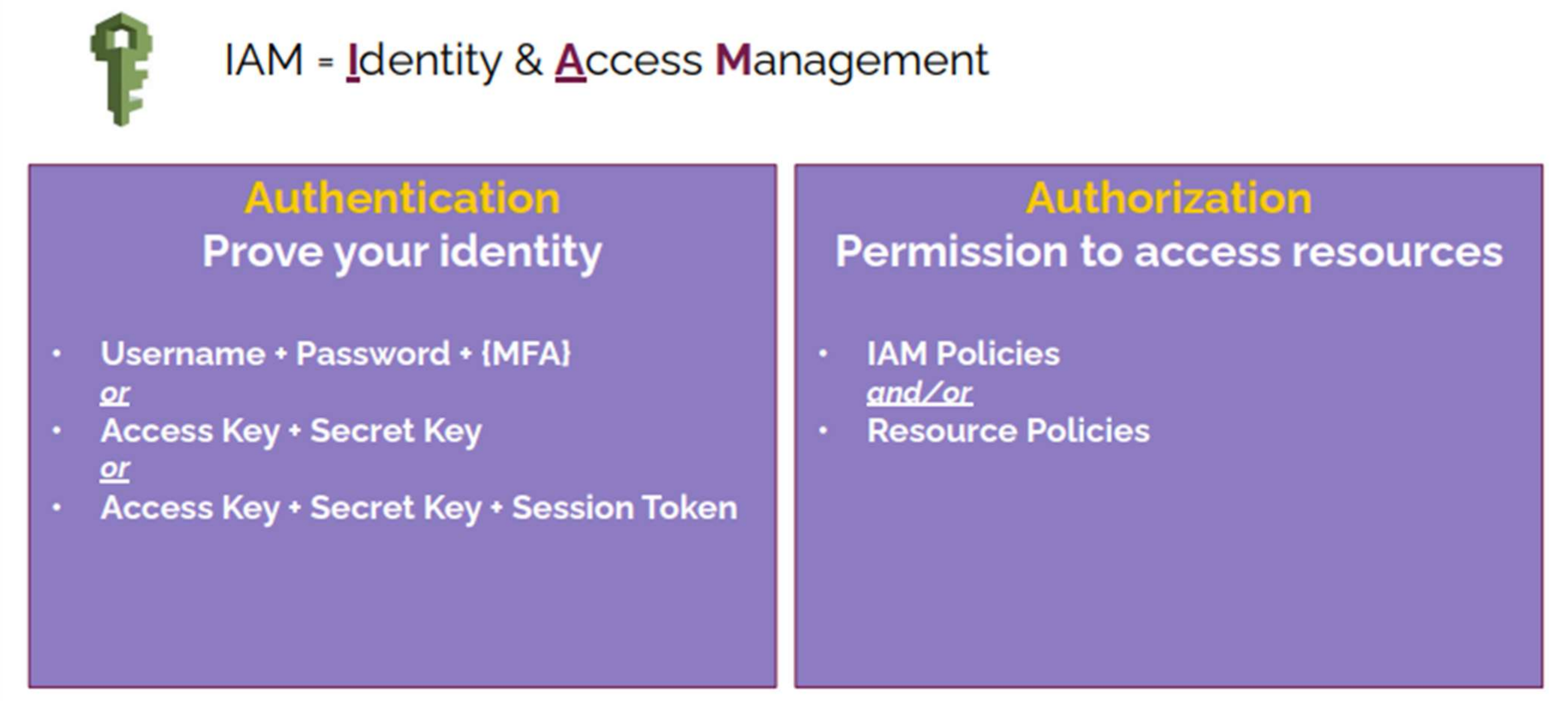
Introduction to IAM

What is IAM?



IAM = Identity & Access Management

Authentication

Prove your identity

- Username + Password + {MFA}

  or
- Access Key + Secret Key

  or
- Access Key + Secret Key + Session Token

Authorization

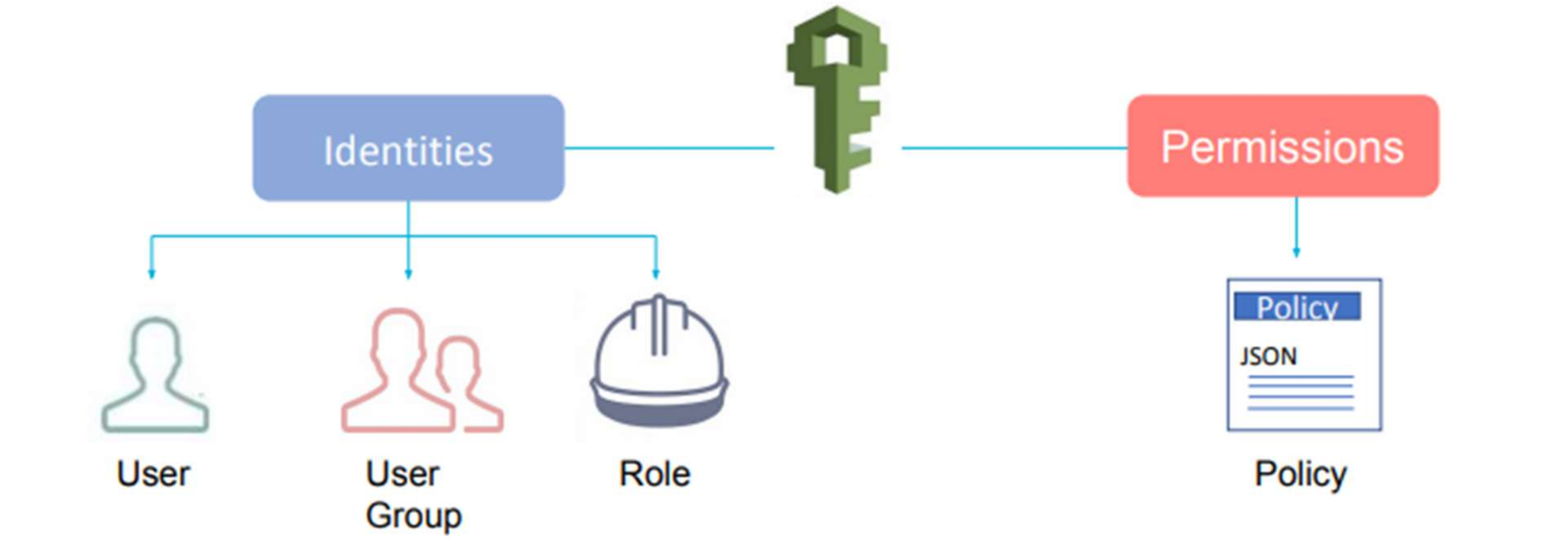
Permission to access resources

- IAM Policies

  and/or
- Resource Policies

Introduction to IAM

Categorizing IAM Components

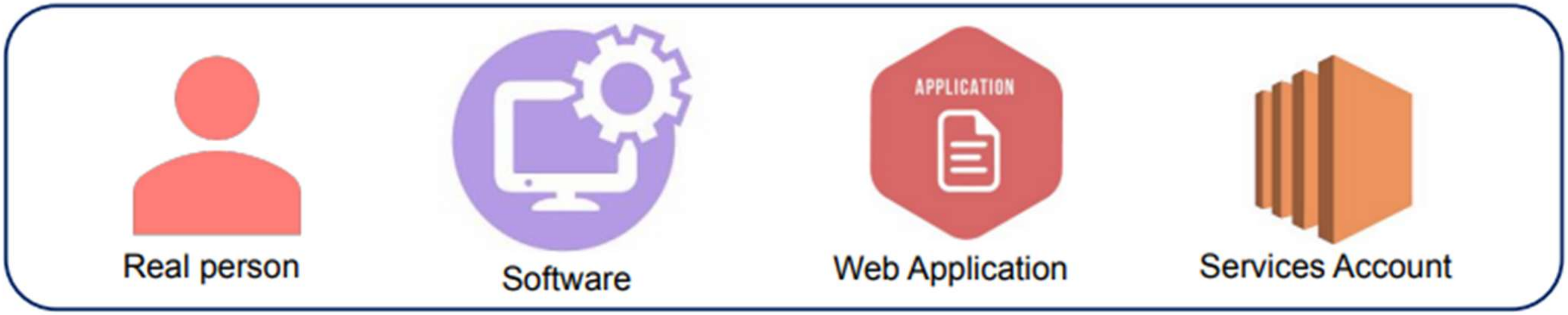


- IAM components can be mainly categorized under two terms; Identities and Permissions.

IAM Users

IAM Users

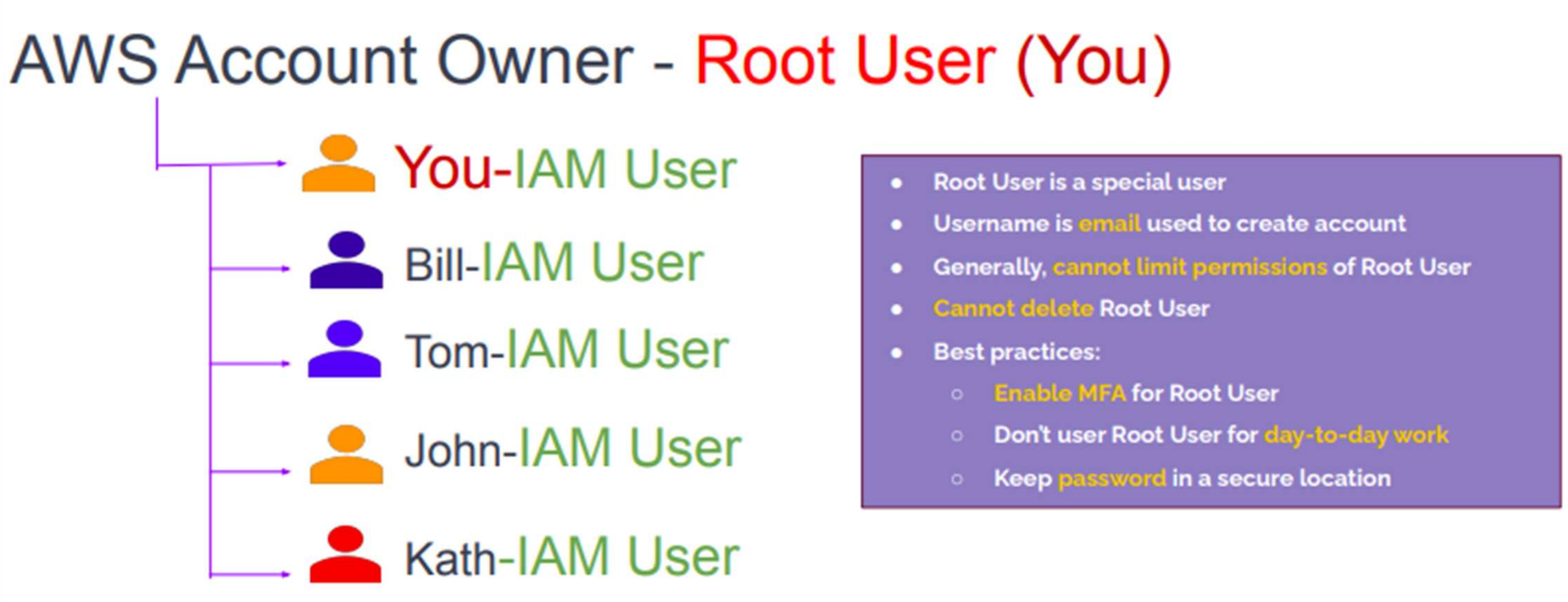
What is IAM User?



(IAM) user is an entity that you create in AWS to represent the person or application that uses it to interact with AWS

IAM Users

What is Root User and IAM User.



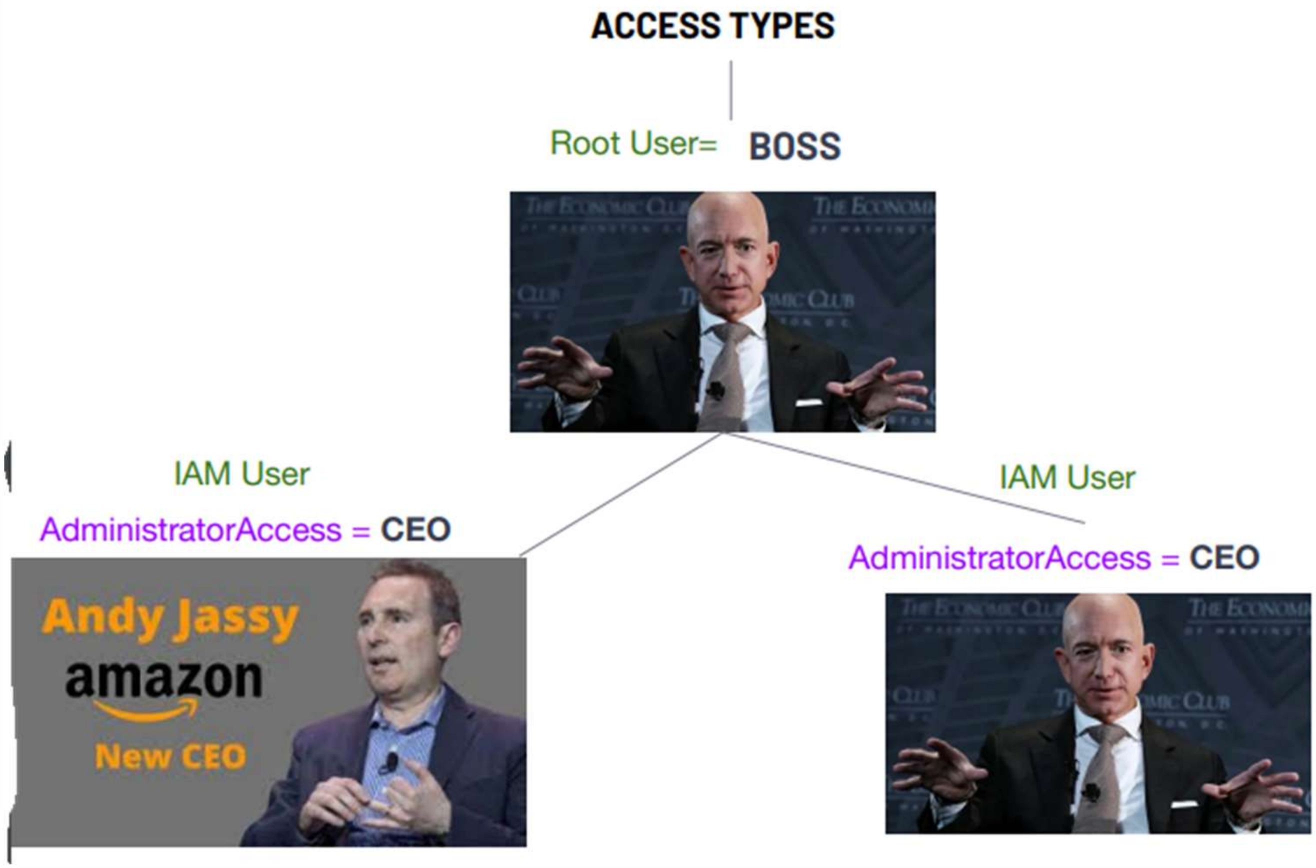
AWS Account Owner - Root User (You)

- You-IAM User
- Bill-IAM User
- Tom-IAM User
- John-IAM User
- Kath-IAM User

- Root User is a special user
- Username is email used to create account
- Generally, cannot limit permissions of Root User
- Cannot delete Root User
- Best practices:
  - Enable MFA for Root User
  - Don't user Root User for day-to-day work
  - Keep password in a secure location

IAM Users

What is Root User and IAM User.



ACCESS TYPES

Root User= BOSS

IAM User

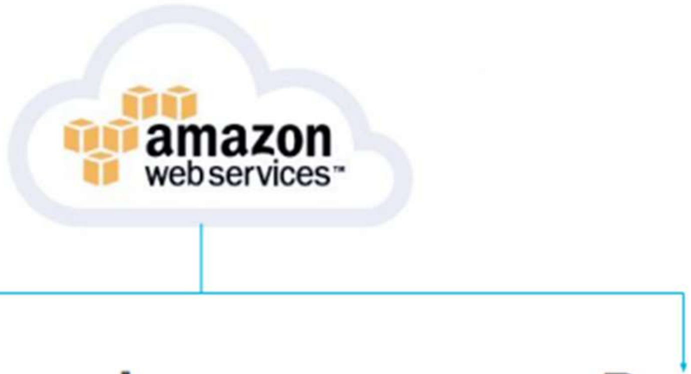
AdministratorAccess = CEO

IAM User

AdministratorAccess = CEO

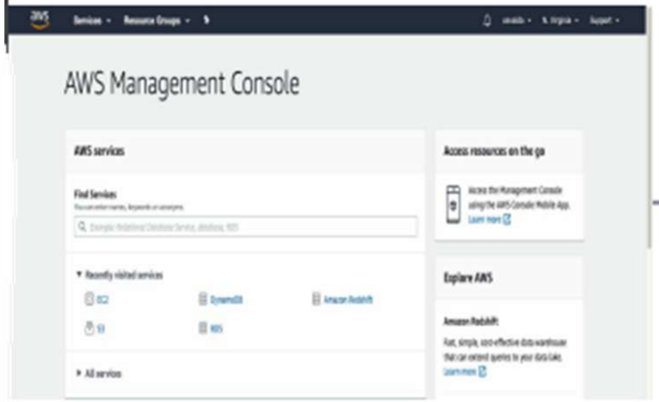
IAM Users

Access Types



AWS Management Console

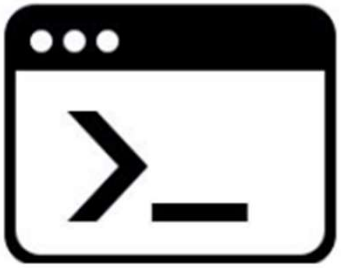
Programmatic Access



AWS Management Console

Access the Management Console using the AWS Console Mobile App. Learn more

Fast, simple, cost-effective data warehouse that can extend queries to your data lake. Learn more

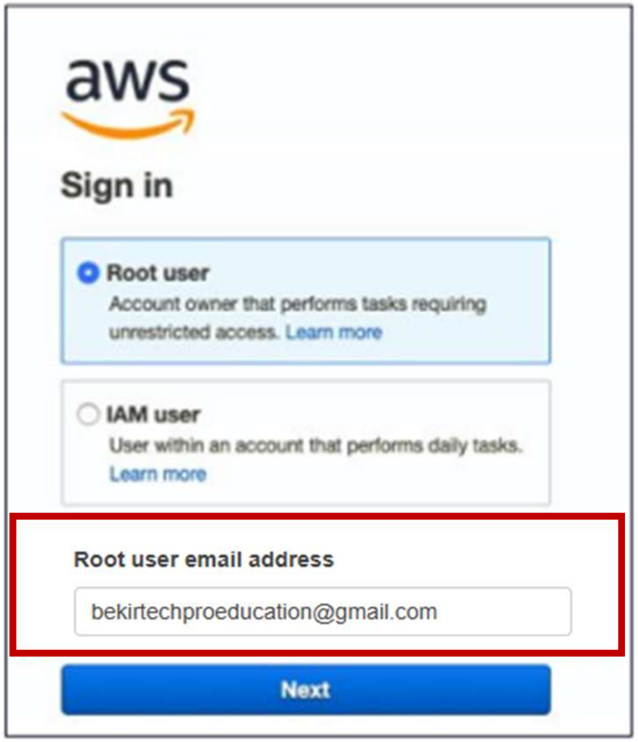


ROOT USER

IAM USER.

IAM Users

Sign in with Root User- AWS Management Console Access



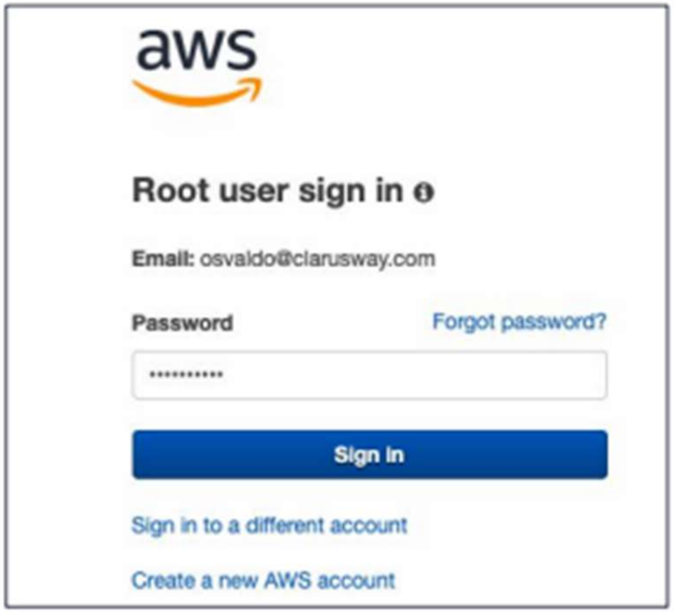
Sign in

● Root user
Account owner that performs tasks requiring unrestricted access. Learn more

○ IAM user
User within an account that performs daily tasks. Learn more

Root user email address: bekirtechproeducation@gmail.com

E-mail
Password



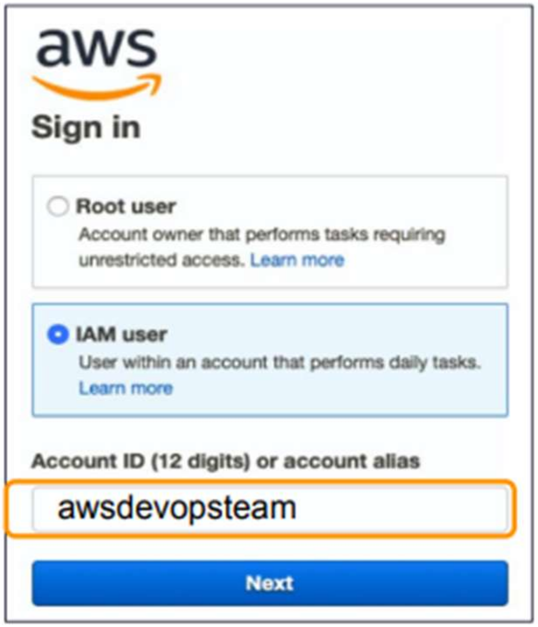
Root user sign in

Email: osvaldo@clarusway.com

Password: ••••••••••

IAM Users

Sign in with IAM User- AWS Management Console Access



Sign in

○ Root user

Account owner that performs tasks requiring unrestricted access. Learn more

● IAM user

User within an account that performs daily tasks. Learn more

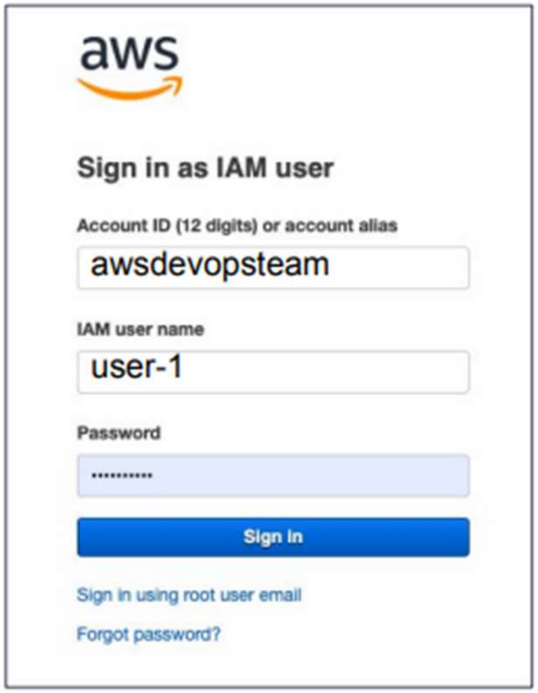
Account ID (12 digits) or account alias

awsdevopsteam

Account ID/Alias

User name

Password



Sign in as IAM user

Account ID (12 digits) or account alias

awsdevopsteam

IAM user name

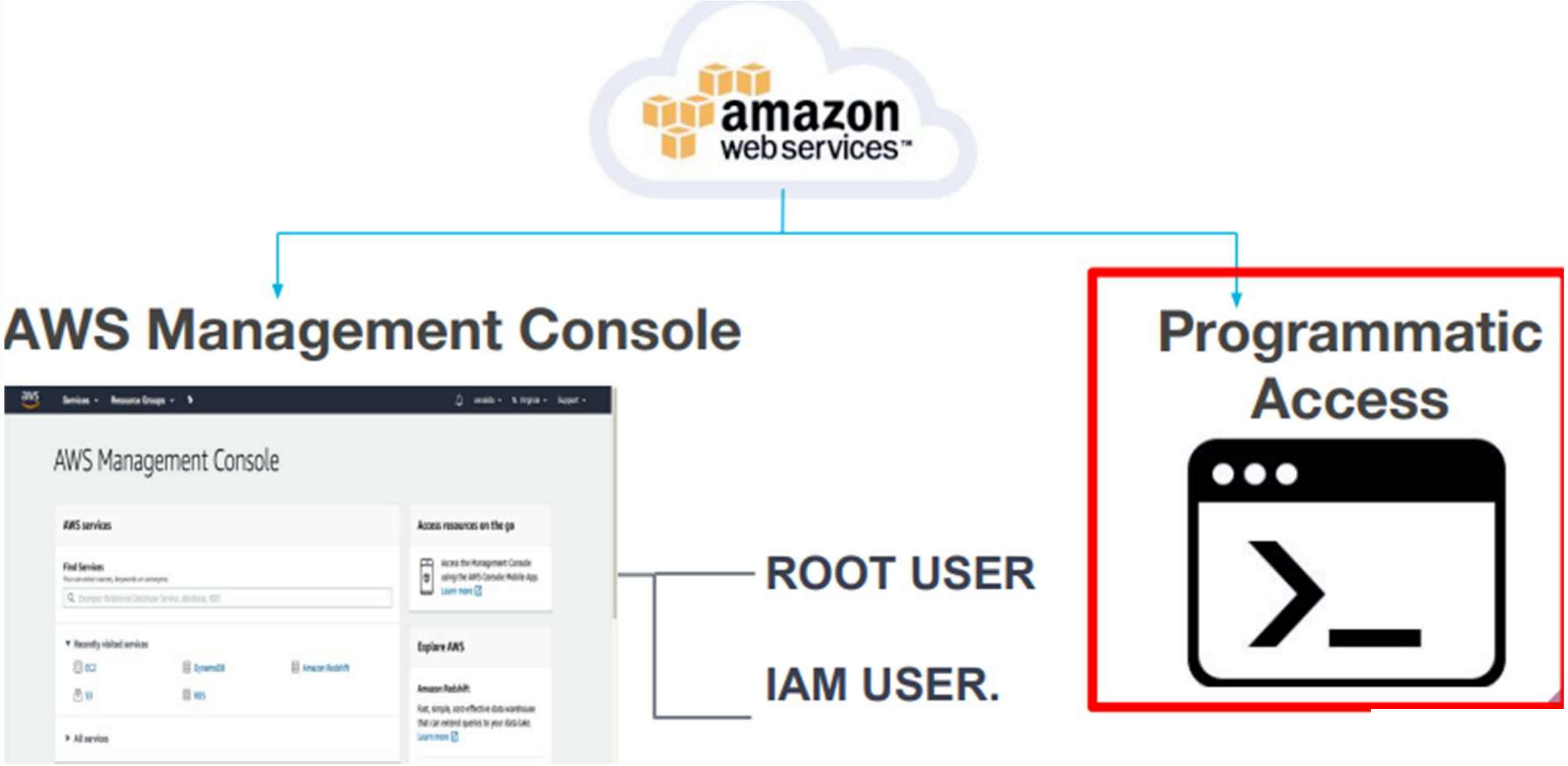
user-1

Password

••••••••••

IAM Users

Access Types



AWS Management Console

Programmatic Access

ROOT USER

IAM USER.

AWS Management Console

AWS services

Find Services

Access resources on the go

Access the Management Console using the AWS Console Mobile App. Learn more

Recently visited services

EC2 DynamoDB Amazon Redshift

S3 RDS

All services

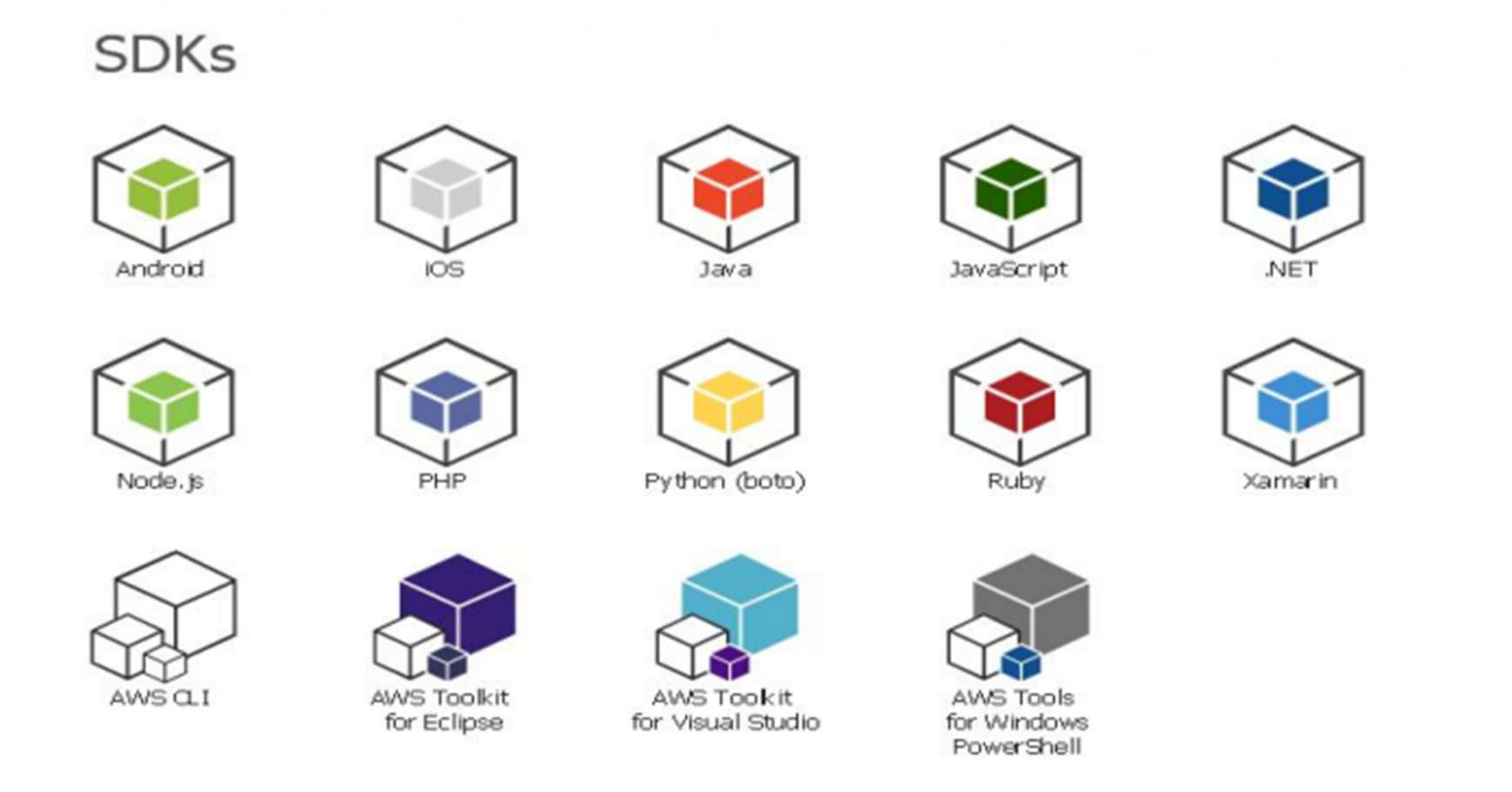
Explore AWS

Amazon Redshift

Fast, simple, cost-effective data warehouse that can extend queries to your data lake. Learn more

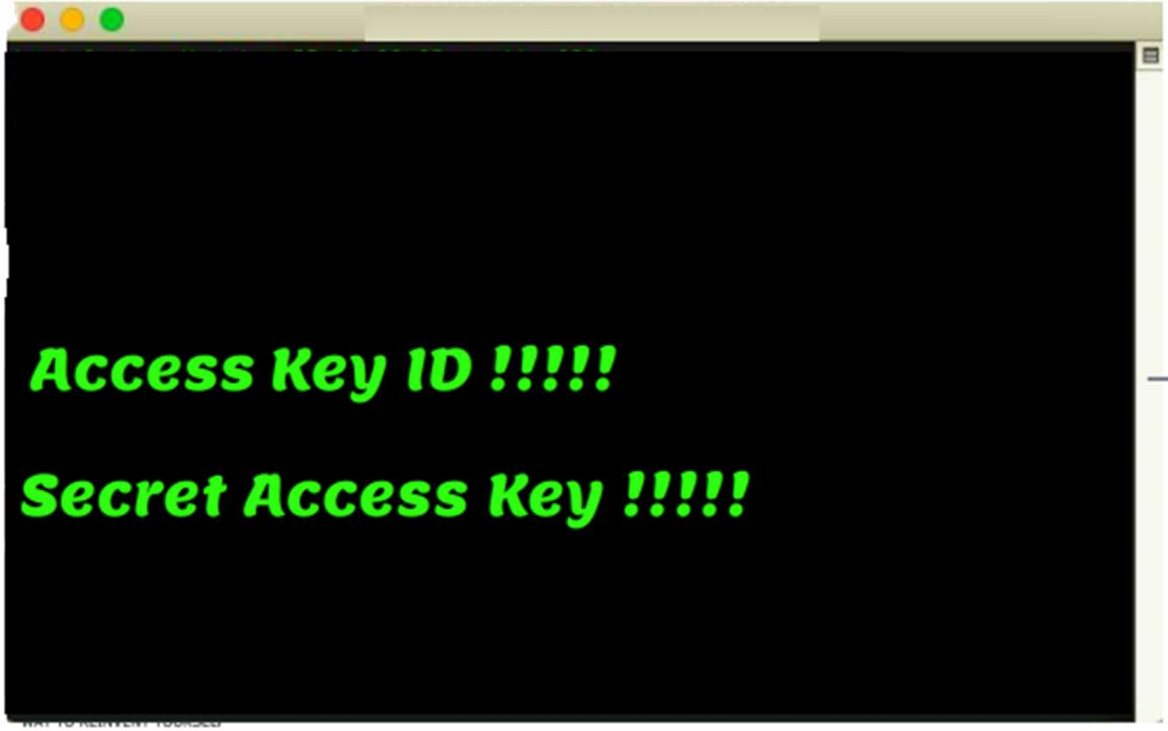
IAM Users

Sign in with IAM User- Programmatic Access



IAM Users

Sign in with IAM User- Programmatic Access



Access Key ID !!!!!

Secret Access Key !!!!!

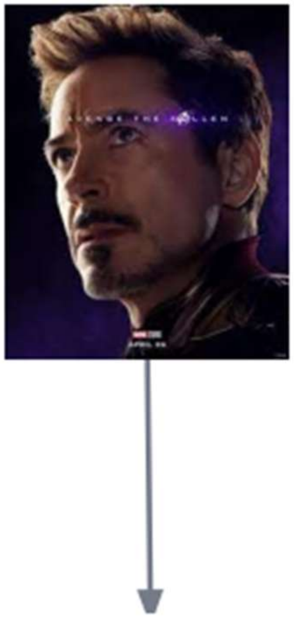
AWS CLI

**ROOT USER

IAM USER.

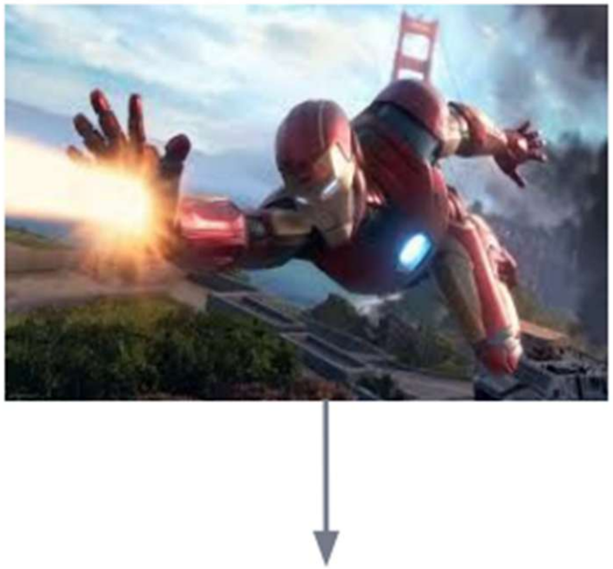
IAM Users

Sign in with IAM User- AWS CLI



YOUR TERMINAL

SECRET ACCESS KEY
ACCESS KEY ID

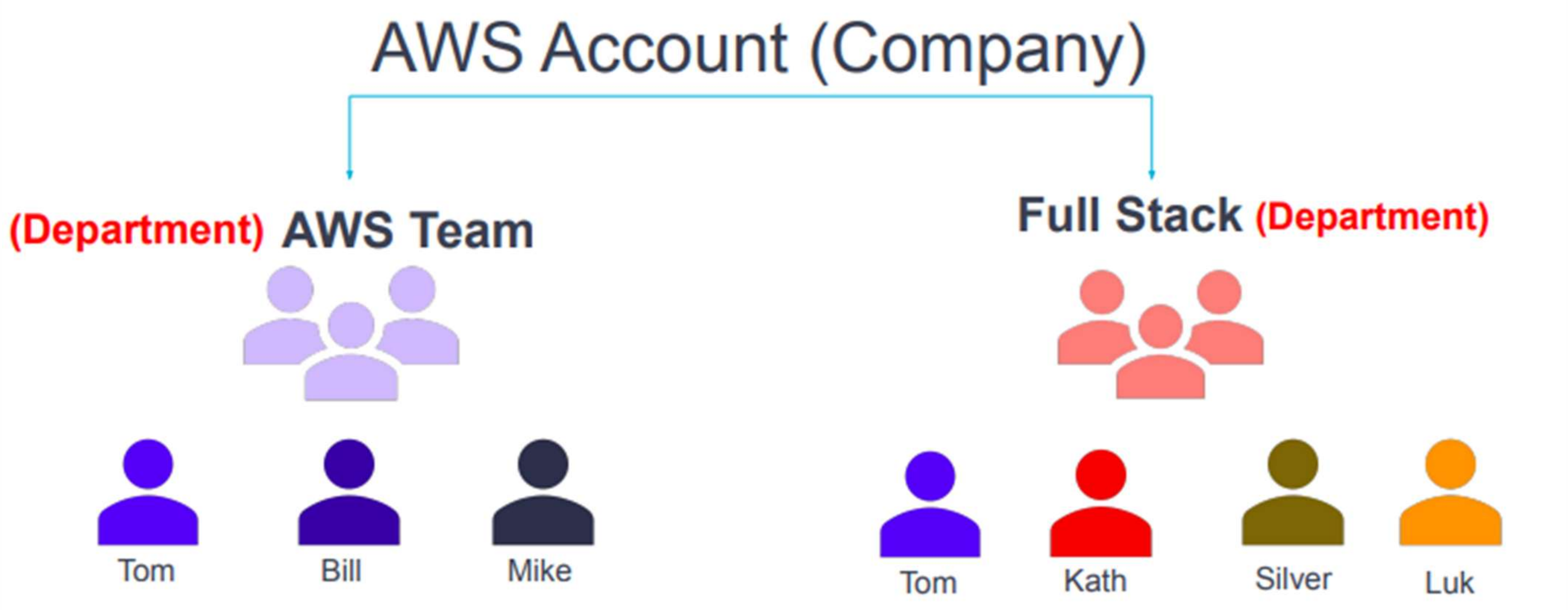


AWS CLI

IAM User Groups

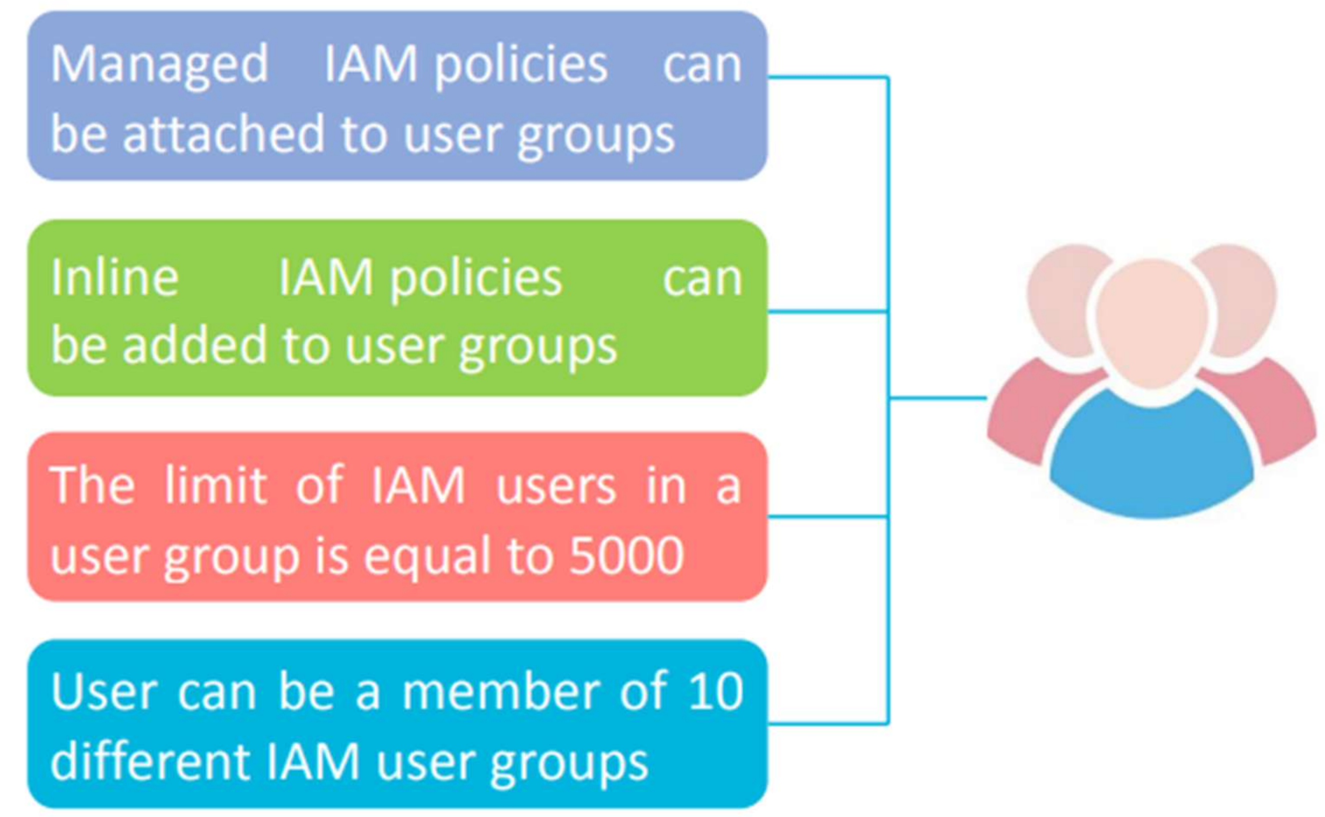
IAM User Groups

What is User Group in AWS?



IAM User Groups

IAM User Group Features



Managed IAM policies can be attached to user groups

Inline IAM policies can be added to user groups

The limit of IAM users in a user group is equal to 5000

User can be a member of 10 different IAM user groups

IAM Polices

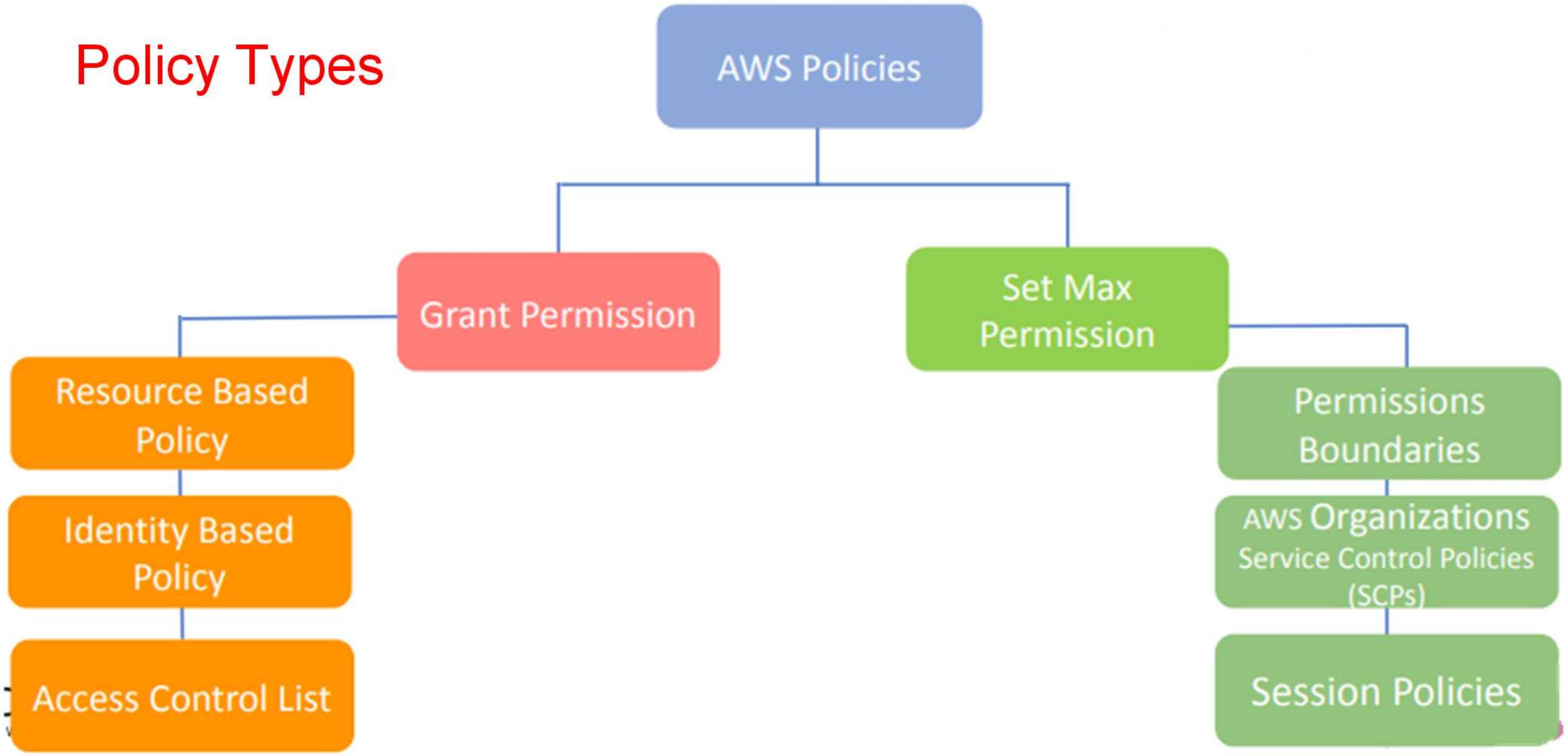
IAM Polices

What is a Policy?

- A policy is an object used to define the permissions of an identity or resource in AWS
- Permissions in the policies determine whether the request is allowed or denied.
- Policies are stored in AWS as JSON documents.

IAM Polices

Policy Types



AWS Policies

Grant Permission

Set Max Permission

Resource Based Policy

Identity Based Policy

Access Control List

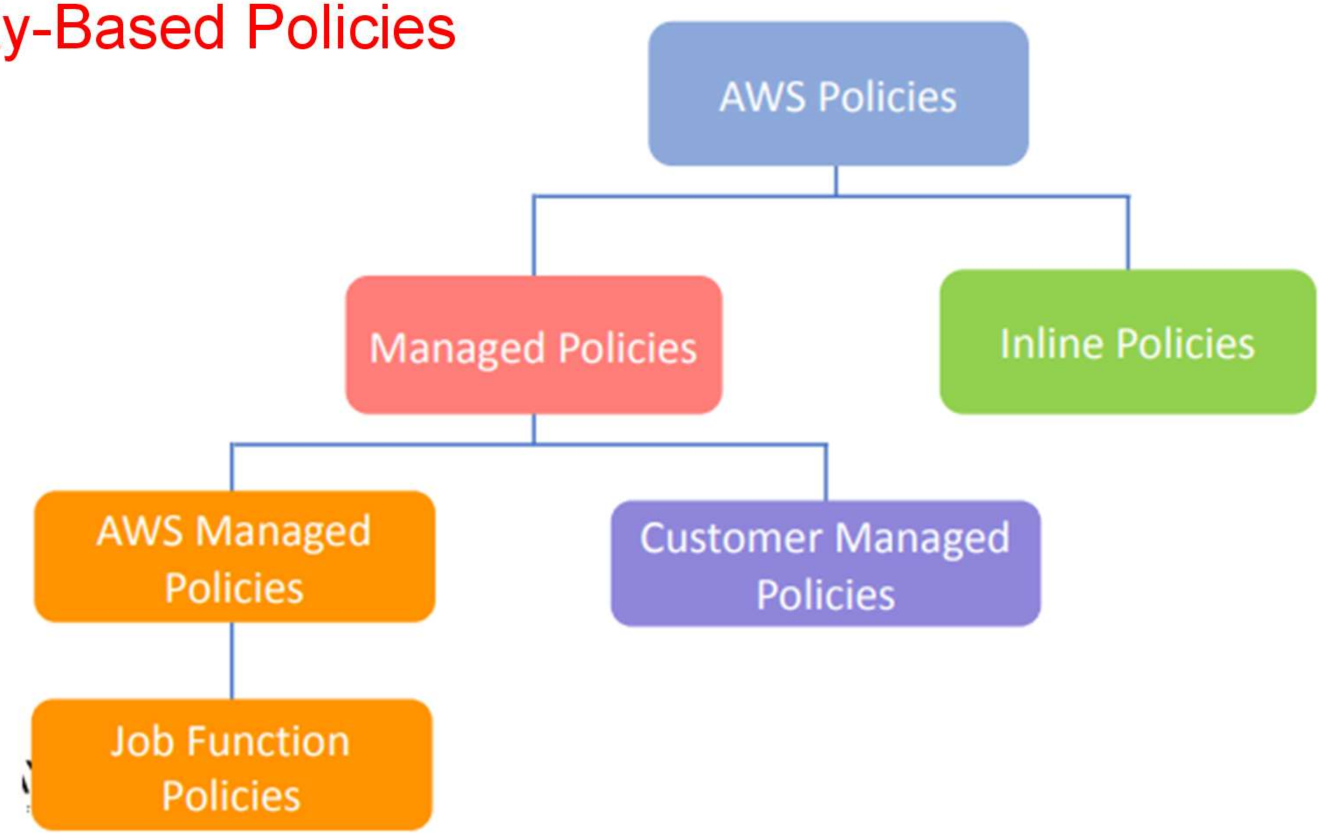
Permissions Boundaries

AWS Organizations Service Control Policies (SCPs)

Session Policies

IAM Polices

Identity-Based Policies



IAM Polices

Policies - JSON Identifiers

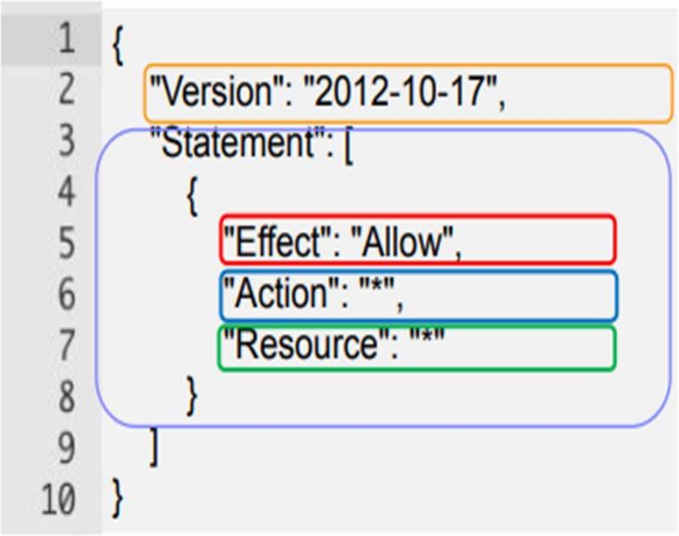
Version: Specifies the version of the policy document.

Statement: The basic part of a policy where you define permissions

Effect: It determines what the statement actually does. Can contain only the Allow or Deny values.

Actions: Determines which actions the identity can perform.(put, delete, get etc)

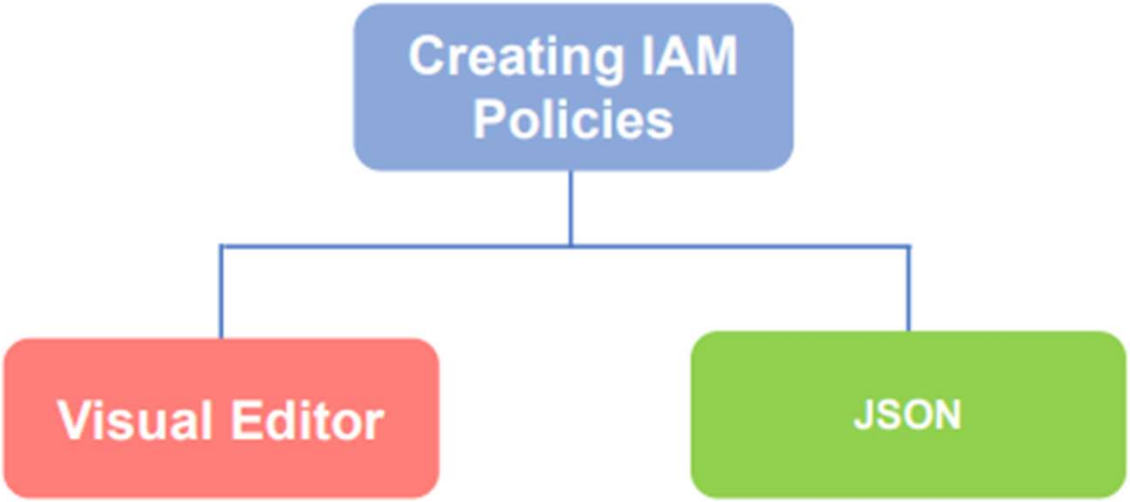
Resource: Explains in which AWS resources the statement will perform the operations.(EC2, S3 bucket etc.)



```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": "*",
            "Resource": "*"
        }
    ]
}
```

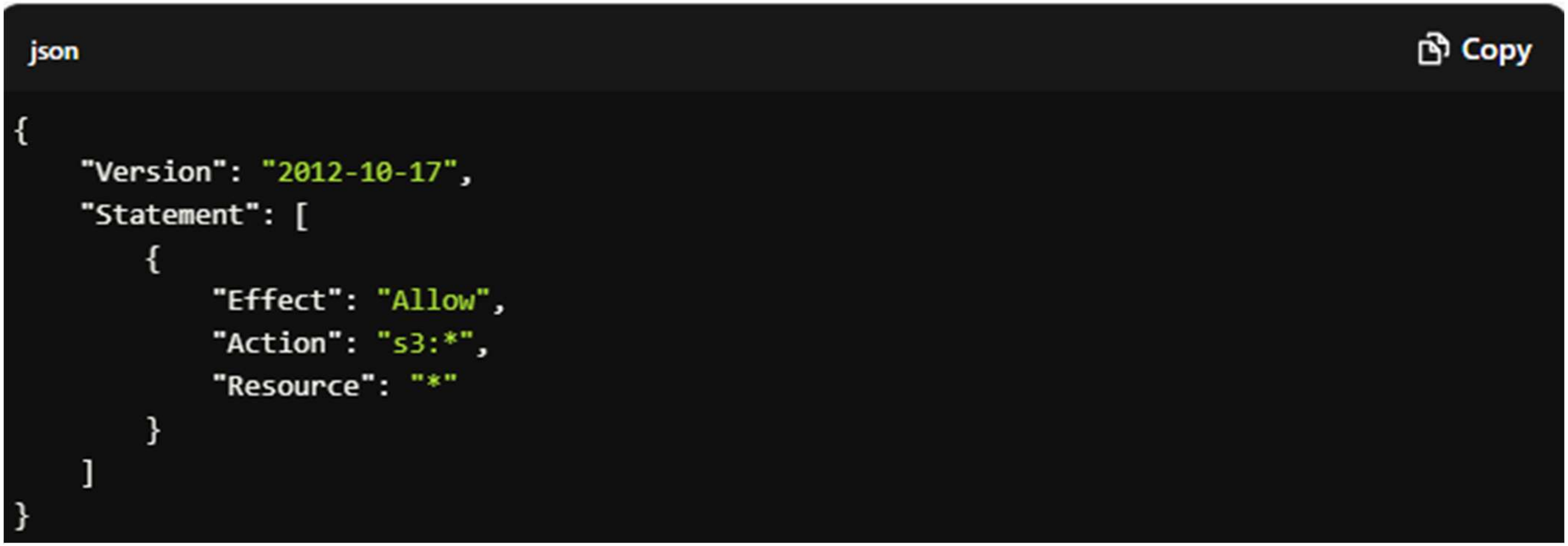
IAM Polices

Creating IAM Policies



IAM Polices

Creating IAM Policies



```json
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Action": "s3:*",
            "Resource": "*"
        }
    ]
}
```

IAM Roles

IAM Roles

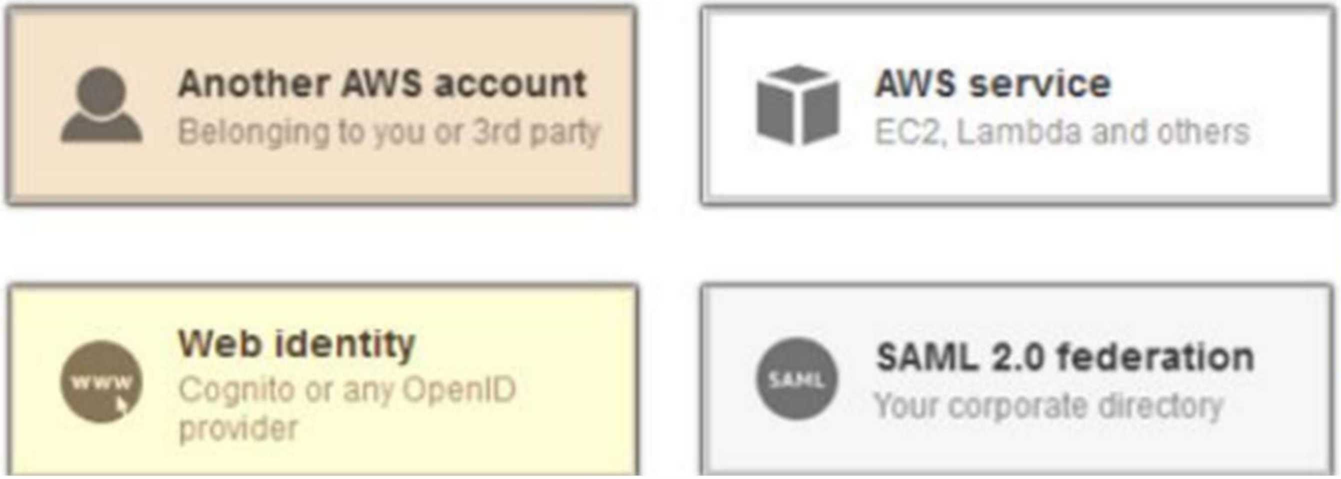
What is a Role in AWS?

- The authorization system where we determine how an identity can access the AWS resources.

- An IAM role, similar to an IAM user, is an IAM identity that has specific permissions that you can create in your account.

IAM Roles

Who can assume an IAM Role?

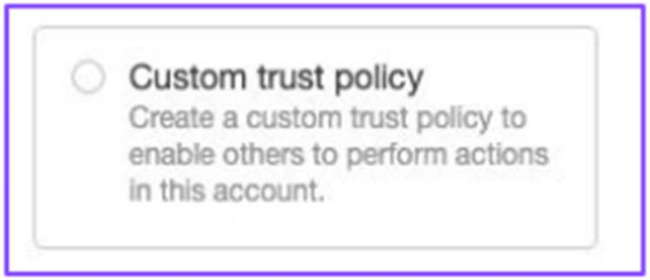


Another AWS account
Belonging to you or 3rd party

AWS service
EC2, Lambda and others

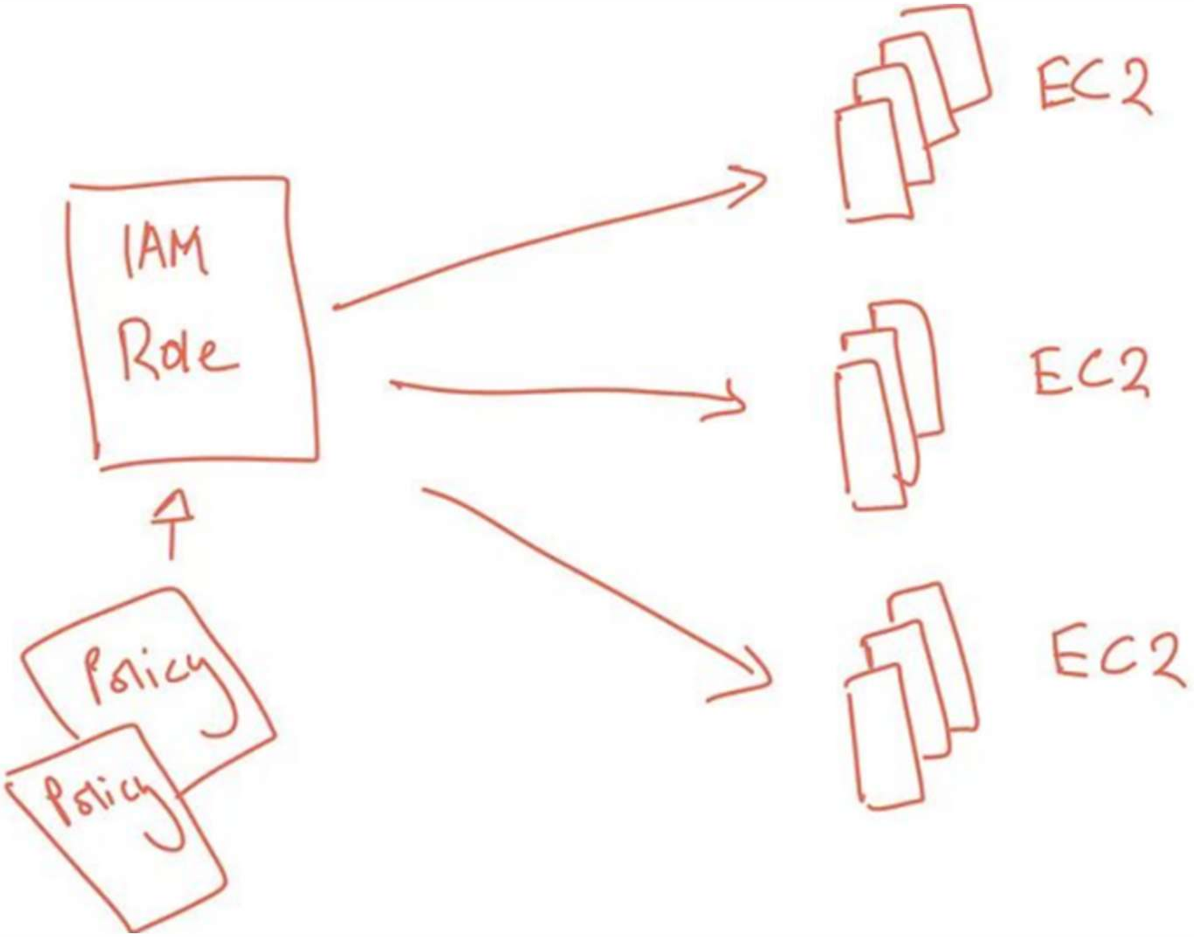
Web identity
Cognito or any OpenID provider

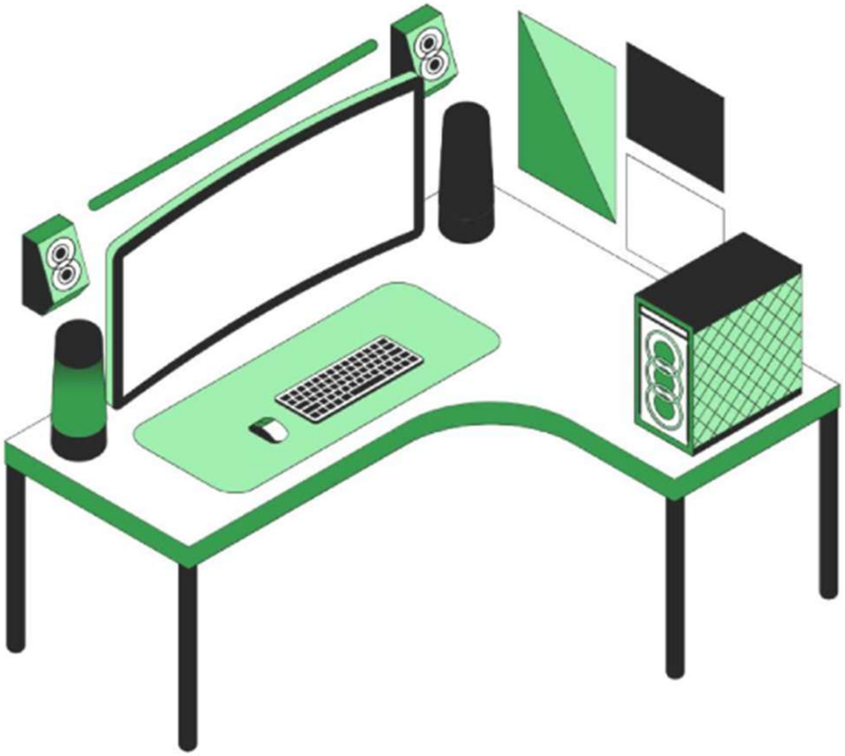
SAML 2.0 federation
Your corporate directory



○ **Custom trust policy**
Create a custom trust policy to enable others to perform actions in this account.

IAM Roles





Do you have any questions?

Send it to us! We hope you learned something new.