Identity & Access Management (IAM)

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According to Gartner

Identity and Access Management (IAM) *is the security discipline that enables the right individuals to access the right resources at the right times for the right reasons.*

Identity and Access Management (IAM)

- AWS Identity and Access Management (IAM) enables you to securely control access to AWS services and resources for your users.
- Using IAM, you can create and manage AWS users and groups, and use permissions to allow and deny their access to AWS resources.

IAM Features

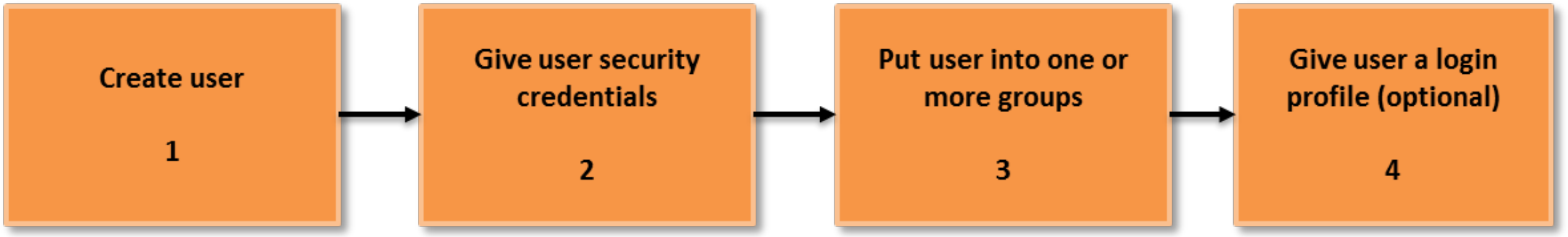
- **Shared access to your AWS account** - You can grant other people permission to administer and use resources in your AWS account without having to share your password or access key.
- **Granular permissions** - You can grant different permissions to different people for different resources.
- **Secure access to AWS resources for applications that run on Amazon EC2** - You can use IAM features to securely give applications that run on EC2 instances the credentials that they need in order to access other AWS resources.

Benefits of IAM

- Enhanced Security
- Granular control
- Temporary Credentials
- Flexible security credential management
- Leverage external identity systems
- Seamlessly integrated into AWS services

Enhanced Security

- IAM enables security best practices by allowing you to grant unique security credentials to users and groups to specify which AWS service APIs and resources they can access.
- IAM is secure by default; users have no access to AWS resources until permissions are explicitly granted.



Granular control

- IAM provides the granularity to control a user's access to specific AWS services and resources using permissions. For example, terminating EC2 instances or reading the contents of an Amazon S3 bucket.

Temporary Credentials

- In addition to defining access permissions directly to users and groups, IAM lets you create roles.
- Roles allow you to define a set of permissions and then let authenticated users or EC2 instances assume them, getting temporary access to the resources you define.

Flexible security credential management

- IAM allows you to authenticate users in several ways, depending on how they want to use AWS services. You can assign a range of security credentials including passwords, key pairs, and X.509 certificates
- You can also enforce multi-factor authentication (MFA) on users who access the AWS Management Console or use APIs

Leverage external identity systems

- You can use IAM to grant your employees and applications access to the AWS Management Console and to AWS service APIs, using your existing identity systems.
- AWS supports federation from corporate systems like Microsoft Active Directory as well as external Web Identity Providers like Google and Facebook.

Seamlessly integrated into AWS services

- IAM is integrated into most AWS services.
- This provides the ability to define access controls from one place in the AWS Management Console that will take effect throughout your AWS environment.

IAM Best Practices

- Lock Away Your AWS Account Root User Access Keys
- Create Individual IAM Users
- Use AWS Defined Policies to Assign Permissions Whenever Possible
- Use Groups to Assign Permissions to IAM Users
- Grant Least Privilege
- Use Access Levels to Review IAM Permissions
- Configure a Strong Password Policy for Your Users
- Enable MFA for Privileged Users
- Use Roles for Applications That Run on Amazon EC2 Instances
- Delegate by Using Roles Instead of by Sharing Credentials
- Rotate Credentials Regularly
- Remove Unnecessary Credentials

Additional Resources

https://csye6225.cloud/