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CS 435

Fall 2024

Big Data & Cloud Security

AWS Lab Report 3.1

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Grambling State University

Big Data and Cloud Security

**Purpose or Objective:** To recognize how to use IAM identity-based polices and resource-base policies, describe how IAM users can assume an IAM role, and explain how S3 (Simple Storage service) bucket policies and IAM identity-based policies affect what users can see and modify.

**Procedure/s:**

**Task 1.**

A screenshot of a computer

Description automatically generatedA screenshot of a computer

Description automatically generatedSign into the devuser account using the information provided by the AWS Details tab in the lab with the username of devuser.

**Task 2.**

A screenshot of a computer

Description automatically generatedA screenshot of a computer error

Description automatically generatedNow I need to attempt to read the S3 buckets, EC2 and IAM.

EC2 attempt and S3 attempt

**Task 3.**

Now that I know I have no permissions to do anything, I need to look at the Identity-based policies and see why that is. The user devuser has access to a group called DeveloperGroup and has an IAM policy given to that group. Since I have access to read these policies I copied them to a notepad and called the file DeveloperGroupPolicy.json.

**Task 4.**

A screenshot of a computer

Description automatically generatedAttempting write-level access with AWS services.

A screenshot of a computer error message

Description automatically generatedThe last bucket is a bucket I created meaning I have permission to

But I don’t have access to write anything in them. A screenshot of a computer program

Description automatically generated

Looking at the json code, it has given me permission to create buckets but not to write anything in them.

**Task 5.**

A screenshot of a computer

Description automatically generatedI need to assume the role of an IAM role. After switching my role with the Devuser account I was able to download the file

A city skyline with lights reflecting on water

Description automatically generated

Switching between the role and account im able to access S3 and download the files needed and place them in the appropriate buckets because bucket2 lacked a 2nd jpg file.

**Task 6.**

Understand why I’m allowed to do this while assuming a role and not as a user. A computer screen shot of a computer code

Description automatically generated

Looking at this JSON file I can see that I was given permission to interact with bucket2 but never bucket1 with the user and needed to asssume the role to go around this requirement.

**Conclusions:**

This lab has shown me that there are a lot of explicit permissions given to users and roles exclusively. In order to access resources, I needed to assume the role of the DeveloperGroup. Having access to the DeveloperGroup role I was able to read and write in S3 buckets allowing me to see that bucket1 had two files while bucket2 only had one file. I needed to use this role to allow me to take the 2nd file in bucket1 and place it in bucket2. Also, while I was in the assumed role I lost my permission to look at permissions of roles. Very cool lab that showed me the interplay of roles and users and how to accomplish goals utilizing both.

**Knowledge Check (3) Screenshot:**

A screenshot of a test results

Description automatically generated

Just a note, they wont let me retry when I land a 70%