Emons, Joep (student)

[Bedrijfsnaam]  [Bedrijfsadres]

fin Ops

# Description

During our last PDP review, you gave me an assignment to use the new Athena plug-in for Grafana to show cost analysis over our 3 different clouds through an S3 bucket. One of the obstacles facing me during this assignment was that only AWS was incurring costs in our project. So I had to create fake data that we uploaded to S3 so I could show off the Grafana monitoring part.

# Grafana Setup

Afbeelding met tekst, schermopname, Multimediasoftware, Grafische software

Door AI gegenereerde inhoud is mogelijk onjuist.

This dashboard shows the overall cost between the 3 different cloud providers.

Afbeelding met schermopname, diagram, Grafische software, Multimediasoftware

Door AI gegenereerde inhoud is mogelijk onjuist.

Here we show how money is used between Azure, Firebase, AWS, and different AWS services to show what our biggest spenders are.

## Plugin install

Afbeelding met tekst, schermopname, software, Multimediasoftware

Door AI gegenereerde inhoud is mogelijk onjuist.

For setting up the plugin, we first had to set up authentication. I just used iam role for this.

Afbeelding met tekst, schermopname, Lettertype, software

Door AI gegenereerde inhoud is mogelijk onjuist.

Afther this we had to specify our s3 bucket where athene could create is queries and get the results also we had to specify the athene workgroup we wanted I just used the default primary when doing this part I constantly got a error because of workgroup permissions after google I found out that Grafana had some where thing where I doesn’t work if you use the dropdown windows so you had to type out primary yourself and then it worked. This was the

**error executing query: operation error Athena: GetWorkGroup, https response error StatusCode: 400, RequestID: ea9aca50-16bc-45a8-8f09-763c05d05c7b, InvalidRequestException: 1 validation error detected: Value '' at 'workGroup' failed to satisfy constraint: Member must satisfy regular expression pattern: [a-zA-Z0-9.\_-]{1,128}**

# athene setup

In Athens, I had to connect to my S3 bucket. I did this in the settings menu, from there on had could use the queries on my S3 bucket.

Afbeelding met tekst, schermopname, Lettertype, nummer

Door AI gegenereerde inhoud is mogelijk onjuist.

For the plugin to work, I had to create a database. I created a database with 3 tables, one for each cloud.

Afbeelding met tekst, schermopname, Lettertype, lijn

Door AI gegenereerde inhoud is mogelijk onjuist.

Here you can see the querry where I created the aws costs table and used the other table ass the location for the data.

Afbeelding met tekst, schermopname, nummer, Lettertype

Door AI gegenereerde inhoud is mogelijk onjuist.

Here you can see the tables created. These tables read the data from the S3 bucket in the folders that are called the same.

# S3 bucket data

For the Grafana and Azure, I let AI create fake data so we could see some costs, then I uploaded this data into my S3 bucket through the CLI. The AI made a script for me to generate fake data and automatically upload it into my S3 bucket at the correct location.

For AWS, I could just download from the cost analysis and upload to the S3 bucket.   
Afbeelding met tekst, schermopname, lijn, Lettertype

Door AI gegenereerde inhoud is mogelijk onjuist.

# Queries used

Afbeelding met tekst, Multimediasoftware, software, Grafische software

Door AI gegenereerde inhoud is mogelijk onjuist.

This query is for displaying daily AWS costs over a set period.

Afbeelding met tekst, schermopname, Lettertype, menu

Door AI gegenereerde inhoud is mogelijk onjuist.

This is a query for showing the 3 different total costs next to each other to see which cloud has generated the most costs.

Afbeelding met schermopname, lijn

Door AI gegenereerde inhoud is mogelijk onjuist.  
Afbeelding met lijn, Perceel, tekst, diagram

Door AI gegenereerde inhoud is mogelijk onjuist.

Here you can see mee comparing the two graphs the lines look the same except for the seconds spike in Grafana its not ass high I think this is because when grabbing data the second time I filteret out taxes so that why these cost look lower.

Afbeelding met schermopname, Multimediasoftware, software, tekst

Door AI gegenereerde inhoud is mogelijk onjuist.

These are the outputs of these clouds

# Next plan

For the next plan, I want to connect Azure and Firebase to Grafana so it automatically fetches the data and we don’t have to use fake data, but we have to discuss this with teammates because this will imply having some costs, and also getting credentials from group mates that I don’t currently have.

# Conclusion

I created a multi-cloud cost monitoring system using the Athena plug. This system brings together data from AWS, Azure, and Firebase so it's visible at a single central point. I learned how to set up an Athena database inside an S3 bucket to show data uploaded as CSV files, also to create a Grafana dashboard that has a clear overview of spending inside the 3 different clouds.