

AWS Frontier

Student: Shadman Noor

Product Owner: Masoud Sadjadi

Instructor/Faculty: Masoud Sadjadi, Florida International University

PROBLEM

AWS services provide a wide variety of resources and even a wider range of options to choose from while using these resources. With all these resources available it can be a bit overwhelming to navigate the resources and see which ones are currently active or are not working properly. Our main goal was to provide a centralized platform which displays all the currently active resources in one place while maintaining security. AWS frontier was built from scratch to ensure there would be no gaps in security and users can easily view a simplified version of all the implemented resources.

CURRENT SYSTEM

Our current version of AWS Frontier has the following features:

- Encryption/Decryption of AWS user Access and Secret keys
- Display a list of IAM Users on an account
- Display a list of IAM Roles on an account
- Display a list of parsed CloudTrail API Logs
- Display a list of EC2 Instances
- Display a list of SQS Queues on an account
- Display a list of RDS Databases on an account
- Display a list of Lambda functions on an account
- Cost Explorer Chart (monthly)

RESULTS

Contributions

- My role in this project was mainly frontend development, managing the HTML structure of the webpage, CSS styling and UI/UX management.
- My main goal was to make the webpage visually pleasant while keeping everything simplified using a grid layout so that all the information is shown in one page with scrollable options. The color schemes and grid designs are kept simple yet modern for future expansions. I have integrated external JavaScripts like chart.js for dynamic content loading and chart rendering.
- Overall, I tried to focus mainly on providing a responsive user interface which is visually pleasing and user friendly

Verification

- Verified that the application was pulling the correct information for an account by testing multiple accounts
- Verified the information that was retrieved for every resource by check manually through the AWS Console
- Verified the Access and Secret key inputs were being encrypted and decrypted to ensure security

IMPLIMENTATION

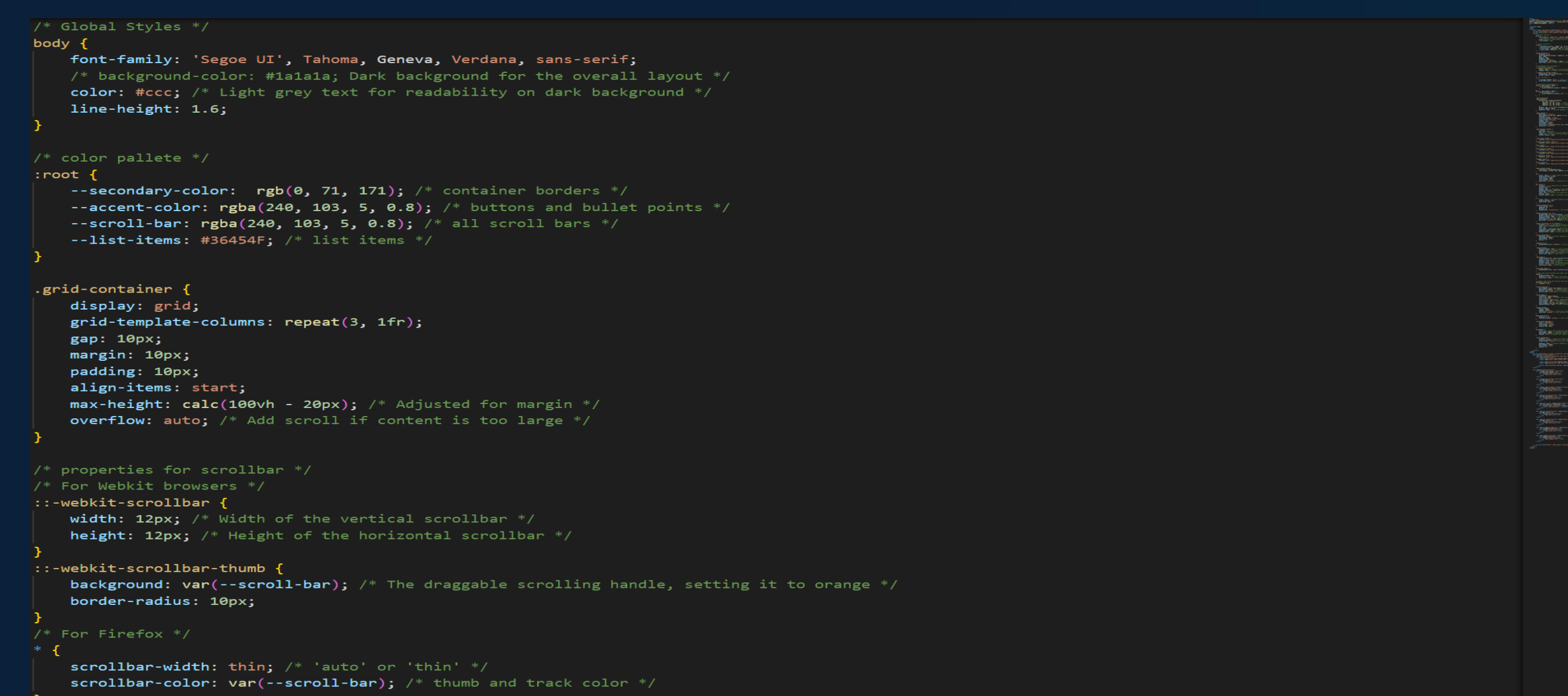
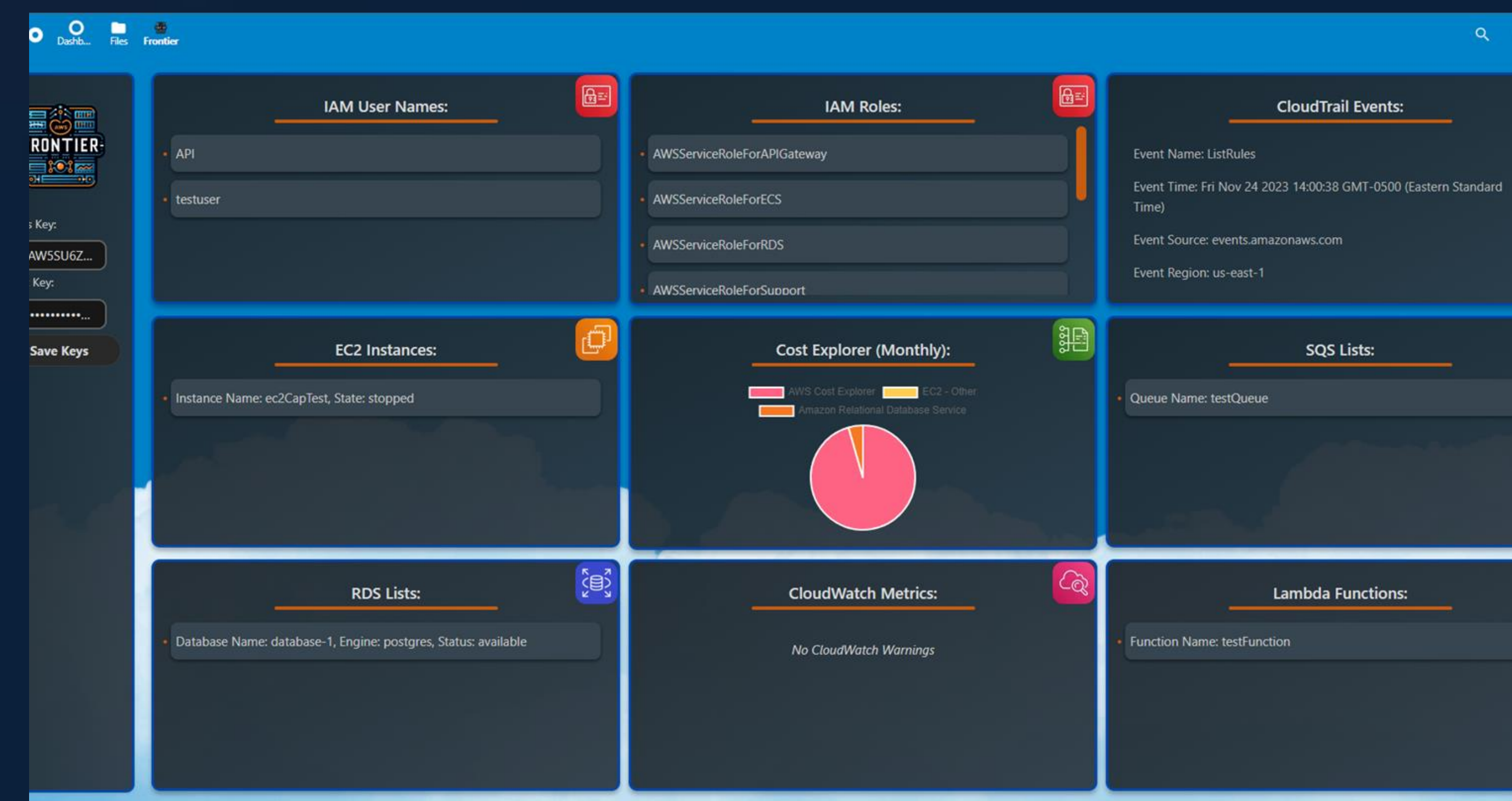


SOLUTION

The AWS Frontier team had developed an AWS monitoring panel which is hosted by Nextcloud for AWS. This panel successfully offers users to securely access their AWS resources using their access key and secret access key. The keys can be encrypted and decrypted depending on the users needs. The panel displays frequently utilized AWS resources while providing a user-friendly experience with its simplified layout and designs which is done using custom containers for each individual resources for ease of access and visibility.

Summary

The AWS Frontier team dedicated significant efforts in researching both Nextcloud and AWS services to create this project. Extensive research was done to make sure the compatibility of our code seamlessly integrated with the Nextcloud framework. This project demanded long work hours but the reward was also great as it was a great learning experience. I was able to learn a lot about frontend development through trial and error with the help of my team. The efforts my team and I put into this project shows through out results and it also leaves room for future development and innovations.



ACKNOWLEDGEMENT

The material presented in this poster is based upon the work supported by XXXXX (name of the project sponsor: federal, state or local government, or corporate partners, where applicable). We/I thank XXXX for his/her/their assistance and mentorship that I/we received throughout the senior design project.